

Amateur Radio

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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



- QRP CW TRANSMITTER WITH BREAK-IN
- COMING, READY OR NOT 30 METRES
- THE "TRINITY/G5RV55 ANTENNA

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JANUARY 1982

VOL. 50, No. 1

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Cover Photo



AT THE NSW FIFTH CONFERENCE OF CLUBS — See page 17
VK2 President Athol VK2BAD (left) presenting SC9 UHF transceiver and Merit Award to David VK2BDT, delegate/secretary of Goulburn ARC.

QSP ···· QSP ···· QSP ····

For those of us concerned with the future of amateur radio a major problem is knowing how to cater for the beginner.

The "would be" candidate for the amateur licence examination in the past had only limited access to our ranks. The help of a local amateur, the occasional article in AR or Radio and Hobbies (now Electronics Australia) covering exam questions and answers and for city dwellers maybe the odd WIA course, was about as much as the average potential amateur could expect.

Of recent years, especially since the great expansion in the number of radio clubs, many sources of tutoring became available. Still more recently "professional" educational bodies have shown greater interest in the training of examination candidates. Some would say the potential "examinee" has never had it so good!

But has he?

The recently licensed amateurs — particularly young Novices and even some ex-CBers — with little earlier exposure to radio communications, are not unlike technicians in training — apprentices — those who have successfully acquired the basic education from an apprenticeship. They NEED the assistance of "old-timers". By this I do not necessarily mean those who have held their licences since "the year dot". I do mean, however, active and competent amateurs of experience.

The newcomer has to learn the ways of amateur radio, the procedures and the standards and the various gentleman's agreements about such things as band plans, correct repeater operating procedures, etc.

Recently, only a few clubs are providing "hands-on" practical experience in their training schemes. However, there is little doubt that more is still required.

The individual amateur can do much to help the newcomer to integrate properly into the ranks of amateurs. It behoves us all to take a positive attitude — do you qualify?

P. A. WOLFENDEN VK3KAU,
Federal President.

APPRENTICESHIP?

W I A N E W S

AX

At the joint WIA/DOC meeting held late in October the Institute's application for the voluntary use of the AX prefix for the period of 15th August to 15th October, 1982, inclusive to mark the occasion of the Commonwealth Games was approved (RB 4/4/4 of 28/10/1981). Another call sign subject — the "C" calls. As previously reported in this column, the intention of the DOC to withdraw the concessions given in 1969 for "C" suffixes has now been confirmed but the 80 or so existing "C" call holders will retain their call whilst remaining licensed. The Institute reluctantly accepted that this exception to the general rule posed administrative problems to the Department "inconsistent with the necessity to concentrate resources for maximum productivity". A short discussion was also held on a suggestion that a special suffix series should be reserved for licences for visiting overseas amateur as applies in New Zealand and many other countries. The question of the attention of visitors being drawn to the Amateur Operators' Handbook at the time of being licensed (either over-the-counter or otherwise) was again brought up and DOC is considering the preparation of a suitable leaflet.

STICKERS

The question of the DOC "sticker" trial being conducted in Tasmania was discussed (see December AR "WIANEWS"). The Institute made it clear that it was desirable to have proper law enforcement but could foresee difficulties with this approach as far as the amateur service is concerned as the amateur licence

does not relate to specific equipment. The whole matter is to be discussed further in detail.

GENERAL

In relation to the new designations of emissions (see AR September 1981, page 26) the Department has issued a statement about this in the form of a leaflet dated July 1981. The leaflet states the effective date is 1st January, 1982.

The DOC advised the receipt of an application for a 28 MHz beacon from a group in West Australia. The Institute pointed out amateur adherence to an international agreement on 28 MHz beacon frequencies so that by orderly application a general state of chaos can be avoided which would not be of benefit to researchers of propagation conditions. The DOC agreed that adherence to such a band plan was desirable.

At this time it is too early to comment on the success or otherwise of the Institute's recruiting campaign using November AR. A few early indications suggest that much interest has been generated. The Institute relies on your good offices to join a member (or more if possible). More members are required so as to spread the financial burdens. Those in the printing trade, for example, will know that the bulk of the costs of the production of a book will be in the typesetting and generally setting up the work — two thousand copies will not cost twice as much as one thousand copies, only the costs of the paper and time for the extra thousand are involved. Not a perfect simile but sufficient to illustrate the point. Please assist.

QRP CW Transmitter with Break-In - Part 2

Drew Diamond VK3XU
43 Boyana Cres., Croydon, 3138

CIRCUIT DESCRIPTION

A Colpitts oscillator at Q1 is adjusted to tune from 28 to 29 MHz, and is buffered by Q2 and Q3. Q4 supplies about 4V P-P across the terminating resistor R18 on the divider board. C18 and D3 clamps the VFO output in order to supply a TTL compatible signal to the divider. U2 through U5 are Schottky flip-flops wired to divide by two. The output of each divider is buffered by an open-collector NAND gate U6 through U9 wired as 50 ohm line drivers. Each buffer is followed by a LPF for each frequency band. A clean sinusoidal waveform of about 2V P-P is obtained at the output of each filter when the dividers are enabled by the keying circuit.

The frequency selected by S1a is terminated by R36 and a proportion is tapped off by level control R37 and applied to the input stages of the output amplifier. The input impedance is high, so negligible impedance change occurs with adjustment of the level control. Q5 through Q9 form a broadband amplifier capable of supplying about 2W output. Each band has its own three-section LPF, switched in

by S1b and c to remove any harmonics produced in the output amplifier. A remarkably clean signal is the result.

Keying control is obtained with a 74123 retriggerable mono multivibrator at U10. When pin 1 is pulled low, Q goes high for a period determined by the delay pot R33. As long as pin 1 is pulled low with keying information, the delay period is placed on the end of the character. When keying stops, Q will go low again and allow the operator to listen on the channel. The Q or Q bar output of U10 is routed via S2 to the first divider U2. So during the receive mode, U2 will not divide, leaving the channel clear of any locally generated signal. The moment the keying line is pulled low, Q will go high and enable the dividers. Q5 supplies a shaped key positive supply to the early stages of the output amplifier resulting in a crisp click-free signal. S2 selects the Q bar output of U10 (always the opposite state to Q) to enable the dividers and facilitate netting without placing a signal on air.

The standard TR switch is simply a small capacitor C71 coupling the antenna to the

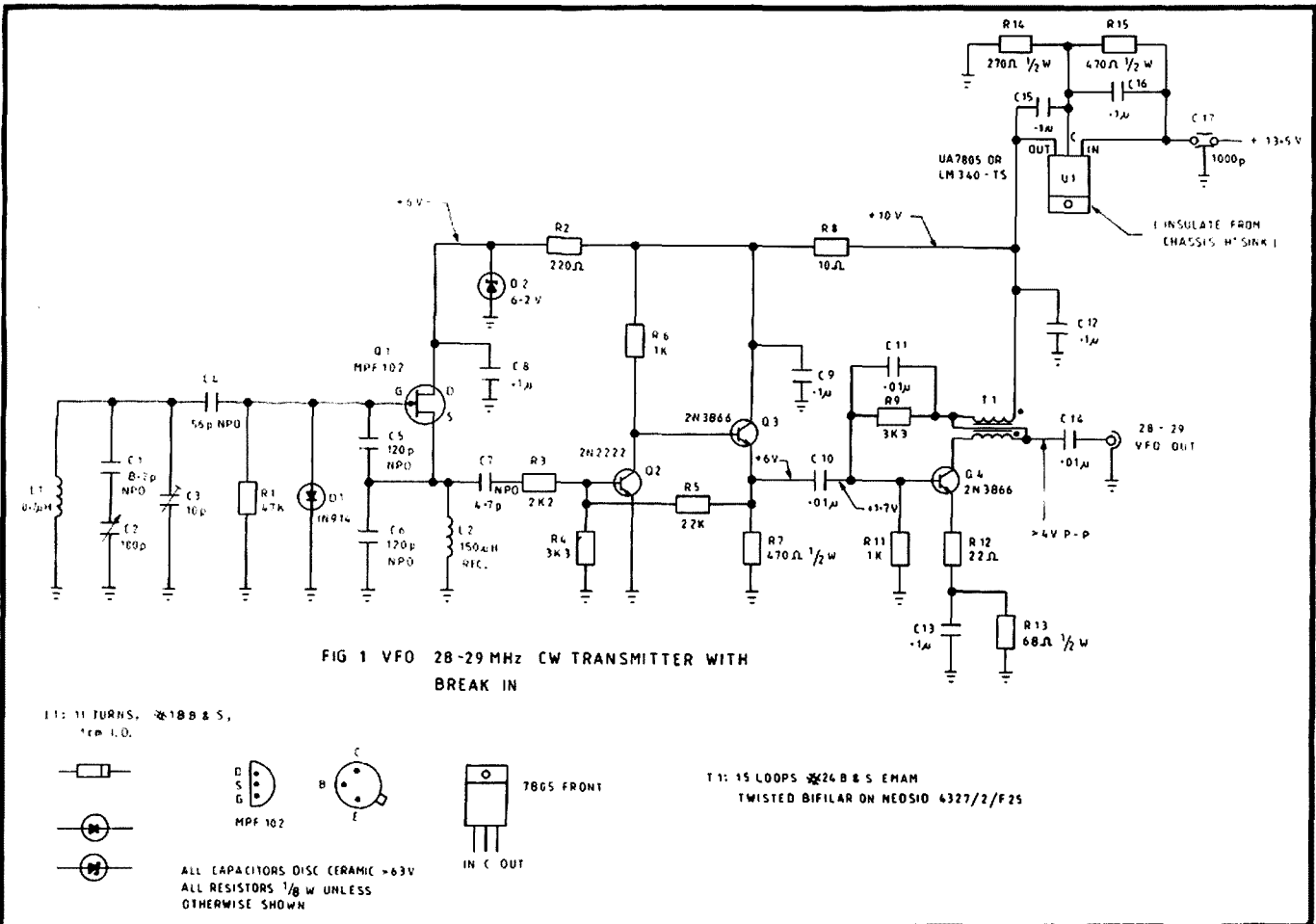
receiver input. A pair of back to back diodes protects the receiver input by limiting the voltage to about 1.2V P-P.

The optional improved TR switch provides better isolation. During receive, Q11 is turned on via R6-, so D9 and D10 are conducting, allowing the received signal to pass from the antenna to the receiver input. When Q of U10 goes high, Q10 turns on and Q11 goes off which opens D9 and D10, thus isolating the receiver from the transmitter output.

If an amplifier is to follow, additional circuitry must be employed to route the antenna to the receiver, as incoming signals cannot negotiate backwards through an external amplifier of course. The author can supply information on how this may be done with the linear described in AR, July 81.

An even simpler approach would be to omit the TR switch and use a separate antenna for the receiver, the input of which must be protected by back to back silicon small-signal diodes.

Part 3 will have construction details and board layouts.

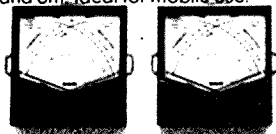


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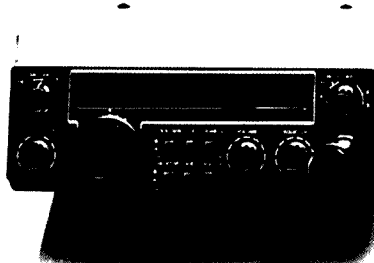
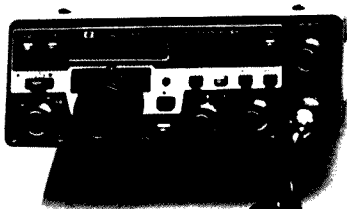
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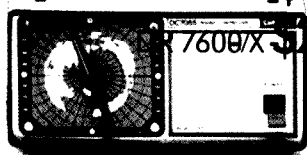
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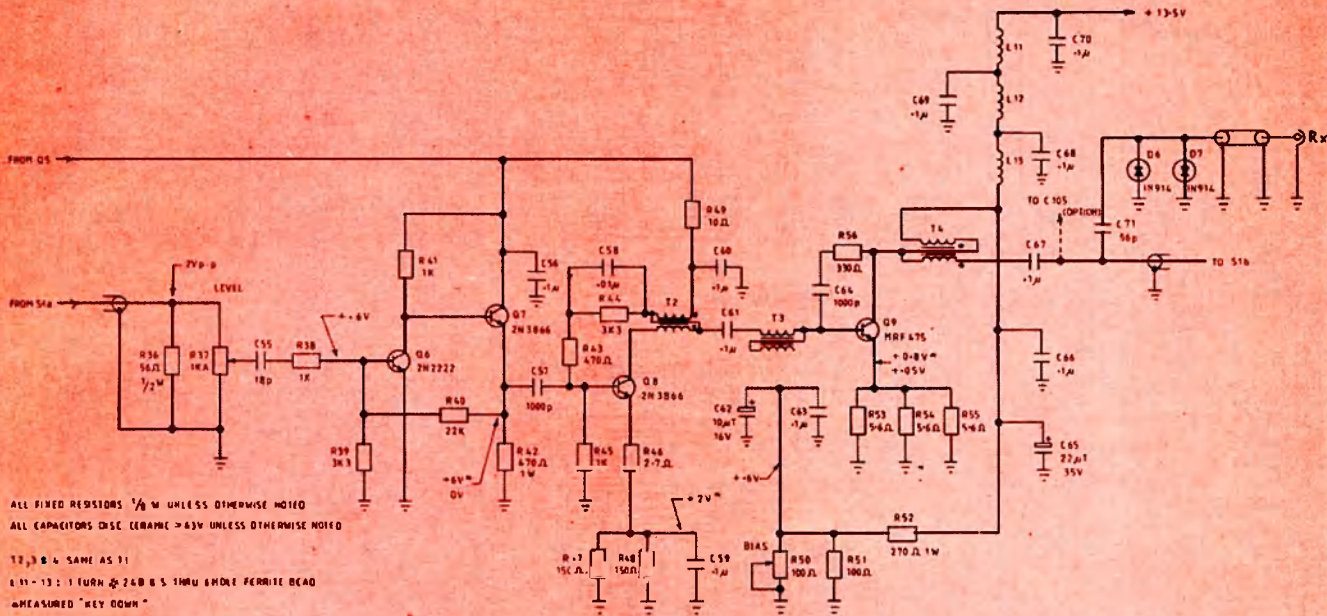


FIG 3 OUTPUT AMPLIFIER CW TRANSMITTER WITH BREAK IN

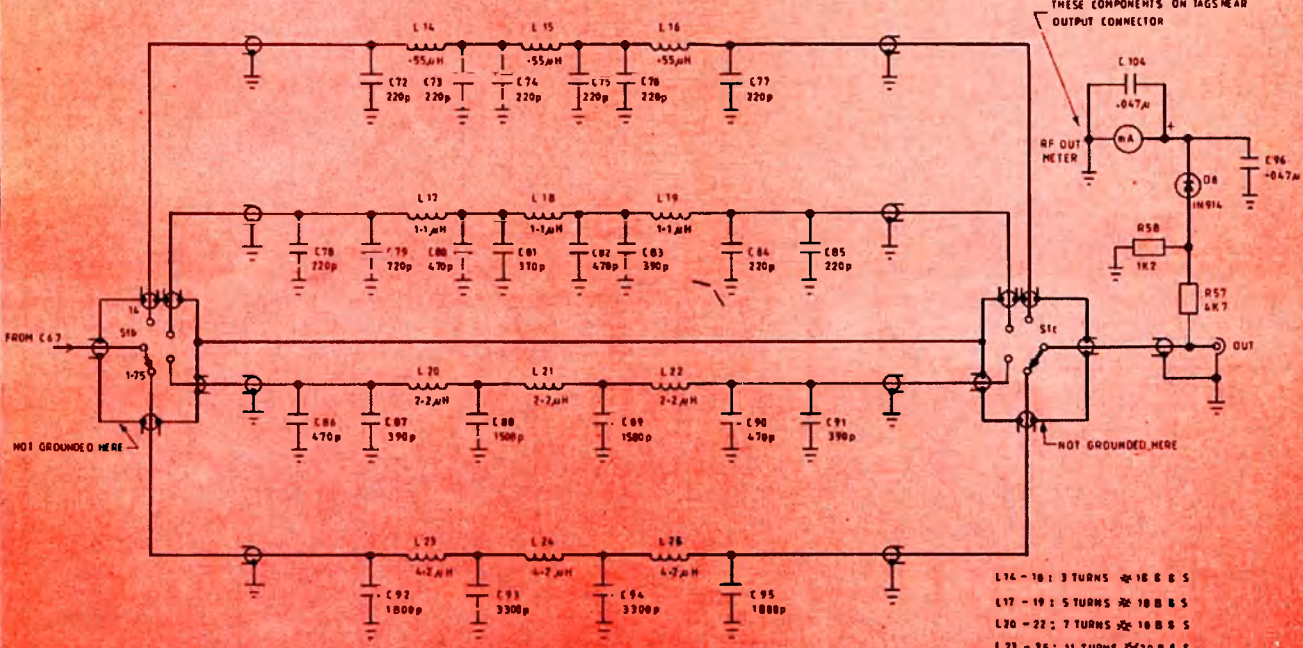
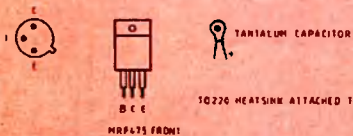


FIG 4 OUTPUT LOW PASS FILTERS CW TRANSMITTER WITH BREAK IN

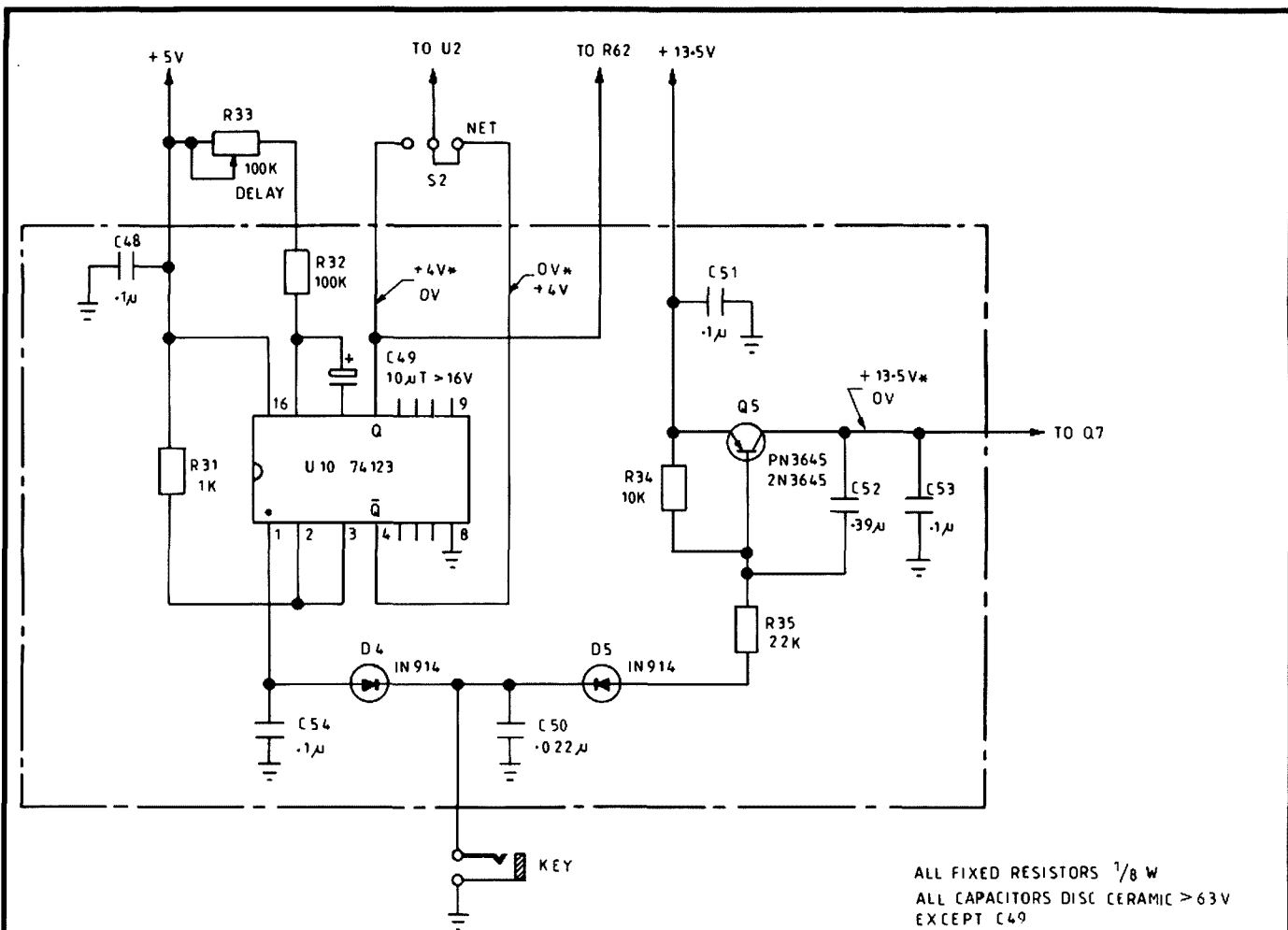
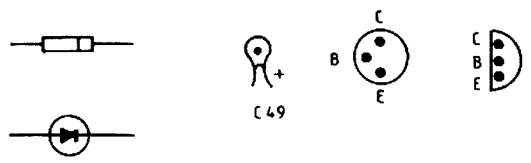
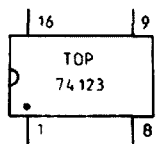


FIG. 5 KEYING AND CONTROL CW TRANSMITTER WITH BREAK IN

ALL FIXED RESISTORS 1/8 W
 ALL CAPACITORS DISC CERAMIC > 63V
 EXCEPT C49
 COMPONENTS INSIDE DOTTED LINE
 ARE ON BOARD

C52 - .33µ HARD
 .47µ SOFT

* MEASURED "KEY DOWN" INSIDE DELAY PERIOD



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Wealth of Time

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Well, my friend, you do have such a bank, and its name is "Time". Every morning it credits you with 86,400 seconds. Every night it cancels out, as lost, what-

ever this number you have failed to invest for whatever purpose. It carries over no balances. It allows no overdrafts. Each day opens a new account with you. Each night it burns the records of the day. If you fail to use the day deposits, the loss is yours. There is no going back. There is no drawing on the account for tomorrow. You must live the present — on today's deposits. Invest it so as to get from it the utmost in health, happiness, success and benevolence to your fellow man.—ARNS Bulletin, July 1981.

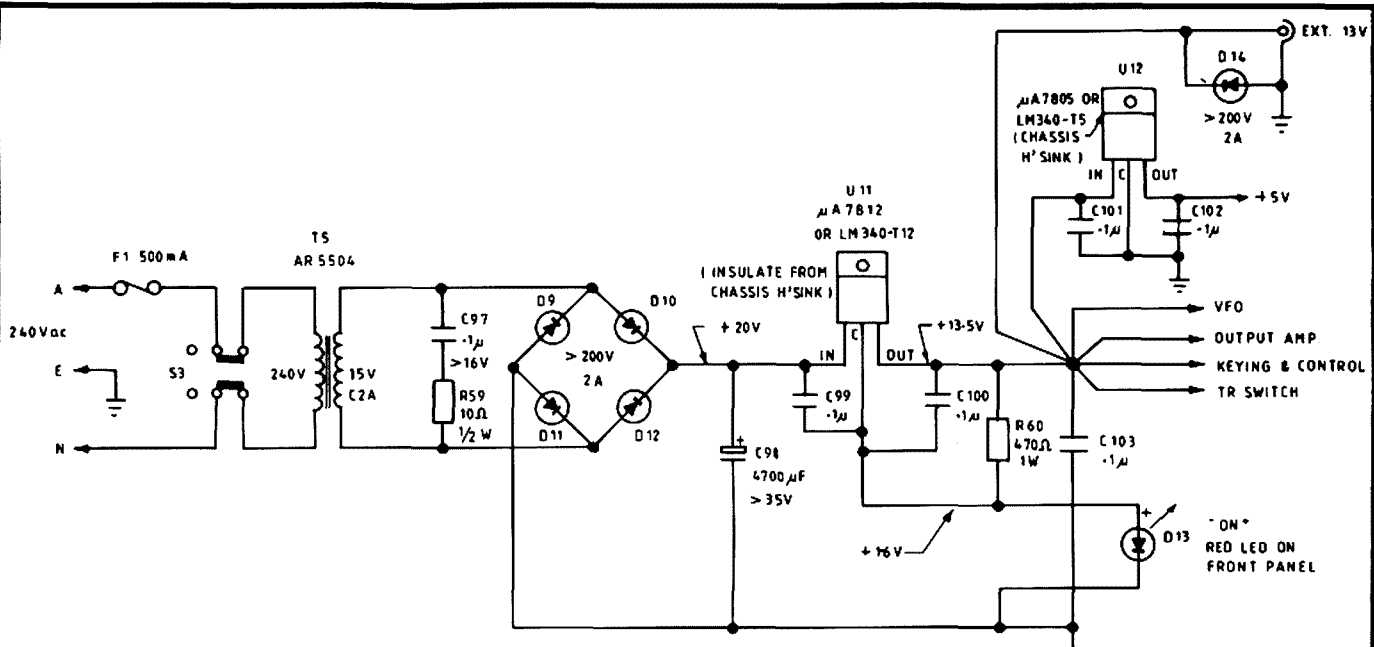


FIG. 6 POWER SUPPLY CW TRANSMITTER WITH BREAK IN

ALL CAPACITORS DISC CERAMIC
> 63V UNLESS OTHERWISE NOTED

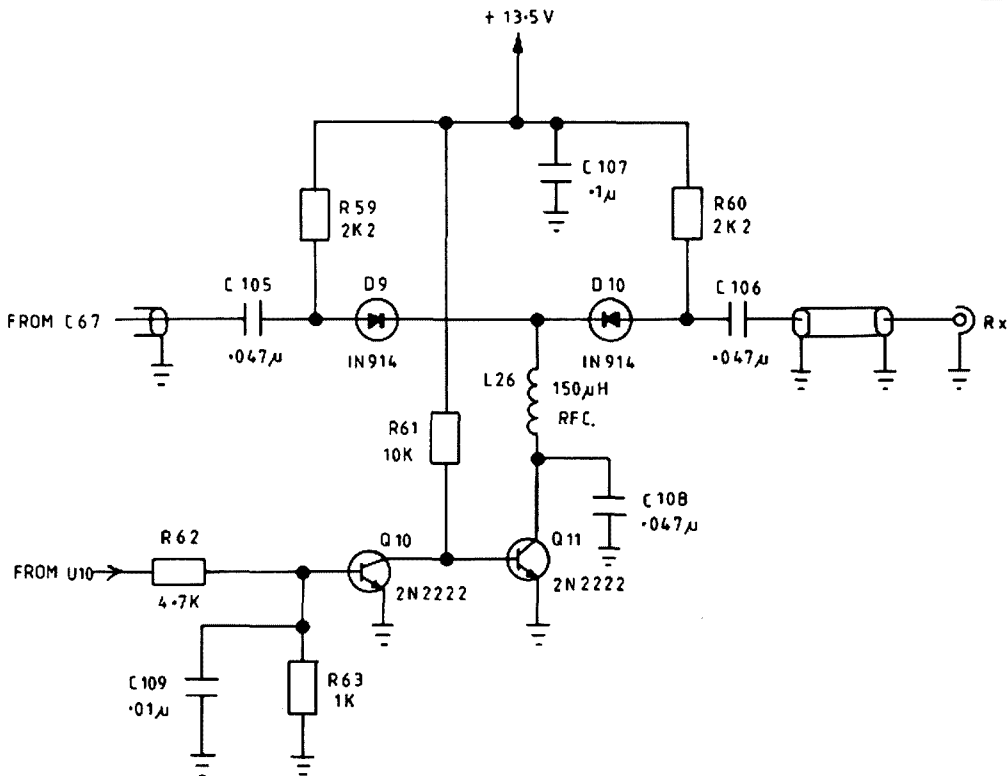
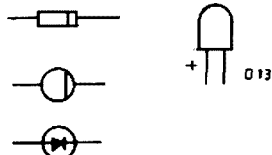


FIG. 7 TR SWITCH (OPTIONAL) CW TRANSMITTER
WITH BREAK - IN

Coming, Ready or Not - 30 m

Ron Cook VK3AFW

On January 1, 1981, a number of countries will grant their amateurs the right to operate on the new 30 metre band (10.100-10.150 MHz). When the Australian authorities issue the band will you be able to use it? This article will have you ready to go when permission is granted.

There are two problems to overcome, getting a transceiver for operation on the new band and erecting a suitable antenna. Once solved then the interesting part, exploration of the propagation, can begin.

THE TRANSCEIVER

Many amateurs already own new commercial transceivers that have the new WARC 79 bands installed. Having found the necessary money to buy such a unit these lucky people can skip on to the next part of the article. It is not too late to update your station and acquire one of the new rigs. As a matter of fact I was tempted to take this line of action. After considering that only one of the three new bands would be available within the near future and hearing of some simple modifications to the FT101 I got out the circuit diagram of my old faithful FTd x 401 to look at a cheap alternative.

MODIFYING THE FTDX401 AND OTHER TRANSCEIVERS

The modification to the FT101 involves adding capacitance to the driver stage such that the 14 MHz coil is also resonated at 10.1 MHz when the band select switch is in the WWV/JJY position. An extra contact must be added to the PA tank tap switch. This can be held in place by glue and/or a small nut and bolt. Then the tank coil must be tapped, circuits tuned and that's that.

For the FTd x 401 all the necessary switch contacts are there but an extra coil must be added for the driver stage plate circuit. I keep a selection of ancient valve-type TV chassis in the garage and occasionally find something useful amongst them. A quick look at the chassis on the top of the pile showed that the IF strip used several coils of 7 mm (about 0.3 in.) diameter complete with a metal spring clip mounting similar to that of the other coils in the FTd x 401. As the coil once operated above 30 MHz it seemed that operation at 10 MHz would be satisfactory. The original winding was removed and 20 turns of 24 gauge enamelled copper wire was wound on and secured with a few coats of nail polish. A 22 pF plastic dielectric capacitor was connected in parallel and the coil temporarily connected to the driver circuit. A dip oscillator was used to set the slug so that with the preselect control set for resonance on receive at 10.10 MHz resonance was also achieved by the driver circuit.

The coil was a sloppy fit in the spare hole in the bracket provided for the auxiliary bands in the 401, so a little glue

was applied and allowed to dry. Flying leads previously connected to each end of the coil were trimmed and one connected to the unused WWV/JJY tab of switch S1h and the other to the B+ copper foil.

Next a neutralising circuit capacitor was fitted. I used a 35 pF (33 pF nominal) silver mica capacitor from the junk box. This was fitted between the appropriate tag of S1J and ground.

Next the PA. The 14 MHz band was tapped (S1m) at 6 turns and the 7 MHz band at 9 turns. Drawing a graph of turns against frequency indicated that 7½ turns were required for 10 MHz. I decided to try 7 turns as it is inconvenient to connect to anything other than complete turns.

When the set was modified for 160 and 11 metres (AR February 1976) the two parts of the variable loading capacitor were connected in parallel. If extra PA tuning capacitance was required I could use S1k or else change the PA tap.

Subsequent tests with the dummy load showed similar meter readings and similar power output and efficiency as for 7 and 14 MHz. A slight adjustment to the slug in the new driver coil was required. The signal as copied in an R1000 receiver was clean, so all seems well.

There are many FTd x 401 and similar transceivers that could be modified in the fashion described. For units without an auxiliary band position or a WWV/JJY 10 MHz position an examination of the circuit may give you some alternative ideas. For example with an FT200 you may be prepared to sacrifice the 20 or 15m band and wind new coils on the existing formers. The older transceivers could have a new lease of life as roll off of sensitivity as occurs on 28 MHz will not be a problem on 10 MHz. (Refer also AR October 1981.)

THE ANTENNA

The G5RV

If you have a G5RV coupled to an ATU then, providing the ATU will tune at 10 MHz, you have a very useful 30 metre antenna. The flat-top will be 1.1 λ long. The 34 feet long open wire feeder section is 0.37 λ long, so the feed impedance here will be high as the length of feeder plus half the flat-top is 0.92 λ. The radiation pattern will be of four main lobes inclined at about 45 degrees either side of the wire axis. The flat-top should be as high as possible, 8 metres (about 25 ft.) being the minimum useful average height.

The 80 Metre Dipole

An 80 metre dipole, resonated on a frequency of 3.6 MHz, is about 1.4 λ long at 10.1 MHz. The feed impedance will be much lower than for the G5RV but an ATU will still be necessary for a good match to the transmitter, although it may be possible to get proper loading with the pi coupler in older rigs. The horizontal radiation pattern will be similar to that of the G5RV except that two narrow lobes at rightangles to the wire will now also be apparent.

A Half-Wave Dipole

Table 1 gives the nominal sizes for a half-wave dipole and Fig. 1 shows a method of construction. The plastic sheet used to provide the centre insulator should be 5-10 mm thick. This sheet also provides a means of anchoring the coax. The holes for the dipole wires should be about 4 mm diameter and have their edges well chamfered. The holes for the coax should also be chamfered and be big enough so that the coax slides through without being either loose or too hard to pull through. Silastic should be used to prevent water entering the coax and to provide protection against fatigue for the connections to the dipole. Be liberal with the sealing material and stick the inner conductor and braid to the plastic sheet about halfway to the dipole.

A Quarter-Wave Vertical

A 7.0 metre long tube driven against four radials each about 7.2m long will provide good DX capabilities. As with all verticals, the radiator must be clear of tall trees (and/or your tower) and at a height such that the radials are clear of other wires, etc. If the radials are detuned the resonant frequency, impedance radiation pattern (and hence performance) are affected.

The W8JK on 10.1 MHz

Fig. 2 shows the dimensions for one form of the W8JK antenna. A gain of 3.5 dB can be obtained compared to a dipole. The antenna has two lobes at rightangles to the line of the wires. This antenna can be used over a frequency range of 2.5 to 1, so it would cover the existing 14 MHz and 21 MHz bands as well as 10.1 MHz. Further details on this antenna are given in the RSGB Amateur Radio Handbook. For example, by increasing the elements spacing to about 8.5m a match (at 10.1 MHz only) can be obtained for 50 ohms.

Frequency (MHz)	10.10	10.125	10.150
Half-wave length	46' 4"	46' 2½"	46' 1"
	14.13m	14.09m	14.06m

TABLE. 1: Resonant lengths of wire dipoles for the 30 metre band. Lengths calculated

from $l = 468/f$ (MHz) for $l =$ length in feet.

from $l = 468/F$ (MHz) for $l =$ length in feet.

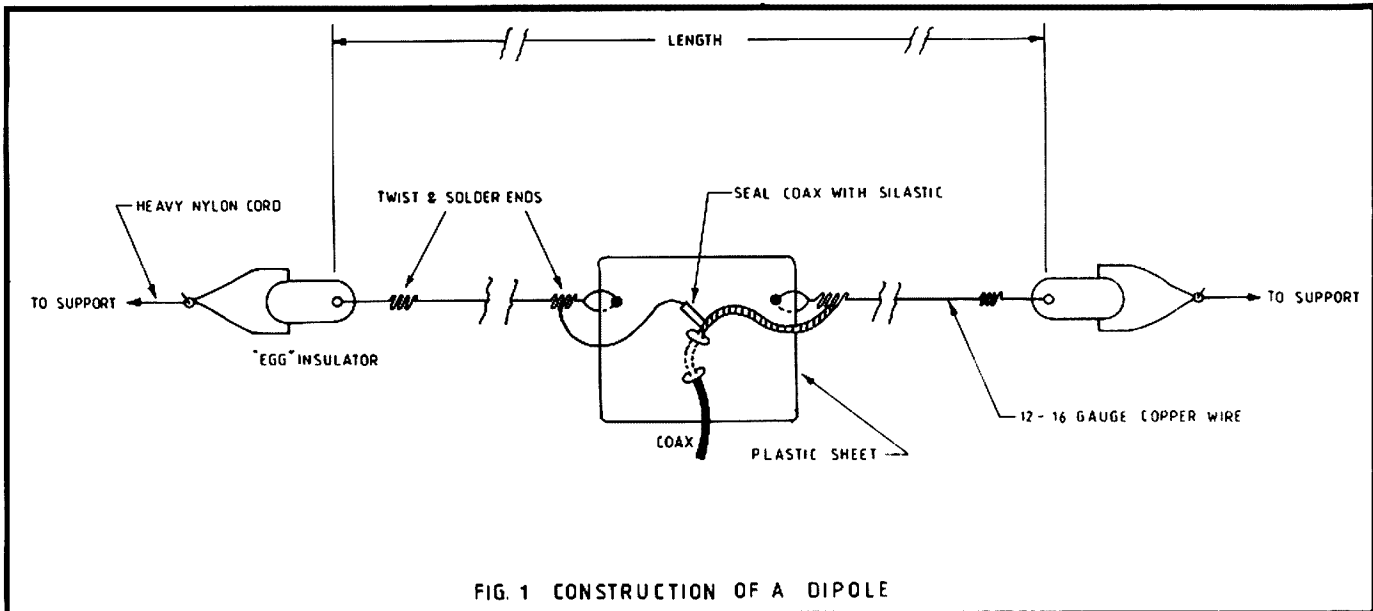


FIG. 1 CONSTRUCTION OF A DIPOLE

Beams for 10.1 MHz

Other multi-element antennas such as yagi and quad types are of course quite feasible on this band but most city dwelling amateurs will find the size too great — element lengths of over 14m or even quad sides of over 7m are daunting. The quad is perhaps acceptable in some QTHs. The W8JK can be built in tubing in a rotatable form to allow multi-band operation, although a modified triband yagi with loaded elements for 10.1 MHz could be more attractive.

There is another alternative — the G4ZU X-beam (see AR February 1976). I have used this with success on 20 metres and

while probably not quite as good as a full size beam it gave very competitive results. Fig. 3 gives suggested dimensions. The driver element may be fed via a 1 : 1 balun from 50 ohm coax and a 350 pF receiving type capacitor connected across the centre of the director and adjusted for best front-to-back ratio. The turning radius is less than that of most triband yagis. The elements are insulated from the casting by lengths of plastic garden hose.

What antenna shall I use? Probably a dipole with traps to allow operation on 10.1, 7 and 3.5 MHz and arranged in an inverted vee configuration. I do still have an X-beam casting so this may rise into the sky once again.

PROPAGATION

The propagation to USA and Japan is already well understood, thanks to WWV and JJY. Propagation at very good strengths is available from late afternoon (local time) on into the morning during sunspot minima. It is more erratic during the sunspot peak but, like 20 metres, will provide excellent signals into all parts of the world for considerable periods of time.

Single hop propagation will extend to 3,000 km for the E layer and 4,000 km for the F2 layer.

The band should provide good daylight signals around VK, ZL and perhaps as far as KH6 for the eastern States and as far

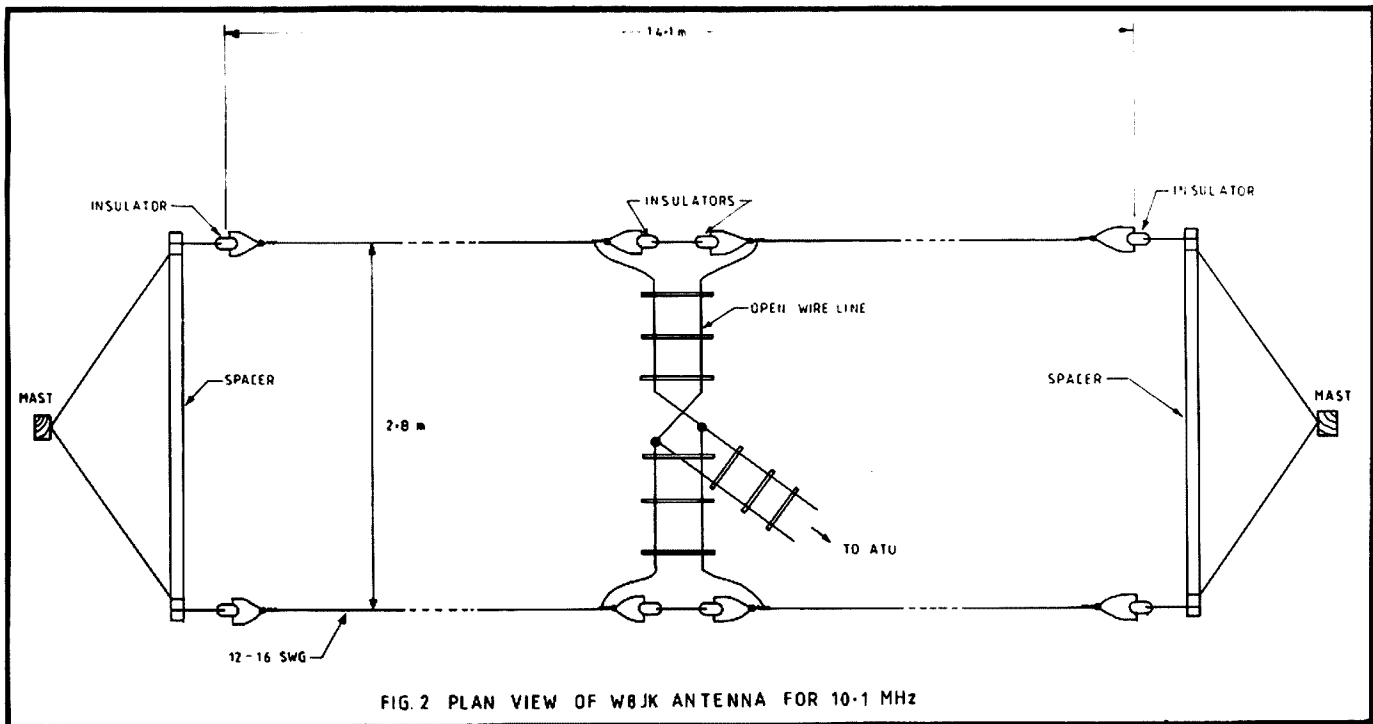


FIG. 2 PLAN VIEW OF W8JK ANTENNA FOR 10.1 MHz

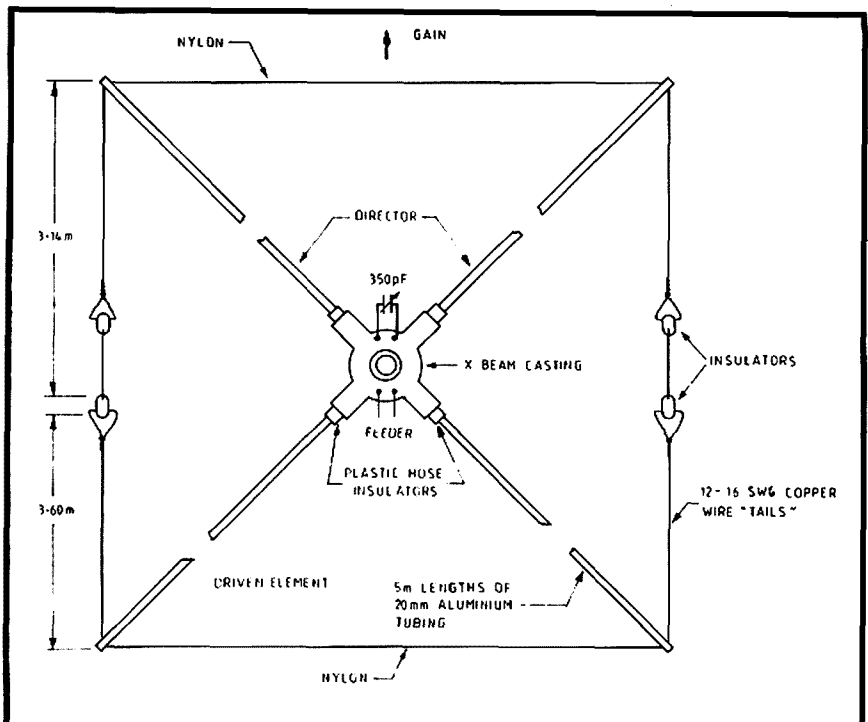


FIG. 3 PLAN VIEW OF G42U X BEAM FOR 10-1 MHz

NYLON GUYS TO THE CENTRAL MAST WILL BE REQUIRED TO STOP THE TUBING FROM SAGGING. WIRES FROM THE ELEMENTS PASS THROUGH GROMMETS IN THE CASTING

as 9V1 and DU to the north for amateurs in the southern capitals. Night time signals, particularly as the sunspot count declines, will probably provide more DX than any other band.

CONCLUSION

Yes, the 30 metre band is coming. It will be an exciting and useful addition to our bands. Will you be able to have a contact with me when the band is opened to us? ■

BOOK REVIEWS

"PROJECTS IN AMATEUR RADIO AND SHORT WAVE LISTENING"

By F. G. Rayer G3OGR. Newnes Constructor's Projects series, edited by Phillip Chapman.

Published by Butterworths. 90 pages, limp binding, Australian recommended price \$8.95. Our copy from the publishers.

Although small by comparison with many of the amateurs' sources of information, this book could be of interest and benefit to the keen short wave listener or budding Novice. It comprises detailed constructional information on various simple receivers and receiving accessories for the HF and 2 metre bands, plus a tunable VHF super-regenerative receiver. Construction is mostly on matrix boards of the foil-strip variety, thereby avoiding the problems, for a beginner, of artwork and etching.

The simplest project described is a general-coverage antenna tuner, while more elaborate items are a 2 metre converter with five transistors and a direct-conversion receiver for 80 metres, likewise using five transistors but a little more complex mechanically.

The first chapter deals with the frequency spectrum, summarises propagation characteristics of the amateur bands, and gives a brief introduction to amateur radio, while the second chapter describes various antennas practical for the SWL. Thus, overall, the book is surprisingly informative for its size and could be well worth the outlay, perhaps as a gift for a teenage friend or relative showing some interest in radio.

Also received from Butterworths for review were "Dictionary of Audio, Radio and Video" by R. S. Roberts, and "Dictionary of Telecommunications" by S. J. Aries. Both are most comprehensive. Other dictionaries, including "Dictionary of Electronics" and "Dictionary of Data Processing" are listed on the dust covers, the latter being a 1975 edition, whilst all the others are up to the minute 1981. Both of the hard-covered books for review are priced at \$42.00 each.

VK3ABP.

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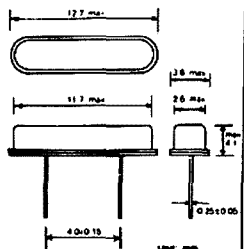
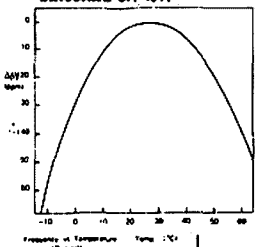
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| 4. Series Resistance | 31.0 kOhms max. |
| 5. Q Factor | 40,000 min. |
| 6. Parabolic Curvature Constant | Less than -0.04 ppm/°C
(Refer Fig. 1) |
| 7. Turnover Temperature | 28.0°C ±5°C |
| 8. Capacitance Ratio | 700 max. |
| 9. Storage Temperature Range | -30°C +80°C |
| 10. Operating Temperature Range | -10°C +80°C |
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The "Trinity/G5RV" Antenna

John Butler VK5NX

From South Australian WI Journal, October 1981

In response to a number of queries, and as a look, I present the Trinity/G5RV as one of the possible twists to the original Trinity Antenna. For those who do not have the original article as produced in AR, July 1975, with the author's permission, VK5XI, I repeat that article, and draw your attention to the Trinity Loop Antenna as published in the 1981 issue of AR.

THE TRINITY ANTENNA

The name is derived from the fact that the antenna is in effect three antennas in one. The antenna is directionally steerable by switching to any pair of the three radiators forming the array. The antenna system may be used multi-band.

BRIEF DESCRIPTION

The antenna is a horizontally polarised, centre fed, system using three horizontal (or near horizontal) radiators extending out from a central antenna feeder connection point, each radiator is 120 degrees from its two neighbours in a horizontal plane and all are of equal lengths. A switching system is used to select any two of the three radiators. As any two form a slightly bent antenna three different bi-directional patterns are thus available by switching. This switching may take place at the antenna feed point, at the operating position, or at any convenient position between these points.

The main advantage of the Trinity system is that it avoids dead spots in the radiation pattern that occurs with a single fixed horizontal antenna. The Trinity will, when all horizontal directions are taken into account, average about one "S" point better than a single fixed dipole. To equal the Trinity it would be necessary to erect at least three separate fixed antennas occupying extra space and using twice as much antenna hardware.

WORKING THEORY

Under any switch condition two of the three radiators will be combined to form a working antenna and although this is bent at 120 degrees in the centre, it will function quite well in transmission or reception, and thus is subject to equal and opposite fields from them and any RF pick-up from them will be minimal.

Where Trinity feeders are used to reach the switching point, for the reason of the equi-spacing of the wires, little or no unwanted coupling into the unused wire occurs.

It is possible that under some conditions it may be of benefit to ground the unused part of the system either directly or through an inductor or capacitor. However, tests so far indicate no real benefit is derived.

TRINITY FEEDERS

A cross section of a feeder will show a triangle like arrangement of the three wires which are equally spaced from each other.

Low Impedance Trinity feeder can be simply three insulated wires twisted together, household electrical wires rated at about 15 amps is usually suitable. Some types of heavy three wire flex may also be suitable, but before using such a tester test the RF losses at the highest frequency to be used.

Three lengths of coaxial cable running side by side can be used, the three inner conductors go to the antenna radiators and switching terminals and the braids are joined together at each end, and are earthed at the equipment end.

High impedance Trinity feeder can be made by using triangular insulated spreaders with an anchor hole at each corner, or very short pieces of about 50 mm plastic pipe with three anchor holes equally spaced around the circumference.

All the above remarks relate to reasonably low power transmissions. Keep the feeder at right angles to the antenna for as long as possible. In other words run it straight down to near ground level and any horizontal section that may be necessary should not run under one of the radiators.

SWITCHING

Various forms of switching can be used remembering that low impedance means low voltage with high current, and high impedance means high voltage with low current.

Usually it is preferable to do the switching at a low or medium impedance point to avoid high RF voltages across the switch gear. Quite small switches or relays can be used with low impedance circuits, but large high voltage switches or AC contractors may be needed for high impedance circuits.

When relays with long DC lines are used these lines should be broken into non-resonant lengths with RF chokes. A number of examples of switching are shown in the diagrams.

PRACTICAL CONSIDERATIONS

A Trinity antenna can be supported on a single central pole with three equally spaced short anchor posts at equal distances from it at the outer points. Any two radiators in use will form an inverted V type antenna.

Of course the three outer posts can be as high as the centre pole and in this case the three radiators will be horizontal, or if

the outer poles are strong enough the centre pole can be dispensed with and the Trinity feeder can hang from the three radiators suspended in mid span. If you do not have enough space for a completely horizontal design you can bend the outer ends of the radiators down.

Probably the simplest Trinity system is to use a trapped dipole design with a 7 MHz trap in each radiator, thus giving an all band system from 80 to 10 metres with low impedance feed on all bands.

DO NOT USE very long lengths of twisted low impedance Trinity feeder unless you know the losses are reasonable. Use shorter lengths and locate some relays at a convenient point near ground level and then run to the operating point with coaxial cable, connected to the balanced relay switching through a balun transformer.

Any of the above systems will need an ATU if used with modern equipment having no operator adjustable output tuning controls.

USING THE TRINITY ANTENNA

When completed and optimum tuning settings noted for each band you are now ready to do some directional switching and note the results. Do your first tests on reception and then compare reports for the same tests on transmission, usually the results will be very similar.

Be systematic about your testing, firstly name the three directional combinations 1, 2 and 3, and mark the switches so it is obvious what you are using and make a written record of which positions are best on a given band for each call area you normally work.

As you switch directions you may at first be disappointed as you will not get the same spectacular results as rotating a beam, sometimes it will make no difference which position you use, however, on many occasions you will notice a variation of about two "S" points between the best and the worst positions. When this happens you rejoice that you are not limited to a single fixed antenna in the position giving the weakest signal. In addition to signal gain sometimes interference can be reduced by switching to a position unfavourable to its reception. ☺☺

That is Bruce's (VK5XI) Trinity antenna that gave me the idea for the Trinity/G5RV.

In my case I use a wooden pole approximately 40 ft. tall to support the centre of the array, this allows me to take full advantage of the feeder system without compromise, by using a lesser arrangement, in short, I use a 34 ft. open 3 wire triangularly even spaced, 300 ohm feeder, with about 4 ft. of 3 cores of 23/.0076 figure 8 flex as the extension into the Antenna Tuning and Selector Switch Unit. The three cores may be held together in a number of ways, e.g. short pieces of PVC sleeving spaced evenly along its length; tied with a lacing twine or cord; wrapped at even intervals with electrical tape bands; to mention a few.

The antenna's radiators are made from three 53 ft. 6 in. (16 metre) lengths of 3/.036 PVC insulated electrical wiring cable as would be used in conduit wiring. The radiator's actual length is 51 ft., the extra 18 in. is to allow for tying off to the insulator at each end and connecting the tuned 3 wire feeder system, making an overall effective antenna length for one half of 85 ft. (for reference see the RSGB Amateur Radio Handbook).

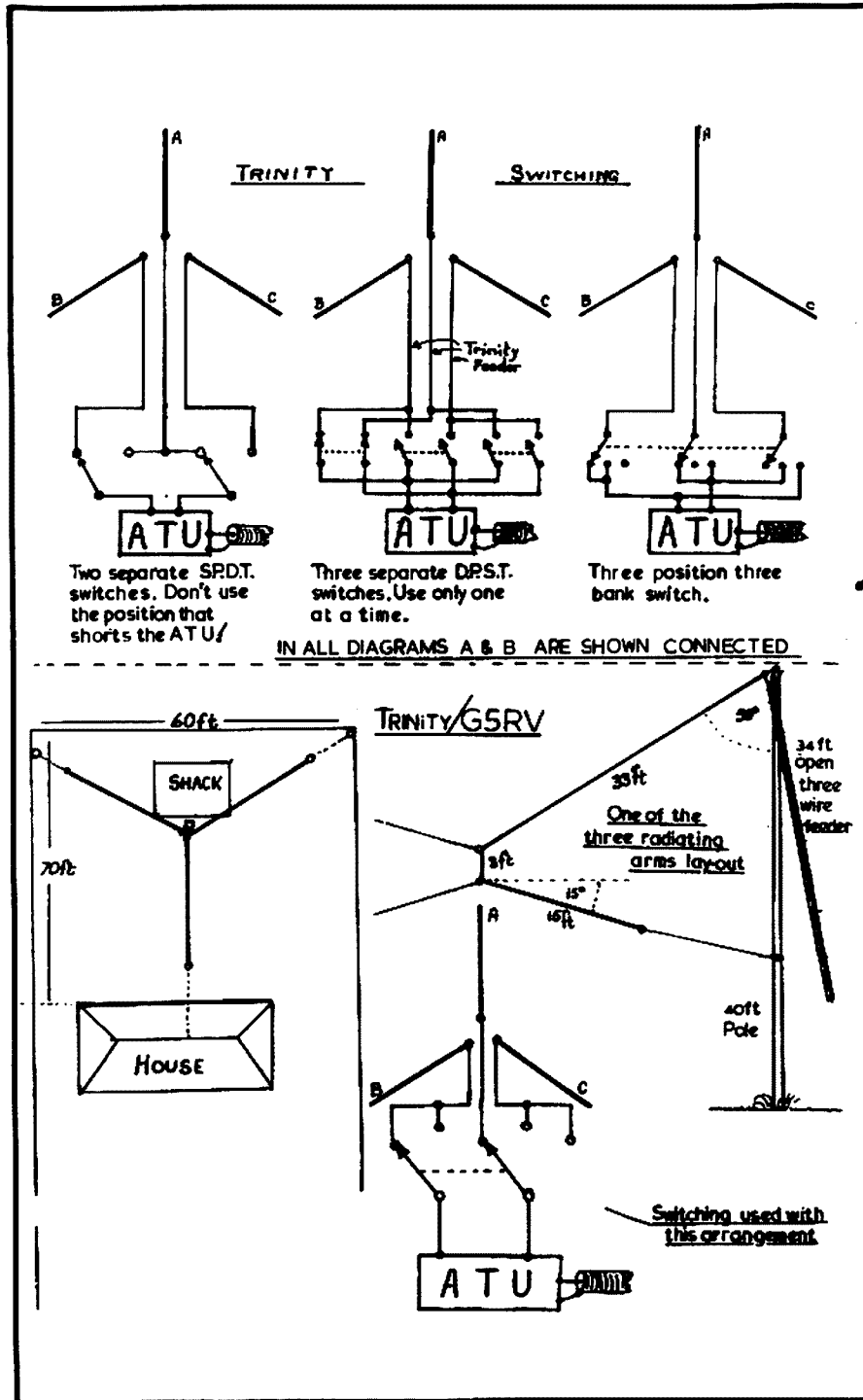
The antenna elements are deliberately bent around to allow the array to be constructed in a limited area, such as a metropolitan domestic block, for details refer to the accompanying sketch.

It will be noted from the sketch that a very simple switch has been constructed to facilitate easy array switching, this was done to overcome the problems associated with using separate changeover toggle switches; no doubt other methods could be devised.

CONCLUSION

This array exhibits all of the original article's benefits and some of its apparent disadvantages, but overall it has UP TO 2 "S" points gain over a single fixed dipole, depending on frequency and vertical angle of the signal's arrival, the higher the angle the less the apparent improvement, but the Trinity System under these conditions allows some reduction of local QRN and QRM by selective nulling, this in turn gives an apparent improvement in signal to noise.

As mentioned by the author of the Trinity antenna this array will fill in many gaps left by a single fixed dipole, but will not be able to perform better than a rotary beam; but it can operate on more bands than a beam!



ZZV ties the Knot

Much travelled and well known NSW amateur Grahame O'Brien and his wife Judy were married at Kurrl Kurri on 9th May, 1981. Grahame is pictured with friends and guests, including 14 licensed amateurs! (Left to right.) Rear: Paul Huntington VK2AQQ, Dave Bartlett VK2BIF, Ray Dixon VK2ZKX, Bob Butler VK2ZRN/VMC, Ian Ryfe VK2ZIF, Noel Bailey VK2BNP, Greg McMahon VK2AAG. Front: Phile Waite VK2DKN, Phil Smith VK2CBX,



Grahame O'Brien VK2ZZV, Greg Leeman-Wah VK4AML, Greg Evans VK2ZEZ, Widge Lowe VK2ZWL, Barry Wilson VK2BBA.

Grahame is well known for his activities on both 2 and 6 metres. He was almost a permanent fixture on Channel 8, Sydney, until he moved to Newcastle and was responsible for the 6 metre beacon on Vanuata (formerly New Hebrides), where he and Judy spent their honeymoon. VK2BBA.

VK2 BULLETIN

FIFTH CONFERENCE OF CLUBS

The 5th Conference of Clubs was scheduled to be held on Sunday, 1st November last, at Wollongong. Only nine of the 32 clubs affiliated with the NSW Division were represented, being Goulburn, Hornsby, Illawarra, Orange, Liverpool, Mid South Coast, South West, Southern Highlands and Wagga. Four Divisional Councillors, Sue Brown VK2BSB, Steve Pall VK2VHP, Dave Thompson VK2BDT and Athol Tilley VK2BAD attended as spectators.

As a quorum did not exist, the 5th Conference of Clubs could not proceed and an informal meeting discussed the circulated agenda. The Dick Smith 1981 Educator of the Year Award for that person making an outstanding contribution to amateur radio education was awarded to Kim Stevens VK2ASY of Orange ARC. Goulburn ARS was awarded an SC9 UHF transceiver in recognition of the increase in WIA membership amongst members of that club — 93 per cent are WIA members. (See Front Cover.)



(Left to right): David VK2BDT, Frank VK2VGX, Roger VK2ZTB, Steve VK2VHP, Athol VK2BAD, Jeff VK2KKBK.

must go to the members of the Dural committee who have spent many hours designing, building and installing the system, in particular Doug VK2ZYM (now moved to VK5) and Jeff VK2BYY.

Thanks to those members who have volunteered to assist the broadcast as announcers or engineers each Sunday. More volunteers are always welcome, and visitors are welcome at Dural on any Sunday at either 11 a.m. or 7.30 p.m. We will be celebrating the 25th anniversary of the opening of Dural VK2WI this year, in either May or June, and this will coincide with the annual fireworks display.

QSL BUREAU

The Bureau, located at Westlakes Amateur Radio Club, York Street, Teralba, now conducts half-yearly cleanouts in May and November to both members and overseas bureaux. In order to speed up turnover of cards at the Bureau, all users are now issued with return, self-addressed envelopes of a standard size in strong kraft paper. QSL Officer Doug VK2AV has made more sorting shelves which allow several sorters to work at one time, so if you're in the area any Saturday, why not call in and assist for a few hours. Visitors are always welcome at the club and, if handsome, might even be offered a cup of tea and a biscuit HI. The club's phone number is (049) 58 1588.

ORANA CLUB

Club meetings are now held on the last Wednesday of each month. Last November the club was successful in obtaining a local Novice exam for about 20 candidates in Dubbo. Many club members participated in JOTA and had many good contacts — calls participating were VK2s, BEO, VJV, VJC, DGX, DNN, KCE, EDN and VEH. A display was set up in Wellington in October by VK2s, ZMT, BEO and BJA, so

there are probably many prospective amateurs in the area as a result of the efforts of the club. (Submitted by Jim VK2AJO.)

DISPOSALS

The Division has for sale to NSW members ONLY for their private use packs of the following components. Each pack costs \$1, or 11 packs for \$10. Postage for packs 1 to 10, add \$1; for more than 10 packs, add \$2. Please send your order, specifying first, second and third preferences, to Disposals Officer, PO Box 123, St. Leonards 2065, with cheque made out to WIA Disposals.

Pack A: 5 x 40 pin Molex IC sockets; pack B: 5 x 24 pin Molex IC sockets; pack C: 5 x beehive trimmers, 5 to 25 pF; pack D: 25 x .0047 uF Sprague resin dipped caps; pack E: 100 x .047 uF 50 V disc ceramic caps; pack F: 50 x .1 uF 16V disc ceramic caps; pack G: 25 x 1 pF disc ceramic caps; pack H: 25 x 4.7 pF disc ceramic caps; pack J: 25 x RFC 1.5 uH; pack K: 10 x TO3 transistor sockets (suit 2N3055); pack L: 10 x 4.7 uF 200V non-polarised caps; pack M: 10 x octal valve sockets; pack N: 5 x 5k 1W Colvern wirewound pots, 1/4 in. shaft; pack P: 5 x 5k 2W Colvern wirewound pots, 1/4 in. shaft; pack Q: 15 x useful assortment of electrolytic caps (e.g. 1000 uF 16V, 1000 uF 25V, 2000 uF 10V, 100 uF 63V, 33 uF 50V, etc.). The Division still has a few 10m crystal pairs for 28.345 MHz (receive crystal 27.89 MHz) at \$1.40 per pair posted. Add \$1 for each additional pair of crystals ordered.

TOWER FUND

Many thanks for recent donations from Coffs Harbour and District Radio Club \$28, Bill Parker VK2VDI/ZG \$10 and A. Gray VK2IJ \$20. Thanks also to Handicapped Aid Programme for a donation of \$50 for IYD.



Kim Stevens VK2ASY, winner of 1981 Dick Smith Educator of the Year Award.

The Sixth Conference of Clubs will be held in Sydney on Sunday, 23rd May next. The host club will be Liverpool ADARC. Thanks to those clubs who made the effort to attend the 5th Conference, despite the fuel problems. Special thanks to Illawarra ARS for arranging an excellent venue and for the conduct of the meeting. (Submitted by Athol VK2BAD, Affiliated Club Liaison.)

BROADCASTS

The second and final stage of the new Dural studio facilities consists of a micro-processor controlled engineering console which is located in a separate booth adjoining the announcer's booth. This has streamlined broadcast operation and thanks

Details of four clubs affiliated with the NSW Division:—

ILLAWARRA AMATEUR RADIO SOCIETY
PO Box 1838, Wollongong 2500.

Nets: Sundays, 8.30 a.m. on 52.525 MHz and 8 p.m. on 3.565 MHz; Tuesdays, 8 p.m. on 28.46 MHz.

Meetings: 2nd Mondays, 7.30 p.m., at Congregational Hall, Coombe and Market Streets, Wollongong.

Classes: AOCIP and NAOCP at Wollongong Technical College, Fridays, 6-9 p.m.

President: K. Curle VK2OB; Vice-President: R. Dorin VK2VOF; Secretary: D. Meyers VK2PBP; Other Committee: G. Cuthbert VK2ZHU, M. Keech VK2VXS, E. Fien VK2YVF, J. Taylor VK2JT, D. McKay VK2DRM.

Magazine: The Propagator, edited by B. Wade VK2AXI monthly.

Repeaters: VHF VK2RAW 6850, UHF VK2RUW 8225. Relays of Divisional broadcasts.

WESTLAKE AMATEUR RADIO CLUB

PO Box 1, Teralba 2284.

Nets: Thursdays at 8.30 p.m. on 28.475 and 3.565 MHz using VK2ATZ. Relays of Divisional broadcasts followed by club news at 11.45 a.m., and 7.45 p.m. Sundays on 1812.5 MHz and rep. ch. 7100.

Meetings: Club rooms, York Street, Teralba, Wednesdays and Saturdays.

Classes: AOCIP and NAOCP at club rooms, Wednesdays and Tuesdays, 6.30 p.m.

President: K. Howard VK2AKX; Secretary: E. Brockbank VK2KEB; Other Committee: M. Hall VK2DCW, J. McLachlan, G. Taylor, D. Pearson VK2 AVO.

Magazine: Monthly Newsletter, edited by E. Brockbank VK2KEB. Every month except January.

Repeater: VHF VK2RTZ 7100 at Bar Fire Tower, Watagan Range, time out 2m 30s, ERP 6W.

Publications: QSO JA Now, Ham Exam Cram Book, Questions and Answers for the Novice Licence.

Operate the VK2 QSL Bureau on behalf of the NSW Division, QSL Officer: D. Pearson VK2AVO.

HORNSBY AND DISTRICT AMATEUR RADIO CLUB

PO Box 362, Hornsby 2077.

Meetings: Hawkins Hall, Sefton and Lockerbie Streets, Normanhurst, first Wednesday, 8 p.m.

President: David VK2NOB/YLX; Vice-President: Gerry VK2BMZ; Secretary: David VK2YME; Other Committee: Nick VK2VOS, Chris VK2YMW, John VK2DQK.

Repeaters: VHF VK2RCW (beacon sending various speed Morse), Normanhurst 7400. VHF testing VK2RNS 7250.

PARKES AND DISTRICT AMATEUR RADIO CLUB

247 Clarinda Street, Parkes 2870.

Meetings: Red Cross Rooms, Church Street, Parkes, on second Tuesday.

Classes: NAOCP weekly.

President: D. Cooper VK2DHR; Vice-President: R. Swindley VK2DDQ; Secretary: T. Darcy VK2DDD; Other Committee: B. Cooper VK2DHO, P. King VK2VJQ, J. Meagher VK2AMV, P. Scarlata VK2DQA.

COMING EVENTS

21st February (Sunday): Gosford Field Day, Showground Road, Gosford. Disposal lot numbers from Bill Smith VK2TS at RMB 4525, Gosford, or phone (043) 74 1207 AH.

25th February (Thursday), 10 a.m.: Close of agenda for Divisional AGM and of nominations for Council 1982/83.

27th March (Saturday), 10 a.m.: Annual General Meeting of NSW Division.

Members and clubs are invited to submit news for inclusion in this column. News for April AR must reach Box 123, St. Leonards 2065, by 27th February.
Susan Brown VK2BSB. ■

VK4 WIA NOTES

ANNUAL GENERAL MEETING

The Divisional Annual General Meeting will be held in conjunction with the February General Meeting on 19/2/82 at the Playground and Recreation Association Hall, corner of Love and Water Streets, Fortitude Valley. The order of business will include the presentation of the annual report and the election of the 1982 Council. This is the time of the year for reviewing progress

and re-establishing priorities. What do you think? Has your Council achieved the things you wanted it to during the past year? Perhaps not. You can help achieve this year's aims by getting involved directly with your Council or at the very least by supporting its activities. It is better to take this constructive approach than to sit back and complain. There are plenty of tasks associated with WIAQ activities and "many hands make light work".

JANUARY GENERAL MEETING

The first meeting of the year will be held on 15/1/82 at the address given above. Doors open 1930K. Members and visitors are welcome.

RADIO CLUB WORKSHOP

The 1982 Workshop is being planned for mid-April and again all affiliated radio clubs are invited to send representatives to this important event. A number of club motions have been received and circulated for discussion already. As Federal Convention motions come to hand, they will also be circulated to affiliated clubs for discussion amongst members prior to the Workshop. This is your opportunity to be involved in the decision making processes of the WIA — make the most of the opportunity when the matters are raised at your club meetings. Non-club members should listen to the News Service which will also present Federal motions as they become available. The Workshop committee is currently involved in finalising venue, catering and other planning arrangements.

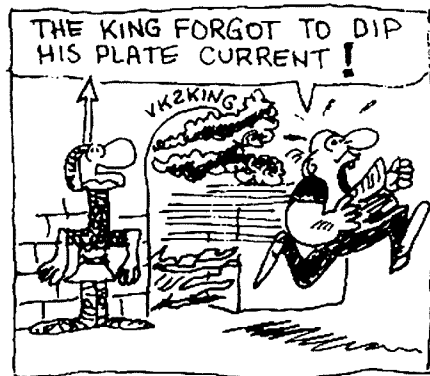
HISTORICAL

Council is currently investigating the feasibility of producing a "History of Amateur Radio in Queensland" and needs input from "old-timers" and others regarding information on our heritage in Queensland. Readers of QTC will have noted with interest the regular column from Peter VK4PJ on this topic. Do you have any data, equipment, anecdotes, etc., that can help in this task? If you have, let us know. Tomorrow may be too late.

FIELD DAY

When was the last time you tried out your portable WICEN equipment? Is it still portable? Get it back into tip-top condition for the National Field Day in February — don't forget your wet weather gear as all Queenslanders know what happens EVERY National Field Day.

VK4DT. ■



From "The Propagator", Sept. 1981

WA BULLETIN

Hi there! A very happy and prosperous New Year to you, may 1982 bring you all that you would wish yourself.

The saddest tale to come out of the usual run of hard luck Christmas yarns concerns the local amateur who, in the months preceding the festive season, had been giving hints to all members of his family that he would really like the bewhiskered old gentleman in the red trappings to leave him a new "black box". Well, to make a long story even longer, when he awoke on Christmas morn and checked his presents there was a black box — but not quite what he had been hoping for — the black box contained a "Rubiks Cube". Some families just can't take the hint, can they?

By the time you read this the life of the current Council will nearly have run its course — only a couple of months to go. Nevertheless, by popular request, herewith a list of those people who actually work for the Division and are prepared to put their collective necks on the chopping block. All are QTHR.

President: Mr. B. Hedland-Thomas VK6OO.
Vice-President: Mr. R. Greenaway VK6DA.
Secretary: Mr. F. Parsonage VK6PF.
Membership: Mr. D. Wallace VK6IW.
Federal Council: Mr. N. Penfold VK6NE.
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Repeater Gp.: Mrs. G. Weaver VK6YL.

Congratulations to those hardy perennials, the VK5 Division, on yet another win in the RD Contest. Perhaps this year VK6?

The recently initiated drive for new members appears to have so far been successful, with 25 new members as a direct result. It also stirred a number of old members into rejoining. Let's hope the new members keep on rolling in.

At the time of committing this to paper the group of Cocos-Keeling are pointing their radio ears in the direction of Perth. They are monitoring Channel 4 on 2 metres. Let's hope they get a lucky break. Perhaps there will have been an opening by the time this reaches you.

What about sending off an Intruder Watch report each month? (That would be a great New Year's resolution.) Dave VK6WT tells me that regular reporters are few in number. I'm convinced that the cursed "Woodpecker" has been breeding; its offspring seem to be increasing in number and offensiveness.

It's almost time to be filling in Nomination for Council forms again, so cast an eye around for any likely starter and start to twist an arm.

One of my spies was trying to send me a smoke signal, but there was a lot of QSB — it was a very windy day — and I was not copying too well. Something about the possibility of a new record being claimed for a contact on 2 metres FM from Darwin to Japan. Perhaps more of this later, but for now best 73.

Ross VK6DA. ■

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VHF-UHF AN EXPANDING WORLD

Eric Jamieson, VK5LP
Forrester, S.A. 5233

VHF/UHF BEACONS

Freq.	Call Sign	Location
For 28 MHz beacons refer October 1981.		
50.005	H44HIR	Honiara
50.008	JA2IGY	Mie
50.020	GB3SIX	Anglesey
50.023	HH2PR	Haiti
50.025	6Y5RC	Jamaica
50.035	ZB2VHF	Gibraltar
50.036	HC1JX	Quito
50.038	FY7THF	French Guiana
50.040	WA6MHZ	San Diego
50.048	VE6ARC	Alberta
50.050	ZS3E	South Africa
50.060	PY2AA	Sao Paulo
50.070	VP9WB	Bermuda
50.070	YVZZ	Caracas
50.080	TI2NA	Costa Rica
50.088	VE1SIX	New Brunswick
50.100	KH6EQI	Pearl Harbour
50.498	5B4CY	Cyprus
51.022	ZL1UHF	Auckland
52.013	P29SIX	New Guinea
52.150	VK5KK	Artherton
52.200	VK8VF	Darwin
52.250	ZL2VHM	Palmerston North
52.300	VK6RTV	Perth
52.320	VK6RTT	Carnarvon
52.330	VK3RGG	Geelong
52.350	VK6RTU	Kaigoorlie
52.370	VK7RST	Hobart
52.400	VK7RNT	Launceston
52.420	VK2WI	Sydney
52.425	VK2RGB	Gunnedah *
52.435	VK3RMV	Hamilton
52.440	VK4RTL	Townsville
52.510	ZL2MHF	Mt. Climie
144.400	VK4RTT	Mt. Mowbrallan
144.420	VK2WI	Sydney
144.475	VK1RTA	Canberra
144.550	VK5RSE	Mt. Gambier
144.600	VK6RTT	Carnarvon
144.700	VK3RTG	Vermont
144.800	VK5VF	Mt. Lofty
144.900	VK7RTX	Ulverstone
145.000	VK6RTV	Perth
147.400	VK2RCW	Sydney
432.410	VK6RTTY	Carnarvon †
432.440	VK4RBB	Brisbane
432.450	VK3RMB	Mt. Bunningyong

* Denotes change of call sign.

† Denotes a new beacon.

Confirmation of the operation of the Gunnedah beacon comes from Jock VK2QX, who corrects the call sign to VK2RGB and advises the beacon is presently running with about 6 watts output to a vertical antenna with ident every 30 seconds in A1 mode. There are plans to change the antenna to either crossed dipoles or halo type for horizontal polarization. Location: on a hill just south of Gunnedah about 600 feet a.s.l. with a good 360° outlook.

Barry VK2KAY (ex ZAY), John VK2SI, Rob VK2YZP have all been involved in the project, while Reg VK2ZCK donated some parts and the case. Reception reports would be appreciated, please, to Jock Watson VK2QX, PO Box 639, Gunnedah, NSW 2380.

NEW 70 cm BEACON

I note from the pages of the West Australian VHF Group Bulletin a brief reference to the inauguration of a new beacon at Carnarvon on 432.410 MHz and that it was putting strong signals into Perth. That's not bad considering the distance is close to 1000 km! No details were given of call sign but I guess it will carry the usual VK6RTT call sign. Would be pleased to hear from someone in Carnarvon with full details please.

Whilst still in the West, I note the Albany beacons are not presently operational due to the Defence Forces having taken over the existing site. Frenchmen's Bay (that would be a good site . . . 5LP) and Mt. Barker have been suggested as alternative sites, according to information in the VK6 Bulletin.

As a matter of general interest, the Albany 2 metre beacon has for years been the most consistent beacon to be heard in the Adelaide area, despite its long distance, and one of the most difficult beacons to hear in Adelaide within acceptable range is VK2RTG on 144.700.

Finally, I still make further pleas for the custodians of those beacons which have not replied to my requests for information about their beacons to try and get the information to me as soon as possible, it is now over 12 months since I first asked for this information.

6 AND 2 METRE STANDINGS

First response to information for a possible "Standings Box" has come from Andy VK2DUX covering his operations from Carnarvon as VK6OX. Over the next few months I hope enough of you will be sufficiently interested to send in the details required. e.g. Your call sign, call sign of station worked, country, date worked, confirmed by QSL or not. Let's try it for six metres first, as a different set of requirements would exist for 2 metres. So who is the top Australian operator with the most countries worked on 6 metres 52 to 54 MHz or split frequency to include 50 to 52 MHz (please say so if split operation)? No cross-band to 28 MHz or other bands at the moment.

SIGNALS FROM OODNAOTTA

Clarry VK8KL has written to confirm last month's mention of operation from Oodnadatta in the far north of South Australia by Graham VK5GW, who will be there for 12 months. Graham apparently opened the account on 28/10 by working one JA at 0712Z, then followed this on 29/10 by working a further 33 JAs from 0929Z on 52.050 MHz. That's a good start and with the approaching Es period contacts should be made far and wide. We will be looking forward with interest to any possible 2 metre contacts before long.

432 MHz ACTIVITY

The 70 cm band seems to be taking on a new life at the moment in VK5. A number of new stations have come on recently and include Garry VK5AS at Cowell, Don VK5ZRG at Whyalla, David VK5KK at Artherton, Mark VK5AVQ Adelaide, Bob VK5ZRO and Steve VK5AIM at Elizabeth, David VK5CK at Crafers (receive only at the moment), and there are probably others now joining the ranks. The VK5LP establishment find the path to Garry VK5AS via the 60 dB attenuator (hill) really knocks signals about and on a recent test when 70 cm signals were 9+ on the Adelaide plans from Cowell, they were barely audible at my QTH. However, looking south to David VK5CK I was able to reduce my 70 cm signal down to milliwatts and still be received, so all is not lost! Bob VK5ZRO has a prime location for working north and west and is having considerable success on 70 cm to Cowell and Whyalla, plus is also able to work me via the 60 dB attenuator! Distance to me . . . 20 km!

While we are looking out into the sticks mention should be made of Irwin VK5KES, who is at Port Lincoln and looking for 2 metre contacts.

HARGRAVES WRITING

An interesting letter comes to hand from Neville VK2QF of Hargraves, a long way north-west of Sydney, and includes a very fine list of 52 MHz countries worked, which will certainly be listed if we can get the "Standings Box" going. But he agrees with me we would like to hear from such operators as VK8GB, VK4RO, VK5RO, VK5KK, VK3AMK, just to mention a few; there are many others in the very successful class. I already have a long list of countries from VK3OT, so what about it, chaps, he is going to be hard to beat!

Neville writes: "On the topic of QSLs, VK stations are the worst "QSLers" from anywhere. I have 180 cards out to "QSL Guaranteed" QSOs and only 49 in the shack after three years, pretty poor for people trying to get the VHFCC! No luck so far with H44DX despite three letters and nine IRCs, but generally the overseas stations are pretty good for returns.

"Six metres here this equinox has been slow after Es to VK3, 5 and 7 on 2/6/81, after which I shifted out of my bedroom shack to a garden shed 100 metres up the hill behind the house. (Five trips to shack = 1 km. Self-inflicted says the XYL!) Extended my tower 6 metres higher now to 17 metres high, so see out of the gutter a little better now!

"10/9: JA7. 20/9: JA8. 3/10: JA1, 7, 8, 9, 0 for 26 QSOs. 10/10: Heard WATNV/KL7 at 529 RST on 50.110, later heard working VK3s, JA1, 2, 7, 8 for 18 QSOs. 15/10: JA8. 19/10: JA7, 8. 23/10: JA1, 2, 3, 8 for 12 QSOs. 27/10: JA1.

"So that's the activity here so far, but I am hearing on 10 metres that VK4 and northern VK2 are making regular contacts to W6, etc., so it may be better in November for the southerners! I hope to give the Ross Hull Contest a thrashing again this year, maybe boosted again by several

hundred JAs. Possibly a lot of 6 metre operators may not have bothered if not for IC502s and good JA conditions to give encouragement.

"Here are some more QSL addresses which should be of help to those trying to get their cards in." Thanks for writing, Nev.

QSL INFORMATION FOR 6 METRES

AH8A: Via WB6FBN, John Dolman, 5521 Sagitorius Way, Citrus Heights, California 95610. (This as per call book, but no return so far.)

AH2K: J. E. McDermott, 19 Cherry Blossom Lane, Latte Heights Estates, Guam, Mariana Is. 96913. (Cards for KG6DX and KG6JDX as well as AH2K can generally be sent together as all use same work QTH to swap cards, etc.)

WA6BYA: R. C. Sohl, 1101 Martin Road, Santa Cruz, California 95060.

K6FV: V. R. Frank, 12450 Skyline Boulevard, Woodside, California 94062.

WA4TNV/KL: C. Lane, Box 444, APO, Seattle, USA 98736.

XE1GE: J. W. Lord, PO Box 875, Cuernavaca, MOR, Mexico.

H44DX: W. Elton, PO 332, Honiara, Guadalcanal, Solomon Islands.

FO8DR: Rene Delamere, Route Dela Point Venus, Mahina, Tahiti.

FK8AB: J. Duplat, PO Box 779, Noumea, New Caledonia.

FK8CR: Ed Syzmanski, PO Box 544, Noumea, New Caledonia.

FK8BG: Via W7OK (now silent key), QTH as per AR is PO Box 95, Las Vegas, NV 89101.

VS5DX: Via JAIUT, Y Hayashi, 4-20-2 Niche Gotanda, Shinagawa, Tokyo, Japan.

SOMETHING FROM EUROPE

My thanks to **Sieve VK5AIM** who keeps me posted with some of the happenings from the UK and other areas as presented in "The Short Wave Magazine". Here are a few items which may be of interest, and includes just a few happenings related to that peculiar European band of operation, 4 metres or 70 MHz.

"Syd Harden G2AXI has been concentrating on 4 metres and has so far got 55 countries and 8 countries this year. The new ZB2VHF 4m beacon on 70.120 MHz has been copied at S9.

"Ken G5KW is a keen 10/6m crossband operator and has 22 countries and 42 US States worked so far! His 6m station consists of an IC-551 transceiver and Cushcraft 617-6B aerial on a 34 ft. boom, with a Yaesu FT620B as a back-up.

"John GW3MHW reports frequent reception of ZB2VHF on 50.035 MHz, presently using A1 keying to keep the temperature down. John has been running his 4m and 6m receivers simultaneously on the ZB2VHF beacons and finds the fading patterns different. He mentions the advantages of having both vertical and horizontal polarization available to combat fading on 6m DX signals.

"The Auroral event of July 25th proved to be the largest and most intense one recorded since 1957. Massive M9 flares and 4B optical ones were recorded and there were sudden ionospheric disturbances galore. At the start of the event, the

Meudon A index reached the incredible level of 125. Stations working continental Europe from UK reported the Doppler shift was about 2½ kHz high frequency and the SSB signals spread over 4-5 kHz, wider than the passband of normal transceivers, thus making copy that much more difficult."

A look at the "Standing Box" in the Short Wave Magazine is very interesting. On 2 metres G3BW and G4DEZ have each worked 27 countries, G8VR has 26, G3FPK has 22, and there are many listed from 14 to 20 countries. Goes to show what can be done if you are keen enough in closely settled areas like Europe.

On 432 MHz G8TFI has worked 14 countries, G8HHI has 12, and a number of others around 8, 9 or 10. On 1296 MHz G8GXE heads the list with 5 countries, followed by G3BW with 4. So it looks as though our European brothers have their share of fun, too; in addition they can chase Locator Squares, something which hasn't seemed to interest anyone out here to start.

NEWS FROM SMIRK

The latest newsletter from SMIRK, the Six Metre International Radio Klub, indicates membership of SMIRK now stands at 4315 from all US States and 69 other countries. Recent changes indicate initial membership fees are now \$US6, and there will be an annual subscription of \$US3 all from January 1982. Those present and future new members who pay the \$3 annual dues will receive all SMIRK programmes, and be eligible for awards, contests, etc. They will also receive the newsletter/membership lists on a quarterly basis. Members who do not renew membership in January 1982 will still be members of SMIRK, may continue to pass out their SMIRK number, may participate in the DXDC programme, but will not be eligible for any other awards. They may work the SMIRK contests but will not be eligible to win same as an unpaid member.

They certainly get it good in New Zealand, as a SMIRK report from ZL2KT reports last November to March 1981 was super! He QSO'd W5, W6, W7, W8 for 170 QSOs. Needs W1 and W2 for all Call Districts in US. He also got VE1 XE1, KP4, VP1, HI8, ZF2, FO8, KL7, FK8 and VK9, all new countries. ZLs can operate on 50 MHz from 1200 to 2235Z weekdays and Sundays; 1200 to 2200Z Fridays only; 1200 to 2300Z Saturday or until 2359Z, depending upon when Channel 1 or 2 TV starts.

Yoshi JA1UT reported the Maldives 8Q7 DX trip a success — had 141 QSOs in 6 countries (YB1CS, YC1BMI, VS6EZ, VS5DX, VS5TX, P29BFS, 8Q7, and JAs). Their CR9JA trip netted 883 QSOs and got VS5, VS6BE, VS6EZ, VK8GB, H44PT, CR9 and many JAs.

Re JA4MBM: On 22/3/81 Hideaki worked VP2VGR, W2HOY/KP4, WD4IYS, BW4QSN, FM7AD to give him 59 countries worked on 6 metres! What a great score. Congratulations, Hide.

Repeat info: Effective 1/2/81 to 31/1/82, PAO are authorised to use 53.875, 53.925 and 53.975, CW only, 25W ERP. As SMIRK

says: "It's better than nothing, I understand there are quite a few interested and on now."

GENERAL NEWS

As you have probably already gathered, there isn't much to report. The fact that practically no one has written indicates the very poor shape of the bands down this way anyway. Openings from time to time to Japan have been the normal thing, interspersed with occasional Es openings between various VK States. The almost complete drop off of anything startling from the overseas DX viewpoint has come as a surprise to us down here at any rate. Perhaps March/April next year might see a return to something better with which to finish off Cycle 21. The deadline for copy for this issue being 13/11 also hasn't allowed the collection of some news.

You are reminded of two activities taking place soon. Firstly the Geelong Amateur Radio Club sponsored VHF Field Weekend starting on Saturday, 12th December, and finishing on Sunday, 13th December, and being for any 24 hour period during those two days. Rules were published in the November issue of AR. I propose operating portable during that Field Day and I hope a fair sample of other operators will make the effort. I should be operational on 52, 144 and 432 MHz SSB and on FM.

The other item is the Ross Hull Memorial Contest, which starts the weekend before on Saturday, 5th December, and which generally generates a fair amount of operating interest but very little interest when it comes to sending in a log. Please try and do both!

We were all sorry to hear of the accident sustained by **Ray Naughton VK3ATN**, who had the misfortune to be on his 110 foot tower when it collapsed recently during a gale. At the time of writing Ray is in the Wimmera Base Hospital at Horsham with some broken bones and ribs, and without the feared back injuries at first thought, but he will be out of action for some time, and on behalf of all amateurs wish him a speedy recovery.

It appears Ray went up to the 45 foot position on his tower to secure something and was just coming down when a gust estimated up to 100 m.p.h. hit the tower and caused it to collapse with Ray on it, so perhaps he is a lucky man to be alive. Best wishes, Ray, from us all.

It's that time of the year when Es shows its annual improvement, so hopefully operators will be able to catch up with the rest of the VHF gang at some time or other. And don't forget that around the end of January is often a good time for 2 metre tropospheric contacts, particularly along the southern part of the Continent, but in other areas too. And with the upsurge in 432 MHz activity contacts on that band should also be possible, mostly when good conditions exist on 2 metres.

Best wishes to everyone for a happy and prosperous New Year, and closing with the thought for the month: "When it comes to giving, some people stop at nothing."

73. The Voice in the Hills. ■

HOW'S DX



Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138

Christmas spirit and all the parties to celebrate the new year over, resolutions made to be broken and the year ahead with horizons to explore, such as monitoring the new band segments, promised DXpeditions to exotic and far away places to work, coupled unfortunately with the forecast of poorer propagation due to the wane of solar activity, should provide interest to all enthusiasts in one way or another.

Activity has been at an all time high on all bands over the last few years, and QSL Managers for many of the rarer stations have been stretched to the limits of their capacity.

Though there are a few "professionals" who do nothing else but QSLing, the majority are unpaid benefactors to the amateur fraternity, who get little if any thanks for their onerous task which most amateurs take for granted, and think it is their God given right to receive a card back by return mail.

The majority of amateurs who work only a few stations per year think that looking after the log is a menial chore and anyone could do it, however in some cases and particularly on a DXpedition this runs into thousands per week and can you imagine the mail box.

It is a time consuming and sometimes frustrating experience though, as with everything it has its lighter moments and you become acquainted with some very nice people who are appreciative of the effort.

Before pronouncing judgement think for a while what this person has to do. Firstly check against the log of the required station (some managers don't have the log or a copy and merrily write on), sometimes having to convert "Central Amelian" time back to UTC, then to identify it with the contact. This can be anywhere, even on the incorrect day, plus checking reports, band and mode. Maybe addressing an envelope if supplied, placing all cards for different times, bands and modes together, invariably placing their QTH on the back of the envelope, purchasing and affixing stamps and finally posting to their destination, so you can see that the time to make one DXer happy really gets away from you.

Many VKs are complaining bitterly, and rightly so, about receiving worthless cards, because of errors or omissions which render the card useless for the purpose for which it was intended, also causing the recipient to incur further expense to receive a valid confirmation.

In my opinion this should not happen, but it is a human error which has to be tolerated. The policy of some stations not to reply at all to a card which cannot be matched to the log cannot be condoned.

Return postage has been paid and it is common courtesy, and a number of prominent managers and DXers return the card noted such as "Not in log", "Doesn't work C in", etc.

With this explanation you know that you have worked a "Pirate", but you at least can start looking for that particular country again. The policy at this QTH is to keep looking until the paper work is returned all OK.

So when that card doesn't turn up by return mail, give the manager a little latitude and the benefit of the doubt, remembering he or she too has personal and business commitments and likes to enjoy amateur radio when time permits.

My observations on the problems of a QSL Manager are based on the fact that my XYL Bett did this task a number of years ago for a then rare country where the logs were copied via weekly scheds on SSB, and there was not one complaint.

Whilst on cards it should be pointed out that some cards never reach the intended station from bureaux because of the similarity of some letters of the alphabet. Correct forming of the letters of the call sign in reasonably sized print at the top right-hand corner on the reverse side of the card, paying particular attention to "zero", "one", "C", "G", "O", "Q", "U" and "V" will facilitate quicker sorting via the bureau and no misunderstandings.

CROZET FB8WG

George FB8WG has been very active at the only time that he has available, which is between 16.00 and 18.00 UTC. George has been worked in VK on 15, 20 and 40m, much to the joy of all the night owls.

It is hoped that an external VFO is amongst goods in transit to Crozet which have been held up at Corsica for some reason.

PITCAIRN VK6

Tom VK6TC is to have company this year by a relative — ZL1ADO. Evidently by reports he will be on the island for most of this year and taking the pressure off Tom.

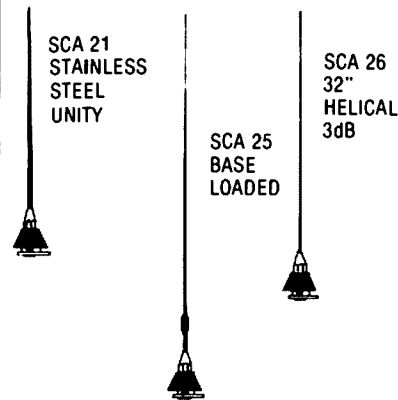
The call sign will be VK6KG. QSL information not available as yet.

ANTIGUA AND BARBUDA

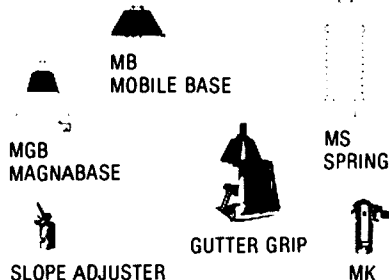
VP2A disappeared from the bands on November 1st, 1981, and was replaced by V2.

This was due to Antiguas' independence after 349 years of colonial rule, and they will become the 46th member of the Commonwealth.

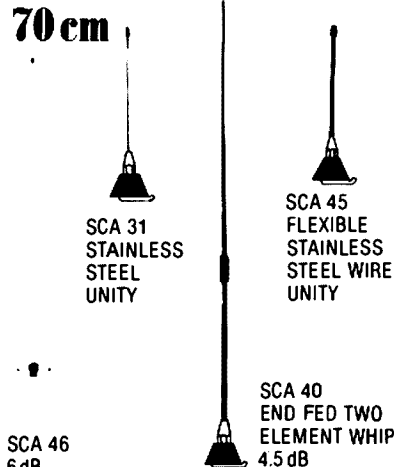
2 METRE ANTENNAS



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Celebrations were the order of the day and, apart from dancing in the streets, the amateurs got together and made an onslaught on all bands, included were a couple of YL operators who were very much in demand.

SAN FELIX REVISITED???

Bob Read SV0BV hoped to revisit San Felix before permission expired last year for amateur activity.

Bob was due to finish work there which he commenced on his last visit for his American employer, but with no Chileans and particularly amateurs welcome probably because of political pressures and Amnesty International's knowledge of the area indicates that the island accommodates a few refugees from Chile's upsets in the last decade.

If you did work Bob as KF10/CEO0 San Felix, QSL to him direct only via Bob Read SV0BV, C/- QSL Bureau, Box 564, Athens, Greece, Europe.

CQ BOUVET 3Y0

Every reader must want this rare country and an expedition is planned this month.

Licences and all landing permission documents are in hand and if overdrafts can be arranged with some co-operation from the DX foundations the trip will be on.

The organiser and 'Brains Trust' behind this effort is Dieter Hoffer DK9KD, who is a well known DXer and excellent QSL Manager.

Dieter will also be remembered for his efforts with the Reunion Island and Juan de Nova jaunt in September 1980, and his diplomacy and connections which enabled the expedition to continue as planned.

Dieter asks that QSL cards be direct with covering postage and donations would be gratefully received to help defray expenses.

QSLs: 3Y0A to DK9KD (SSB), 3Y0B to DJ3NG (CW).

The group will operate all bands, both CW and Phone, and the expected period will be mid-January onwards. To check on further details it would be advisable to monitor the ANZA net, 21.204 MHz, daily, at 05.00 UTC.

Good luck for the new one.



Dieter DK9FD.

KNIGHTS OF MALTA 1A0KM

As this is a new country and the demand will be high, the operators have decided to activate the station this month for the deserving DXers.

QSLs preferably direct to Mario I0MGM, who was the "Legal Eagle" that did all the hard work to convince Newington that in fact it was a separate identity.

ANTENNA WORRIES?

Worried about keeping that beam in the air when the wind blows? Everybody does and particularly the XYL, but spare a thought for an amateur from a South American country where there has been lots of trouble lately.

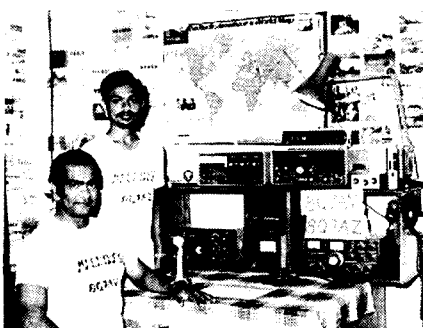
As well as the coils being excellent practice for the enthusiast with a rifle, the balun is the ultimate "Bull's Eye" and that's what happened.

DXING FROM 8Q7

The Maldives, a tropical paradise in the Indian Ocean and an ideal location for those planning a "hamming" holiday, is home to two amateurs, father and son, Noel and Romesh Lokuge, 8Q7AV and 8Q7AZ.

Noel, employed as Chief Pilot for the Government's airline for the last five years, was introduced to amateur radio by No. 1 son, Romesh, who was a keen SWLer — but enjoyed listening to his father on the aircraft frequencies, taping them and re-playing them to him on his return home. Noel, a pilot all his life, spent a quarter of a century with the Sri Lanka Air Force, retiring as Chief Instructor prior to moving to Male.

It was Romesh's idea that they both study and obtain an amateur licence. This they did successfully and hit the airways using a 520X coupled to a dipole; progressively the equipment is growing as in all "shacks", and the happy twosome now sport a 101ZD FL2100B linear, TA33JR beam, an inverted vee for 40m, plus a vertical for all band general listening.



8Q7AV — 8Q7AZ

Romesh is exceedingly keen on electronics and wishes to pursue it professionally when he completes tertiary orientation year next June.

This will mean that he has to leave the Republic as there are no tertiary institutions for further study and he is looking at scholarships in VK, the States or the UK.

Noel and his XYL Shirance, No. 2 son Ishantha, daughters Kshama (pronounced Shama, the "K" being silent) and Indu, enjoy the friendship they have made with other amateurs world-wide and hope to provide 8Q7 for quite a few in the years to come.

Good DXing from 8Q7. Noel and Romesh and the VK gang will always be pleased to have a rag-chew either from the home QTH or whilst Noel is "island hopping" amongst the atolls using his QRP rig, aeronautical mobile.

Thanks to all for their contributions this month, especially VKs, 2DXH, 3PA, BMA, DFD, 4DK, 6IH, NE, 8NE and Eric L30042, who have made this column possible.

A happy new year to you and your families, also lots of DX.

73. Ken VK3AH.

QSL ROUTES

Call	Manager
A6XJC	— PE0MGM
A9XDD	— K7DVK
A9XDO	— KA4S
AP2ZR	— JA6GDG
C2INI	— OE2DYL
C3ILX	— EA3VM
C3IST	— DL1MH
C5ACF	— K4YT
C5ADS	— DL1LD
C5AEJ	— K4YT
CN8ED	— N9BSD*
CT1BCM	— OH2BH
DL1BA/3A	— DJ5PX
EP2TY	— JR3WRG
F0ANY/FC	— DL4FF
F0GAP	— W8NR
G3GJQ/CN8	— RSGB
HC8GI	— W3HNK
HH2VP	— N4XR
HS1AMS	— K17PHO
J3AH	— W2GHK
J5HTL	— SM3CXS
J8AG	— N0AFW
JY5ZH	— DJ9ZB
JY9RV	— GN3RVG
K8MFO/6CA	— W8TRS
KP4KK/DU2	— WA3HUP
N4FKZ/HRS	— WA4RZL
OE2VEL/KHB	— OE2DYL
OE5JTL/YK	— OE5UYL
R1ARO	— UK1CAA
SV1AU	— W3FYT
TE1C	— TI2CF
TJ1GH	— DL1H
TL8RC	— F6EZV
TR8BJ	— DJ5DA
TYAI	— ON5NT
VE3NFR/4U	— VE31DW
VP2KAA	— N4PN
VR2KAE	— N4PN
VQ9AB	— K0AB
VS6GC	— OE1HGC
VS6GZ	— OE1HGC
W8NDC	— W8TPS
3D2SM	— VK3VNI
3XIZ	— W4FRU
4KIB	— VA3XBP
4N2DX	— TU2DX
5N0KUY	— JI1MI
5N2ALE	— 9M3BI
6Y5MJ	— K8ZBY
7X4AW	— DJ2BW
9Q5FL	— K4AEB
9Y4FU	— W3EVW

LOW BANDS SW OX WITH VQ6MD

1.8 MHz:
K1s and G.

3.5 MHz:
DL, F, G, I, LA, OH, OK, OZ.

4, 5, 7m and Others:
The CQ Phone test brought about some nice ones on 80 SSB, such as GD5DLW, HZ1AB, KX6ZY, P29PS and P41C.

40m SSB:
A little activity such as CT3CE, FR0FLO, HZ1AB, KG6RE, P41C, UM8MAA, UM8MWW, VP2KAE, ZK2ZZ, 4A2K, 4Z4DX.

LISTENING ON THE CW BANDS WITH ERIC L30042

3.5 MHz:
3D2NB/MM.

7 MHz:
CT1BCM, DL1TL, FK8KAA, VK9NL, YV1AD, 8P6QL.

14 MHz:
E14EN, FC6ETR, FK8KAA, FM7WU, FP0GAP, GJ5BLJ, WD9IHD/KH4, HH2VP, OA6BQ, PJ7VL, SV1GR, G3AAE/VP9, VS6DF, ZS6BIM, 8P6QL, 9U5WR.

21 MHz:
EA6BD, FK0AF, HH2CL, HK1QQ, HK0BKX, HC1CTJ, HLOW, PY2PGS, SV1JG, TF3YH, XE1MB, YV5GRV, ZS1HE, 9H3BI.

28 MHz:
VS6HK (beacon).

GOOD QSLERS FROM A SWL
A4XIZ, CR9UT, DJ7UX/EA6, KP4KK/DU2*, F79WARC, GU5DQT, H18OMB, H44MM, K6XT/NH9, VP2KAA, VQ9QA, ZE2ADI, ZE2KV, ZM7JS.

* Denotes 1.8 MHz.

FROM THE LOG OF VK6IH SSB

10m:
C6ADV, CT3AB(YL), EP2TY, HR1OL, J3AH, JX7FD, OY5NS, TG9EW, VK23W(YL), VP2M, 5M3PA.

15m:
D4CBC, HH2W, EL2AV, K6HNZ/CT3, T5TP, VP2KAC, 5Z4CM(YL), 6P2EC.

20m:
CR9D, JX7FD, KL7U, OX3ZM, PJ7ARI, V2AU, VK0AN, VP2EC, VP2MBA, ZK1BM, ZL4PO/C.

40m:
ZK2WW.

FACES BEHIND THE KEY AND MICROPHONE



Egil OZ4BO



Father Moran 9N1MM



Hugh VK6FS

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3 EL 20m	\$149.00
6 EL 6m	\$102.00

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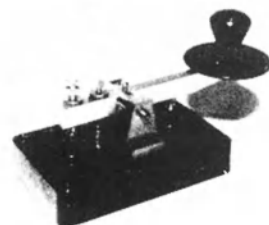
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EDUCATION NOTES

Brenda Edmonds VK3KT

Best wishes to all those sitting for the February exam. I hope those of you who used the trial exam found it helpful. I would be interested to hear any comments.

Herewith a few recent suggestions I have received about exams and licensing for your consideration:—

1. There should be made available a list of 100 or 150 Regulations questions, from which the 30 for the exam will be selected. (Similar to the Learners' Permit booklet for a Victorian driving licence.) This list should be changed only when changes to the Regulations occurs. The reasoning here is that there is a limit to the number of Regulations questions that can be written. Most people have already seen most of them by the time they sit the exam as it is.
2. There is no need for an examination in Morse sending as anyone who passes the receiving usually passes the sending.
3. Sections passed should be able to be held for two years instead of the present one year, thus reducing the need for re-examination to some extent.
4. Procedures should be established to allow CW exams at higher speeds for reciprocal licensing purposes. These could be either fixed date or by arrangement with DOC. How many people make use of this facility? How much would they be prepared to pay for an "endorsed" licence?
5. Examinations should be taken out of the hands of DOC and given to an institution such as University or CAE.
6. There should be an "advancement" exam to allow the issue of a higher grade of licence with associated privileges of power, band space and mode.
7. There should be a standardised course for NAOCP and AOCF theory syllabuses for class instructors. This should give details of order, content, experimental work resource material and references for each section.
8. Exams should include 10 minutes reading time as well as the hour or 1½ hours for the exam.
9. Provision should be made for evening or Saturday afternoon exams, and for exams at a range of centres in country and metropolitan areas.

I would welcome ideas and opinions on these topics or any other aspects of education; nearly all of the suggestions are present Institute policy. You can contact me QTHR and Melbourne phone book, or on about 3685 kHz about 2200h. Melbourne time most Wednesdays.

73. Brenda VK3KT. ■

CLOSE-UP



"Monty" Nell VK2JQ being presented with the Citizen of the Year award at Goulburn Lilac Time Festival.

Monty, a retired Minister of Religion, is still a very familiar figure in Goulburn as a social worker and hospital visitor. He is

patron of the Goulburn Amateur Radio Society and operates his FT101 on HF as well as being on 2 metres. Last year he celebrated his 80th birthday, and has had his licence since the 1920s.

Photo: Goulburn Evening Post.

AROUND THE TRADE

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Vicom has recently installed one of the first systems in Australia of the new Ericsson ASB30 computer controlled PABX telephone system.

Vicom believes that this will considerably enhance the company's reputation for prompt handling and processing of inward telephone calls, including product enquiries and customer service enquiries.

In addition a number of additional incoming lines have been added to the system to handle calls in peak times. Vicom has noticed a strong trend in recent times towards customers ringing for advice and assistance on ways of improving the amateur equipment and station practice.

To speed up telephone enquiry processing Vicom has asked that technical enquiries and assistance be directed to the Customer Service Manager, Mr. Duncan Baxter VK3LZ. ■

PHOTOGRAPHS FOR AR

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If you cease being a student or are not a student any longer, please pay the amount shown on the subs. notice itself and discard the special student form. This assumes you have a VK call sign — if you have no call sign deduct the difference (if any) between the full and associate subscription rates.

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AWARDS COLUMN

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WHAT PRICE THE DXCC?

I have always followed a policy when writing this column not to use it as a forum for my personal views or anybody else's views. This is best done by a "Letter to the Editor" and it is up to him to decide whether to publish it in AR. On this occasion I will depart from this policy if only to draw attention to a situation which in my view has got a little out of hand and to provide some comments which must be aired by somebody. The DXCC and its effect on amateur radio is the case in point.

When I received my AOCIP and operator's licence over 20 years ago, I quickly learnt that one facet of amateur radio that interested me in particular was the collecting of awards, popularly known as "wallpaper". If you mention awards to almost any amateur in VK or overseas, you will quickly learn that most know about or have heard of the DXCC and the requirement that you must obtain 100 QSL cards from 100 different countries to qualify. From comments I have received from many individuals and sources whilst I have been doing this job, and my own "on air" experiences over the past two to three years, it is about time we critically examined the DXCC, what it means and perhaps explore the possibility of alternatives.

How many DX operators would agree that the chasing of that elusive new country to add to your DXCC score has led to some undesirable and ungentlemanly practices on the air? Having worked the country, what about the hassle and expense the operator is involved in to obtain that important QSL card?

I am now wondering where it will all end and, having obtained those elusive 300 plus QSL cards, what it all really means anyway? Let me list some of these alleged undesirable practices that have emerged on our DX bands over the past few years:—

1. The DX net frequency. Bad luck to anybody who is legitimately occupying the frequency when DX net time comes around.

2. The professional QRMers. Some of them have now become quite expert. The so-called "carrier droppers" are old hat. We now have RTTY, variable speed and reverse voice recording, burpers, recordings of jammers and computer-generated noises to contend with.

3. The illegal high power experts. Some of them are head and shoulders above the opposition. I know what power I use and have a good idea after 10 years on the DX bands what signal reports I give and expect to receive. I have come across some glaring examples of excessive power over the past couple of years but I must say that I have never heard a signal from within VK which is suspect.

4. The split frequency operation. No doubt this is now even more necessary because of the enormous increase in numbers

of operators. Some of the comments I have heard on DXpedition transmitting frequencies are downright rude! More commonly used expressions are "turkey", "nit-wit", "idiot", to name a few — and yet we have others who regard themselves as self-appointed professional policemen who keep talking whilst others are trying to hear the DX station or give advice about how to work the station. The amateur who is enjoying his pleasant QSO with an overseas friend is not impressed when he is wiped off the band by a dogpile calling a DX station when a frequency split is in use.

5. The blatant soliciting over the amateur bands for funds to finance a DXpedition, a practice which is entirely contrary to the spirit of the regulations under which we are permitted to operate.

6. The "over-the-air" statements from some DXpeditioners that unless my QSL is accompanied by the required SAE, 3 IRCs or "green stamp", a QSL confirmation of the QSO will not be forwarded — and an even worse statement from one DXpedition that QSL cards via the Bureau will not be answered. We all know it but they don't have to say it!

7. The DXCC criteria which allows pieces of uninhabitable rock, reefs that are covered by water at high tide, etc., to be counted as DXCC "countries". Furthermore, it is often necessary to risk personal life and limb to set up and operate an amateur station at some of these locations. I suggest that the criteria is arbitrary, designed by a group of well meaning amateurs, but occasionally stretched to keep the DXCC going, e.g. why can't we change the criteria to allow VK7 or Kangaroo Island to be counted as separate countries? Conversely, why can't we combine G, GW and GM into one DXCC country?

8. The bootleg QSL card printing operation which was uncovered by the ARRL a few months ago. It is incredible to me that some individuals will go to such lengths to get themselves in the so-called DXCC "Roll of Honour". I wonder how many similar printing operations have gone unnoticed and, as a consequence, how much in monetary terms is a legitimate QSL card worth? Whoever organises the next DXpedition to say any of the five most wanted countries could charge \$10 or even \$20 per QSL card and get away with it!

9. The signal report. Everybody is now 5/9, even if you can't hear them. I have actually worked and received a QSL from a station that I could not hear, having been helped along by others. The actual QSO is not so important. However you must get hold of that QSL card to show to your DXCC awards manager!

10. QSL cards with religious and/or political messages thereon. Those of you who have received any of these would know what I mean and individual opinions would vary according to your own philosophy. These go straight into the WPB at my QTH. The practice of commercial advertising on QSL cards appears to be on the increase but I personally have not objected. However I can easily understand the objections of other recipients of such cards.

11. The DX furry monger. He is the fellow who deliberately starts rumours on the DX bands about forthcoming DXpeditions, etc., which cannot possibly be true. Some of these rumours travel like wildfire and end up in one or more of the DX news sheets. It is only through experience, commonsense and a network of spies can a keen DXer sort out the grain from the chaff. Recent examples are the proposed DXpeditions to 3Y and Heard Island in the middle of the southern hemisphere winter (?) and the continent of Antarctica being split up into separate "countries" for DXCC purposes.

The QSL is now a major cost to some of our DX operators, and for what purpose? I suggest that you only need it to show to your DXCC awards manager; then you may as well throw it away because it is of no further use.

Others may say that you need QSL to qualify for other pieces of wallpaper but this situation is rapidly changing. Over the past couple of years I have noticed a rapid acceptance of the GCR system of log entries by awards managers who no longer require QSL cards. In my case, I now follow a practice of deleting all awards which require QSL cards from my own awards programme and concentrate only on those awards where a certified log extract is acceptable. If we all did this, awards managers would quickly get the message and the QSL cards would eventually become obsolete. On the other hand, some of us have not forgotten the old, long standing tradition and courtesy of exchanging QSL cards following a pleasant QSO. I have four shoe boxes full of QSL cards, which is not a great number for 20 years of operating. This is due to a deliberate decision I made when I first obtained my operator's licence to QSL certain countries 100 per cent via the Bureau on receipt only and I am adding further countries to this list progressively. Perhaps I do not require any more QSL cards? However, I like to seek out a QSO with and QSL from the odd special event station or special call sign or a card which contains some illustration or information that interests me, e.g. a card worth having is W6RO from the RMS "Queen Mary". Some new stations have in recent years organised special event amateur stations to coincide with independence celebrations, etc. I worked H44SI in July 1978 and was promised a special QSL card if I sent along my card with SAE and green stamp or IRCs. In spite of my past experiences in similar circumstances, I sent along my IRCs but, as you guessed, no QSL has been forthcoming. I often wonder what happens to all the IRCs and green stamps: the postal system cannot be that unreliable! Fortunately I can report that I was not caught again with the more recent operation from YJ8IND. My card has gone via the Bureau and it will be interesting to see what happens.

Another practice which is rather disturbing is that some rare DX stations save all the IRCs and green stamps received direct and send all the cards in bulk via the

Bureau. This is not exactly cricket and my attitude now is that my QSLs will go via the Bureau and hang the expense. Needless to say, there are some that I have never received and probably never will! However, I did receive via the Bureau my first 9 x 5 QSL for confirmation of a new country after a seven year wait!

I have also heard complaints from the new crop of DXers that they will never be able to knock off those at the top of the DXCC ladder because some countries that were active 10 or 15 years ago are no longer available. Does this matter anyway? It is true that many "countries" have been "deleted" or are QRT mainly for political reasons and may not be available to amateur operators for years to come. It is true that I worked and have confirmed some countries back in the early 70s that are not now available to current DXers. On the other hand, there are some DXers who were active 10 years earlier than I who have BY, ZA, 70, etc., confirmed. Some claim that those who, having been DXing longer, have an unfair advantage and this is certainly true under our existing DXCC rules, i.e. you can get on top of the ladder, go QRT and remain there until you become a silent key!

Of course, we could always amend our DXCC rules so that claimed QSOs are deleted say after 10 years so you would have to remain active to maintain your position on the ladder. This sounds fine until you consider the incredible amount of record keeping required of the DXCC awards manager. I suggest that it would be impossible to manually operate such a system but if we had each DXCC record on disc storage, programmed to progressively delete 10 year old QSOs each month and a trained ADP staff to input the information regularly and accurately, we could sustain such a system. I would like to get my hands on the Wang System 5 W/P at work as a start but my employer is not interested!

So where do we go from here? One idea is to delete the QSL card requirement from the DXCC rules. Before you all cry sacrilege and deluge the editor with protests, just think of the advantages.

- (i) There will be immediate and significant financial saving to all DX operators.
- (ii) The work for all our volunteer QSL managers and WIA QSL bureaux in each State will significantly decrease and ultimately disappear.
- (iii) The pressure for band space on the DX portions of our amateur bands will be substantially reduced. Operators will tend to spread out over the full spectrum of each band and operate at a more leisurely and gentlemanly pace.
- (iv) There will be a substantial decrease in the need for DX nets and the length of time they operate.
- (v) The incentive to organise expensive DXpeditions to the rare islands, reefs, etc., will collapse. This will release pressure on band space and could

eventually lead to a sensible rationalisation of the DXCC countries list to get rid of all the rubbish.

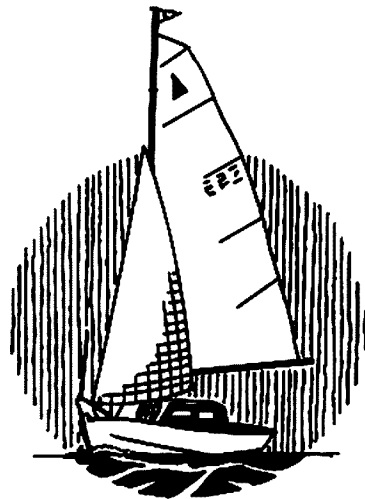
- (vi) As you will only need a log entry, we can all work ZA and BY within the first ten minutes of them appearing on the band. The dogpiles will be substantially reduced and eventually eliminated. Furthermore, you will only require 10 watts to work the world anyway.
- (vii) All the professional QRMers and high power operators will disappear instantly; there will be no incentive for them to continue their activities.

Of course some of the above suggestions are extreme and riddled with danger because some so-called "amateurs" would not be averse to cheating with our log entries. Nevertheless, the proposition to eliminate the QSL card requirement from the DXCC rules has a lot of support amongst some operators.

However, if we maintain the status quo and leave the DXCC rules unchanged, it is necessary to look into the crystal ball to see what might happen to our DX bands and the operators over the next 10 years or so. Some plausible predictions may be:—

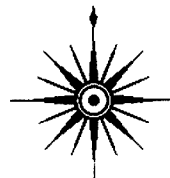
- (a) The continuance and increase in all the undesirable practices previously mentioned.
- (b) The end of the pleasant ragchew type QSOs with overseas friends. Such operators will be accused of taking up valuable band space and will be wiped out by the mad keen DXers.
- (c) Within 5 years QSL cards from some DXpeditions will cost \$5 each minimum and you must send direct, and the price will escalate at the rate of \$1 per annum.
- (d) Illegal linears will proliferate. I already have a design of a 5 kW auto-tune remote control linear on the drawing board but need to make some structural changes to the wooden rafters in the shack ceiling before installing it, complete with a refrigerant cooling system (to allow for future expansion) out of sight in the roof. Also I must be able to convince my local electricity supply company that I need a three-phase mains service in a strictly residential area. This appears to be the hardest hurdle to overcome.
- (e) USA amateurs will receive phone privileges for the 14100-14200 portion of the 20 metre band.
- (f) Future DX "big guns" will recruit private armies or security patrol personnel to keep neighbours, other amateurs and RIs away from their amateur radio estates.
- (g) Illegal amateur radio activities will cause undesirable diplomatic incidents. To date, illegal operations have only been a source of annoyance to most operators, but during 1979-80, pressure had to be applied through diplomatic channels to silence an amateur radio station in a Northern European country which was engaged

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NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ
Federal EMC Co-ordinator

in deliberate QRM tactics. Police with big shooters were involved in this incident!

- (h) A gradual down-grading of the status of amateur radio by governments, regulating bodies such as the ITU, and individuals as a result of some or all of the above listed activities.
- (i) The banning of amateur radio privileges by more countries as a result of the above listed activities — not to mention the ultimate economic damage which will result to the employees of firms in countries manufacturing and marketing amateur radio equipment.

Before you dismiss the above suggestions as the ravings of a ratbag, just remember that when working with the aid of a crystal ball, some but not all predictions will come true. The worrying question is which prediction?

Apart from being the devil's advocate, where do I stand in this debate? I guess you will have to listen to the dogpile when ZA and BY come on and maybe my call sign could be present! I am sure our editor would welcome any comments but please don't send them to me as I may not have the time to read any letters. I am considering a proposition to take on some after hours employment to earn extra cash to pay for the IRCs, green stamps and bits and pieces for my new linear!

Therefore is there an alternative to the DXCC award? I think not, but there are some other awards which require almost the same consistent effort to qualify. One such award is the "UN-DU Award of the Philippines" which will be described in a later issue. I have included the preamble accompanying the rules for this award which explains how the sponsor, The Philippine Amateur Radio Association, has attempted to correct the various deficiencies for which the DXCC is often criticized.

I have now received my UN1DU Award and this would be one of the very few in captivity within VK. In my opinion, there is a far more detailed and colourful document than my WIA and ARRL DXCC certificates but still will not displace my "Arabian Knights Award", which is the top certificate in this ham shack. I predict with confidence that there is no one within VK who could claim all possibilities for this award, e.g. I could not claim Bahrain because I have no A9 QSL cards, whereas I have four MP4B cards.

I do not have the official PARA list of UN members but I submitted my application on the UN list obtained from the United Nations Association office in Adelaide. Similar listings can be obtained from UN Association offices in each State. You may be loathe to apply for this award because you must send original QSL cards for scrutiny by PARA. As the mail system between VK and DU is somewhat unreliable, I suggest you contact me for details of an alternative but expensive method via an international courier service which should guarantee safe return of your QSLs if you are not prepared to risk the postal system. ■

(To be concluded in the next Issue.—Ed.)

PURPOSES

- (a) To educate amateurs and the public on RFI . . . its causes and cures.
- (b) To encourage the manufacturers of electronic industrial and consumer electronic equipment to accept responsibility for and take those steps necessary to reduce the susceptibility of their equipments to strong RF signals.
- (c) To encourage power generation and distribution authorities to accept responsibility for and take those steps necessary to reduce and eliminate the generation and radiation of radio frequency energy from such equipment or device which is not intentionally designed to generate or radiate radio frequency energy by emission or induction.
- (d) To encourage the manufacturers of amateur equipment to take those steps necessary to reduce the generation and radiation of spurious energy.
- (e) To provide amateurs and the public with information as to whom requests for assistance can be directed when electronic industrial and consumer equipment is affected by RFI.
- (f) To educate amateurs and the public as to their rights and obligations in matters pertaining to RFI.
- (g) To ensure that visibility is given to the RFI problem in the popular and technical literature and at technical forums attended by amateurs and manufacturers of amateur equipment and of electronic industrial and consumer equipment.
- (h) To provide support for appropriate legislation.
- (i) To monitor and respond to proposals to impose local ordinances concerning RFI and to assure that these are fair and reasonable.

ACTIVITIES

- 1. Give visibility to RFI in Institute publications, including articles in AR.
- 2. Continually update the RFI Assistance List, and publish this list at least once a year.
- 3. Maintain a dialogue on RFI with manufacturers of electronic home entertainment equipment, with manufacturers of amateur equipment, and with the Department of Communications, as requested by the Federal Executive.
- 4. Make arrangements for the testing of amateur equipment for the generation and radiation of harmonic radiation as required.
- 5. Encourage and support appropriate legislation, and in particular assist the Federal Executive in relation to such matters.
- 6. Update and make available to all amateurs in Australia a packet of information on RFI.

- 7. Work for the publication in newspapers, news magazines, etc., of articles on RFI as necessary.
- 8. Present papers on RFI at WIA technical forums, and such meetings on electromagnetic compatibility.
- 9. Prepare material suitable for presentation at clubs, at meetings, on amateur radio news broadcasts, etc., on RFI.
- 10. Explore ways to educate electronics servicemen in the nature and correction of RFI and TVI.
- 11. Generally to advise the WIA, through its Executive, with a view to formulating inspired and effective policies by the WIA, in relation to RFI generally.

EMC advice is available to all Australian amateurs through the National EMC Advisory Service. The main aim of the service is to try and ensure that all Australian amateurs have access to the best national and international EMC advice and technical information.

Interference is rather like our home insurance — we don't think about it until we are in trouble! In order to try and ensure that data and advice is available when required the service has a team of technical advisors and a large amount of information on file. Our information files are being constantly updated. However, due to the complexity of this very wide subject we must rely on the co-operation of all Australian amateurs for a large percentage of this information. If you have any information, ideas, suggestions, comments, etc., in connection with EMC, please don't sit on it — pass it along.

If you have an EMC problem, don't wait until it gets to major proportions — send the details along. Law suits and legal battles can be very expensive. One of the main aims of the service is to try and ensure that the problem does not get to law.

While on the subject of law, it is interesting to note that the DOC hopes that the Radio Communications Bill will be presented in Parliament during the current sessions and come into effect in the autumn session in 1982. After the Bill is introduced into the House of Representatives there will be further opportunity for comment before it passes into law. We must ensure that the section which covers EMC, susceptibility and immunity, are fair and reasonable towards amateur radio. This is the area where all amateurs can help by sending constructive comments and suggestions through the National EMC Advisory Service. ■

QSP

In the middle of the Pacific Ocean there's a line you can cross and lose a whole day. In the middle of the highway there's a line you can cross and do even better.—"Lyrebird". ■

1981 Remembrance Day Contest Results

Winner - VK5/8 Division

Reg Dwyer VK1BR

COMMENTS BY FCM

Well here it is, the results at last, and some really excellent efforts were seen this year, even though the scoring was reduced to 1 and 2 points per contact.

The tone of the contest seemed a lot more relaxed and friendly with operators taking a little more time for the contact.

The quality of the submitted logs was generally quite good and a word of thanks to those of you who bothered to type or print your entry.

A special commendation for effort goes to the amateurs who assisted in delivering VK0HW's log via cassette, RTTY, computer processor and Australia Post.

Many of you have commented on the rule changes and the lack of published formula. The formula to be used this year was to be received from VK6 and unfortunately had not arrived until after closure date for AR copy. When this formula was distributed to all Divisions for approval for use, the majority decision was to delay its introduction until a full appraisal of its unseen effects could be worked out. It was decided that the formula used in the 1980 contest would be used.

I have been receiving a steady stream of comments and information since the completion of the contest and the formula will be sorted out well before 1982 contest.

NOW FOR THE RESULTS

VK5/8 has won the contest again this year with consistent scoring and a good participation rate.

VK6 came a close second, whose effort was very good and scoring was well up.

VK7/0 was a close third, with a very good participation rate.

The total number of active logs received was 1005 with 170,677 points scored in total, at 1 and 2 points per QSO.

The scores, by Division, follow and the results speak for themselves.

RESULTS OF THE 1981 REMEMBRANCE DAY CONTEST

COLUMN DETAILS

- A - Total logs received.
- B - Full call logs received.
- C - Full call licences as at 1st April, 1981.
- D - Total points scored.
- E - Percentage participation.
- F - Trophy score from formula
- G - Position

	A	B	C	D	E	F	G
VK1	52	34	176	10268	19.32	1984	5
VK2	139	112	2398	18910	4.67	883	7
VK3	118	91	1919	21886	4.74	1037	8
VK4	131	97	827	19054	11.73	2234	4
VK5/8	285	208	840	49096	24.76	12157	1
VK6	170	131	556	33382	23.56	7865	2
VK7/0	110	69	222	18081	31.08	5620	3

VK1 CW

MM	22	UD	80	CC	374
FT	26	*NDM	102		
DA	55	DH	208		

VK1 PHONE

SG	12	*NOJ	131	FM	261
*ZAT	17	RR	133	*ZQR	266
SB	18	FT	124	*NEB	318
DF	25	*ZIF	150	ZT	318
*NDK	31	*ZEJ	150	CC	334
DG	40	*NAN	162	MX	344
DH	46	RK	168	*ZAR	345
*NOY	50	MF	170	*NDA	368
HF	51	*KDL	191	*ZAH	385
BO	57	MM	201	*KAA	395
UD	58	*KEN	207	DA	473
AI	70	OK	210	*NCV	484
DS	94	LF	225	JN	742
KV	100	WI	240	GB	792
*NEF	129	CAY	246	MH	70
TOTAL SCORE					10268
FULL CALL LOGS					34
Total Logs					52

VK2 CW/RTTY

BOS	18	*NAW	54	BRA	132
DEW	20	VM	60	SU	180
AJO	24	LF	70	CBF	213
HQ	30	AIO	70	II	220
PN	30	IV	76	DID	246
RJ	32	AZR	84	BHO	247
DQL	32	BOO	86	ZC	252
JM	42	OL	100	EL	336
BO	46	GT	108	AQF	376
BLK	48	*VLF	124	DI	386

VK2 PHONE

CU	11	NV	55	*VQT	110
YA	11	*KBN	58	LF	110
CF	12	RX	59	JT	116
DLG	12	AGS	60	AMV	121
AQF	13	ASC	60	DHU	127
AJH	14	DBA	60	3PD/2	130
OH	14	*KAW	61	AIO	130
BAD	14	CM	62	*KAY	140
BRC	15	MR	62	PN	145
*KDX	17	WI	64	BID	147
*ZBO	17	DLH	65	*NAW	156
AIM	20	AJO	65	BDT	163
AZS	21	*KDT	66	BOD	167
DJD	21	*PFH	69	SU	169
DKS	21	*VUT	73	DO	175
PY	22	FJ	74	DQR	185
XT	23	CBH	77	*KES	196
DOL	24	*PGO	77	DUS	211
*NWG	26	*NKN	79	AGF	220
AYF	27	*VYP	82	BOS	225
RJ	27	DLE	84	ASY	244
BHO	28	AIC	94	BDN	264
HZ	32	*VVV	95	BGF	287
*KBH	33	APP	97	DVU	346
*VYV	34	*PKJ	100	NW	388
*VOE	34	DEW	100	DIX	405
AJL	34	GS	101	*NJO	419
*ZVN	36	*ZZX	101	DM	455
WT	38	*KBK	102	BFR	501
WW	40	BWT	103	BAM	534
IV	41	BUT	105	BO	541
*NWE	44	DXG	105	RA	597
QC	49	BCZ	106	DGX	699
TK	55	UC	107	DNS	784
AZR	55	ABC	109		

VK2 CLUBS

ABZ	26	ABZ	185	DCL	785
WG	120	BHZ	419		

VK2 LISTENERS

L20475	254
TOTAL SCORE	18910
Total Logs	139
Full Call Logs	112

VK3 CW/RTTY

FA	20	ACA	52	BDH	202
YW	22	VF	96	RJ	222
DLM	24	AMD	100	DG	236
SM	36	KS	116	BOD	310
BYN	44	BLO	152	BKU	342
SV	44	XB	186	AEW	434
BNO	50	NK	200		

VK3 PHONE

BKU	10	KS	62	AEO	176
BOB	10	ARJ	63	*YIW	185
AXQ	10	DVT	66	*ZNE	189
*PSW	11	*NDT	68	BII	201
SV	11	*ZFI	69	AXE	207
ARA	12	QZ	81	BQU	217
OLM	12	*VIR	82	SM	218
RN	12	BWI	82	AKF	222
AWZ	13	DES	82	AVV	233
ABP	14	UJ	88	DAK	236
*ZSO	16	NE	89	XF	248
*VKU	17	XDK	91	BSR	250
ASN	17	AMW	92	*ZWI	252
DET	18	XB	99	*YUI	262
AMD	19	ZJ	100	*YMY	284
*YCU	22	*YXK	100	WI	315
XS	28	EF	100	JN	315
ANP	30	DS	101	BRD	356
BOD	31	*VUJ	102	ZI	371
ABW	34	XDT	111	WJ	428
PR	34	BGB	112	GI	481
PBA	42	DGV	118	*NLO	530
BBM	42	BJM	119	BMV	589
AWI	44	DDX	135	*ZXW	606
*VAN	44	DAX	135	AYF	634
BYA	45	*VMZ	141	ANM	646
*VNJ	46	*YVR	146	BYN	761
KT	49	AOR	146	ADW	783
WY	50	XQ	150	CGR	817
BDH	50	DJB	153	WW	824
BRL	57	*YRP	157	WP	1001
*KAU	60	BKN	159		
*ZNU	62	*VRU	161		

VK3 CLUB

BSH	744
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VK3 LISTENERS

L31376	875
TOTAL SCORE	21886
Total Logs	118
Full Call Logs	91

VK4 CW/RTTY

AMH	10	ABM	52	HH	166
DT	22	AIX	72	CJ	170
SF	30	SV	74	FB	210
AW	30	OY	78	LV	426
XJ	34	DI	94	XA	562
*VDG	50	*NRZ	128		
NJ	50	JH	146		

VK4 PHONE

ADB	10	LN	20	*KWO	25
GNI	10	ZH	20	*VDG	25
*NZJ	11	UP	21	*ZJX	26
NS	12	AF	21	VS	26
RE	12	AAU	21	AJU	26
PZ	13	*VEH	23	XZ	26
XP	18	AHO	23	LE	28

UB	30	AAK	99	*NIK	162	*NPC	92	SE	157	APH	352	TU	15	LV	69	HU	249
*NXJ	30	ASP	100	*VCE	162	*NGC	92	QO	158	ZK	353	*NMH	15	SH	69	TO	243
ABM	32	RT	102	AMH	165	*NOC	92	ATM	161	APG	353	MO	15	XT	70	*ZHR	251
LA	34	KT	102	ARD	173	*NGA	94	AWM	163	ACE	359	*NAZ	16	*ZHU	71	*ZSE	261
*ZRQ	34	*NUN	104	UJ	175	VD	96	RR	164	ANW	363	PS	17	*ZLO	71	AJW	276
*VEL	35	*NVV	108	*ZZM	177	*NWW	97	AIM	166	*KDG	367	ZH	17	*NGU	72	RO	279
YN	35	*NXX	110	KD	179	*NRA	99	KV	175	ATE	369	JY	17	ABM	73	IM	285
*VHE	35	*NDG	110	FN	193	ABY	99	*ZBC	176	*NCX	374	*ZOJ	18	YE	75	*NLZ	289
GT	36	RF	110	ES	200	*NTU	100	*PQZ	177	VW	381	EB	18	*NOK	78	JS	291
BG	36	SV	111	AVK	200	*KOT	100	*NWS	181	AJQ	381	*NIM	18	EO	80	GW	293
*KMD	43	CCU	112	*NUM	232	UI	102	*NLC	190	AMW	386	AV	18	*NPL	81	*NYL	298
PU	50	ANZ	114	*VJK	254	BI	102	SS	190	MX	390	EJ	19	LP	84	ABR	299
UG	50	AEA	121	SBP	256	AKW	103	ND	192	*KEG	395	*NPG	20	AN	87	ST	304
EF	50	ATW	122	AEM	258	*NDP	105	XW	200	DI	407	ZS	20	EE	91	KB	307
*NVW	53	PJ	122	*VCO	268	IT	105	XI	202	NJ	415	PX	20	*KBD	92	GL	309
YG	55	*KNL	123	UX	275	TW	105	*KDB	204	ZZ	428	RO	20	RZ	100	BE	343
*KAP	57	ZBV	128	LB	280	*KAA	106	*ZDJ	206	ACW	428	*ZOR	22	WZ	104	DY	349
QY	60	FX	129	*VBD	303	APL	107	AST	212	*NRN	441	WX	23	CF	106	NK	357
CZ	60	ABY	131	ZV	319	*PLW	109	AJJ	217	AAB	443	WV	23	UH	107	ML	358
AIX	61	2RP/4	135	*NZW	321	LM	109	FY	218	*ZCF	444	UU	25	*KGE	110	UT	381
ACW	61	DT	138	ACC	341	*NWT	112	*NNM	221	DJ	455	NO	26	PO	113	*ZLT	396
AMG	62	*VDF	139	TE	348	YO	116	*ZHV	228	XZ	456	NE	26	*NGX	117	OM	403
*NUI	64	ASB	142	AGC	394	JK	118	*NHJ	232	AWK	461	DC	29	HO	119	AO	423
AGU	66	PK	147	AEV	469	XT	120	AHK	241	*KRX	482	AOL	30	DV	120	FC	406
EH	74	WT	150	OO	551	AO	120	LN	246	OU	493	UX	30	QK	120	WI	438
*KBD	78	APG	151	AOP	645	ADY	120	AAJ	248	LP	507	TP	31	XX	120	UN	439
ZJ	79	YX	155	AMB	690	ATS	121	ALW	250	ABC	512	BX	32	*KVK	121	AWI	439
AXT	94	IZ	158	LT	790	FL	124	AVO	254	ZH	523	ARC	33	SO	121	AD	442

VK4 CLUBS

*VCI	30	AOH	479	WIS	750
*NCI	288	WIZ	623		

VK4 LISTENERS

L40018	350
L40965	10
TOTAL SCORE	19054
Total Logs	131
Full Call Logs	97

VK6 CW/RTTY

VP	12	UH	30	AKH	82
OU	20	JM	36	*NTU	90
JG	20	AU	40	FM	106
*NRN	20	RK	40	HO	116
WI	20	*NEP	50	TL	120
ATF	20	AK	52	IF	155
FX	20	IX	56	UY	160
ATO	24	KL	60	*NJE	201
ADD	24	QR	60	ARA	286
YD	24	RX	60	BN	356
OX	24	LI	62	UM	420
BY	24	RT	68		
UX	30	KU	70		

VK5 PHONE

YO	10	OC	27	*NHO	53
ABD	11	AJG	27	BF	53
OV	11	HN	28	CL	53
UE	11	*ZPO	30	*NQD	55
*NHB	11	VB	30	*ZAR	55
AKC	11	ALM	31	UX	57
ZTX	12	JP	31	AMF	57
FX	12	*NUA	31	*ZKK	58
NOK	12	*NSX	31	PS	58
RI	12	*ZIS	31	LL	60
AG	12	FX	31	AJR	62
ATF	12	RJ	33	WI	63
*ZTP	13	*KEF	33	*PKV	64
VY	15	DO	33	RK	64
QV	15	UH	34	*NEI	64
*NNS	17	ADK	35	AOK	65
*NXT	18	*KRT	35	YU	66
ATN	19	YY	35	*ZIB	67
BH	19	YV	35	ATR	68
*PJH	19	IX	36	ARV	68
CA	20	*KJI	38	TY	70
RT	20	IB	40	*ZJJ	70
*KIM	20	UB	40	*KDK	73
WN	20	UY	40	HM	75
ARA	20	*NON	41	OT	76
FA	21	TC	43	*NPA	78
DV	21	ADC	47	*NAI	80
DF	22	*NMH	48	*ZJA	83
*KCI	24	DZ	48	*NOS	83
*PRM	24	*NWB	49	*NTX	84
*NIZ	25	VU	50	AFZ	85
ML	25	EG	50	AAS	85
*ZBF	27	RY	50	*NOJ	86
ZE	27	FM	50	*NGH	91

AMY	125	SU	260	ATW	527
AVR	125	ST	262	TZ	529
AFY	127	ARZ	267	AYD	537
GL	133	BP	280	JM	540
UU	134	EV	282	AGO	545
ZB	140	DK	284	AGW	545
*NLC	140	*KJR	287	FK	585
ZQ	141	FT	291	ADO	611
LO	142	XC	301	ASA	648
EA	143	RV	307	BW	689
OF	144	AGP	307	ATA	706
*NCH	150	AZY	328	FF	744
AKS	150	UW	335	GR	763
IF	153	AAC	339	NX	792
OZ	154	*NOD	343	*ZRO	814
FO	156	SN	347	QX	1200
YJ	156	*KTY	351		

VK5 CLUBS

BXG	106
KR	495
TOTAL SCORE	46518
Full Call Logs	200
Total Logs	274

VK6 CW/RTTY

HA	34
----	----

VK6 PHONE

5GF/8	12	NTT	65	KRD	505
5BS/8	26	DH	284		

VK6 CLUB

DA	353
TOTAL SCORE	1279
Total Logs	7
Full Call Logs	5

VK6/8 LISTENERS

R. Wilford	877
L50083 (J. Zinkler)	373
L50012	49
TOTAL SCORE VK6/8	49096
Total Logs	285
Full Call Logs	208

VK6 CW/RTTY

KB	24	RU	70	RS	140
FS	28	GA	72	MM	363
ABR	28	HX	88	HO	432
FC	30	JS	88	WT	434
*NRU	48	RZ	98		
AJ	80	NY	112		

VK6 PHONE

*NHZ	12	*NRJ	12	ZY	14
KH	12	HK	12	UV	15

LV	69	HU	249
SH	69	TO	243
XT	70	*ZHR	251
*ZHU	71	*ZSE	261
*ZLO	71	AJW	276
*NGU	72	RO	279
ABM	73	IM	285
YE	75	*NLZ	289
*NOK	78	JS	291
EO	80	GW	293
*NPL	81	*NYL	298
LP	84	ABR	299
AN	87	ST	304
EE	91	KB	307
*KBD	92	GL	309
RZ	100	BE	343
WZ	104	DY	349
CF	106	NK	357
UH	107	ML	358
*KGE	110	UT	381
PO	113	*ZLT	396
*NGX	117	OM	403
HO	119	AO	423
DV	120	FC	406
QK	120	WI	438
XX	120	UN	439
*KVK	121	AWI	439
SO	121	AD	442
*NLE	125	*NLD	454
*KBZ	128	*ZCK	475
OR	148	WIA	482
WL	148	*ZMG	488
*ZGK	148	AB	495
ZZ	149	WH	509
*NTZ	150	MS	514
OB	150	*ZGA	520
YS	151	FS	558
TX	151	KY	601
WT	157	KG	625
WB	160	YF	651
GO	162	PD	670
SM	172	JP	685
ZT	56	CR	175
*NRU	59	*NEP	201
RU	65	RF	202
CU	66	ZF	221
VI	69	*NWA	231

VK6 CLUBS

TP	39	VF	511	MN	575
SAA	249	OR	560	ANW	740

VK6 LISTENERS

L60036	589
L60205	247
L60280	36

TOTAL SCORE 33382
Total Logs 170
Full Call Logs 131

VK7 CW/RTTY

EA	22	PA	36	*NSA	98
AL	24	*NBF	36	ZO	110
CM	28	*ZJH	44	CH	322
*ZTA	30	RO	52	RO	446
RM	32	ZZ	86		

VK7 PHONE

RO	10	*ZLD	60	MM	112
*NFR	12	*NTM	60	DK	115
*NAK	13	PL	61	PA	117
*NIW	13	MX	68	*NOB	117
*NPY/		BM	70	*NHA	123
ZPY	15	*NIK	76	*ZJG	125
LE	15	*ZKT	79	LD	125
EM	17	HK	80	*KEY	126
*ZGP	18	JM	81	WP	126
SB	20	*KTN	89	FH	132
KS	21	GF	94	PF	139
BH	21	LZ	95	VV	150
YY	24	*NKV	98	*ZAT	154
TT	25	*NJX	97	BO	157
BJ	30	FR	98	*NIH	166
DG	30	EA	101	AL	168
*NPR	50	*KKK	101	*ZLB	169
DP	50	SF	102	XL	186
*NBF	53	ZZ	104	*NCL	191
GS	55	MF	107	HL	201
*NRG	56	SU	110	JU	201
KH	56	GB	111	RM	203

*NNV	203	FT	250	NXB	395
*ZJH	215	*ZGA	250	GE	416
*ZTA	218	*NPK	263	KZ	547
*KGG	219	*ZEN	265	*KXX	550
PV	231	JV	269	VH	594
WZ	231	HD	282	KC	607
LJ	234	FL	302	UW	721
*NRD	237	*ZPK	320	PC	778
*NWR	240	RR	391		
*ZOT	246	*ZSC/			

VK7 CLUB
NW 678

VK0
HW 394

VK7/0 LISTENERS
G. Mutton 210
L70217 112

TOTAL SCORE 18081
Total Logs 110
Full Call Logs 69

P29 PHONE
CH 154

P29 CLUB
LS 1233

TOTAL SCORE 1367
Total Logs 2

ZL CW
1GQ 414

ZL PHONE					
3TX	11	1AGO	71	2GT	270
4IJ	27	1GO	240	1AFK	276

TOTAL SCORE 1309
Total Logs 8

CHECK LOGS
VK5TL, VK5LC, ZL2BDC, VK2DMW/ZL2BUV, VK3CO, VK5IX.

WIA SUBSCRIPTIONS 1982

If you joined this year and paid the full year subscription at that time, part will be a pro rata for this year and the remainder will be shown in the computer as a pro rata credit for 1982.

Your 1982 subscription will therefore be only the difference between the full twelve month rate for the year LESS the pro rata credit carried forward from 1981. This takes you through to 31st December, 1982, so that in subsequent years you will always be on a 1st January to 31st December basis like everyone else. Normally such a credit carried forward applies to new members.

If you have only a small amount to pay please pay it as early as you can in case something unusual occurs in the computer readout and an unfinancial status after February suppresses your AR address label.

CONTESTS

Reg Dwyer VK1BR
PO Box 236, Jamison 2614

Well we are now into the new year and all the festivities are over for another year. Let's hope that this year is most enjoyable for all amateurs. Let me extend my best wishes to you all.

CONTEST CALENDAR

January

10 Ross Hull VHF Contest AR 10/81
9 73 40m Phone
16/17 73 160m Phone
23/24 White Rose SWL Contest
29/31 CQ WW 160m CW

February

6/7 John Moyle Field Day
6 and 24 hr. AR 12/81
13/14 Dutch PACC Contest
13/14 NZART National Field Day
26/28 CQ WW 160m Phone
27/28 French Phone
27/28 RSGB 7 MHz CW

March

13/14 QCWA Phone QSO Party
27/28 CQ WW WPX SSB
Exchanges and rules

THE 1982 FRENCH CONTEST CW

January 30th, 0600 UTC to 31st, 1800 UTC.

PHONE

February 27th, 0600 UTC to 28th, 1800 UTC.

Classes:

Mono-operator or multi-operator. Mono-operators have only 26 hours to operate.

Valuable OSO:

Only with French-speaking countries stations, using following prefixes: C3, CN, D6, DA1/2, F, FC, FB8, FG, FH, FK, FM, FO, FP, FR, FW, FY, HB, HH, J2, LX, OD, ON, TJ, TL, TN, TR, TT, TU, TY, TZ, VE2, XT, YJ, 3A, 3B, 3V, 4U (ITU), 5R, 5T, 5U, 5V, 6W, 7X, 9Q, 9U, 9X.

Reports:

RS/RST plus QSO serial number (starting at 001).

Points:

Each valuable QSO = one point.

Multippliers:

According to the DUF and DNF awards countries list, one point for each of:—

96 French departments, 29 French overseas departments or territories, 25 DUF other countries, 9 Belgian provinces and DA2/FBA, 14 DNF countries.

Final Scoring:

Sum of points for QSO, all bands, multiplied by total of 5 (multipliers points), all bands.

Contest Awards:

Certificates to highest scorer in each class, in each country (minimum scoring: 100 QSO).

Logs:

With summary sheet, available at REF HQ against SAE + IRC. The summary sheet is used for multipliers details.

The REF traffic manager is Bernard

Francillon F6BDN (F8TM is now honorary director).

Mailing Address:

REF French Contest,
Square Trudaine 2 75009,
Paris, France.

Please Note:

The national QSL service is:—
REF QSL Square Trudaine 2
75009, Paris, France.

WICEN

R. G. HENDERSON VK1RH,
Federal WICEN Co-ordinator

The Natural Disasters Organisation, responsible for co-ordination of Commonwealth support in natural disasters, has had a major change of staff this year. Several of the senior military appointments have changed, namely the replacement of Rear-Admiral Rothesay Swan by Major-General Ken Latchford as Director-General. Several of the public service staff officers, including WICEN's two principal contacts, the executive officers training and communications, have left NDO.

As a consequence of these major changes the annual NDO exercise, when the National Emergency Operations Centre (NEOC) is involved in a command post exercise (CPX), took place totally in house this year. What actually happened was the 1980 exercise, which involved WA SES for simulated cyclone and earthquake input, was repeated in Canberra using the messages prepared and retained from 1980. Consequently there was no requirement for a WICEN network, the first time for several years.

No doubt NDO's in house experience has been regained and we can expect amateur radio involvement in next year's exercise.

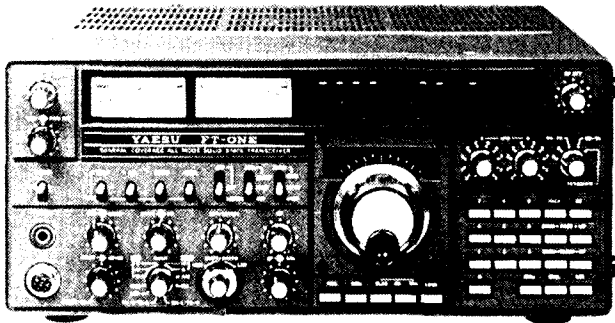
For those interested in civil defence, have you read the September 1981 issue of Pacific Defence Reporter? Deputy Federal Co-ordinator Ray Roche VK1ZJR/4 reports that their analysis makes several references to effective communications and highlights deficiencies in the present system.

Finally, an early warning, by the time you read this the WIA Federal Convention will only be a few months away. Are there any WICEN matters you wish to raise, either via me as Federal Co-ordinator or through your State WICEN Committee and Divisional Federal Councillor?

15,000 licensed amateurs in a population of 15,000,000 is a tiny percentage. One strong voice, the Wireless Institute of Australia, carries weight — much more weight if all amateurs join as members.



YAESU — NEW SUPER TRANSCEIVER FT-ONE



This state-of-the art transceiver has a whole range of features for the discerning amateur.

CPU controlled — General coverage receiver 150 KHz — 29-99 mHz — 100 watts output. — SSB, CW, AM, FSK, FM (optional) modes — Wide dynamic receiving range of more than 95dB — IF Shift — 22 poles of crystal filtering — 10 VFOs allowing split frequency operation

Full break-in feature for CW operators — AC or DC operation — VOX, Speech Processor, AMGC, variable threshold NB, Audio Peak, Notch Filters — Weight approximately 17 kg — Dimensions 370(W) x 157(H) x 350(D) mm



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 VK3BSR

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- VK2 Mr. T. I. Mills VK2ZTM
- VK3 Mr. A. R. Noble VK3BBM
- VK4 Mr. A. R. F. McDonald VK4TE
- VK5 Mrs. Jennifer Warington VK5ANW
- VK6 Mr. N. R. Penfold VK6NE
- VK7 Mr. P. Fudge VK7BO

Staff: Mr. P. B. Dodd VK3CIF, Secretary.
 Part-time: Col. C. W. Perry, Mrs. Ann McCurdy.
 Mr. Bill Baly (AR Production).

Executive Office: 3/105 Hawthorn Rd., Caulfield North, Vic. 3161. Ph. (03) 528 5962.

Divisional Information (all broadcasts are on Sundays unless otherwise stated).

ACT:

President — Mr. W. R. Maxwell VK1MX
 Secretary — Mr. C. T. Vidler VK1KV
 Broadcasts— 3570 kHz and 2m Ch. 6 (or 7): 10.00Z.

NSW:

President — Mr. A. D. Tilley VK2BAD
 Secretary — Ms. S. J. Brown VK2BSB
 Broadcasts— 1100 and 1930 local time. Frequencies bracketed at 1100 only.
 1.8125 — Ncle relay, 1.825 — Sydney relay, 3.595 (7.146), 28.32, 52.12, 52.525, 144.12 MHz. Repeater Ch. 6650 Oberon (6700 Orange), 6750 Gosford (6800 Lismore), 6850 Wollongong, 7000 Sydney, 8525 Sydney.

VIC.:

President — Mr. P. R. Drury VK3JM
 Secretary — Mr. D. X. Clarke VK3DES
 Broadcasts— 1840, 3600, 7135 kHz — 53.032 AM, 144.2 USB and 2m Ch. 2 (5) repeater: 10.30 local time.
 Gen. Mtg. — 2nd Wed., 20.00.

QLD.:

President — Mr. D. Laurle VK4DT
 Secretary — Mr. F. J. Saunders VK4AFJ.
 Broadcasts— 1.825, 3.580, 7.120, 14.342, 21.175, 28.400, Rpl. Ch. 6700 and 7000 Sundays from 0900Z (Sat. 2300 UTC).
 Re-broadcasts— Mondays 3.605 from 1930Z, Mondays 80 or 20m RTTY segment from 200Z.

SA:

President — Mr. J. B. Mitchell VK5JM
 Secretary — Mr. W. M. Wardrop VK5AWM
 Broadcasts— 1820, 3550, 7095, 14175 kHz; 21.195 28.400 and 53.1 MHz. 2m (Ch. 8) 09.00 S.A.T.
 Gen. Mtg. — 4th Tuesday, 19.30.

WA:

President — Mr. B. Hedland Thomas VK600
 Secretary — Mr. F. Parsonage VK6PF
 Broadcasts— 3560, 7075, 14100, 14175 kHz. 28.47, 53.1 MHz. 2 metres Ch. 2 Perth, Ch. 6 Wagln. Time 0130Z.
 Gen. Mtg. — 3rd Tuesday.

TAS.:

President — Mr. I. F. Ling VK7XL
 Secretary — Mr. P. Clark VK7PC
 Broadcasts— 7130 (SSB) kHz with relays on 6 and 2m Ch. 2 (S), Ch. 8 (N), Ch. 3 (NW), 09.30 EST

NT:

President — Mr. T. A. Hine VK8NTA
 Vice-Pres. — Barry Burns VK8DI
 Secretary — Robert Milliken VK8NRM
 Broadcasts— Relay of VK5WI on 3.555 MHz and on 146.5 MHz at 2330Z. Slow morse transmission by VK8HA on 3.555 MHz at 1000Z almost every day.

Postal Information:

- VK1 — P.O. Box 46, Canberra, 2600.
- VK2 — 14 Atchison St., Crows Nest, 2065 (Ph. (02) 43 5795 Mon, Tues & Thurs 9.45-13.45h). P.O. Box 123, St. Leonards, NSW 2065.
- VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03) 417 3535 Weekdays 10.00-15.00h).
- VK4 — G.P.O. Box 638, Brisbane, 4001.
- VK5 — G.P.O. Box 1234, Adelaide, 5001 — HQ at West Thebarton Rd., Thebarton.
- VK6 — G.P.O. Box 10, W. Perth, 6005.
- VK7 — P.O. Box 1010, Launceston, 7250.
- VK8 — (Incl. with VK5), Darwin AR Club, P.O. Box 37317, Winnellie, N.T., 5789.

Slow morse transmissions — most week-day evenings about 09.30Z onwards around 3550 kHz.

VK QSL BUREAUX

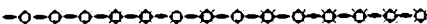
The following is the official list of VK QSL Bureaux, all are Inwards and outwards unless otherwise stated

- VK1 — QSL Officer, G.P.O. Box 46, Canberra, A.C.T. 2600.
- VK2 — OSL Bureau, P.O. Box 73, Teralba, 2284.
- VK3 — Inwards QSL Bureau, Mrs. B. Gray VK3BYK, 1 Amery Street, Ashburton, Vic. 3147.
- VK3 — Outwards QSL Bureau, C/o 412 Brunswick Street, Fitzroy 3065.
- VK4 — QSL Officer, G.P.O. Box 638, Brisbane, Qld., 4001
- VK5 — QSL Bureau, Mr. Ray Dobson VK5DI, 16 Howden Road, Fulham, S.A. 5024.
- VK8 — QSL Bureau, Mr. J. Rumble VK6RU, G.P.O. Box F319, Perth, W.A. 6001.
- VK7 — QSL Bureau, G.P.O. Box 371D, Hobart, Tas. 7001.
- VK8 — QSL Bureau, C/- VK8HA, P.O. Box 1418, Darwin, N.T. 5794.
- VK9, 0 — Federal QSL Bureau, Mr. N. R. Penfold VK3NE, 388 Huntriss Rd., Woodlands, W.A. 6018.

NOVICE NOTES



Edited by Ron Cook VK3AFW



Welcome to Novice Notes for 1982; may this year bring you many enjoyable hours with amateur radio activities.



In these days of 12V equipment some of us may be developing an unhealthy contempt for our power supply wiring. Neglecting motor vehicles and the like, death by electrocution is perhaps the most frequent form of all non-natural deaths. Certainly such deaths outnumber those by drowning or skirmishes with wild beasts, sharks and snakes. Yet if we knew that a large tiger snake dwelt in the transceiver power supply wouldn't we be very, very much more careful when changing a fuse, etc.?

Yes this month I am going to talk about the 50 Hz 240V AC mains supply and the ham shack.

The usual supply consists of three wires. There is the active wire or conductor and the neutral conductor. These two wires come to our shack from a step-down transformer located on a pole in the street (in most cases). Two wires are of course necessary to allow normal current flow. The first stop for these wires is the householder's switchboard. On this are mounted a main off/on switch and fuses as well as a watt-hour meter. There may be a time-switch and watt-hour meter for the off-peak hot water service as well.

The location of the main switch should be known by all members of your family so that in an emergency it can be used to isolate the household wiring. See Fig. 1.

On the switchboard there is also a brass bar, known as the neutral bar. The neutral conductors and a main earth connection are bonded together by this bar. Other neutral and earth wires are also connected here.

As a means of protecting each circuit from a continuous overload a fuse is placed in each active lead. The size of the fuse is determined by the type of circuit it is protecting. The Australian Standard for

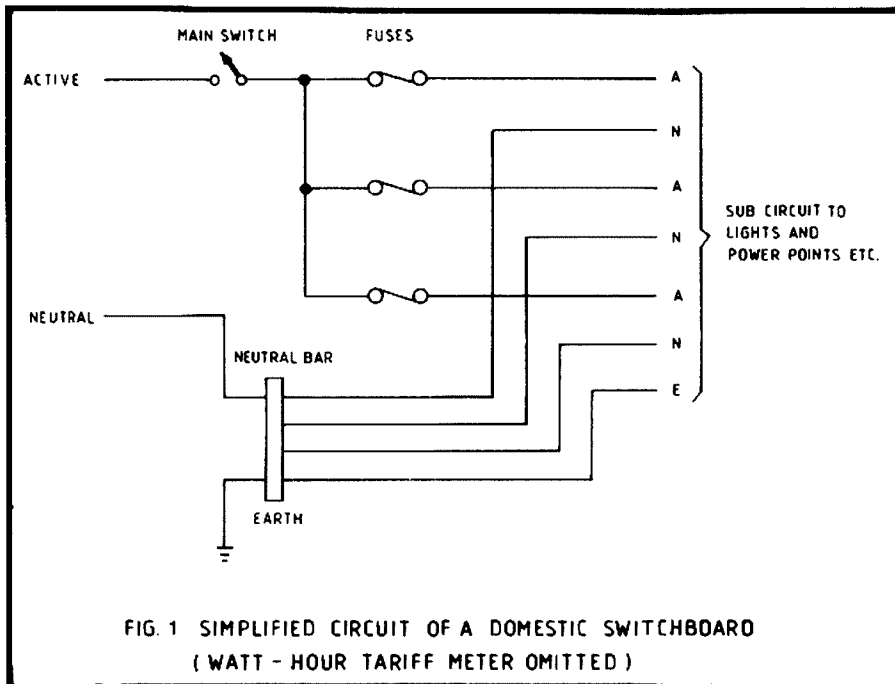


FIG. 1 SIMPLIFIED CIRCUIT OF A DOMESTIC SWITCHBOARD (WATT - HOUR TARIFF METER OMITTED)

electrical wiring AS 3000 prescribes the size fuse to be used under different conditions. Never replace a fuse or fuse wire with anything other than the rated type. For recent wiring Table 1 shows some typical ratings. In 1960 5A fuses were used for lighting circuits and 10A for power circuits. This changed to 8a or 10A and 15A respectively in 1961.

A fuse consists of an insulated holder and a short length of wire which melts when excess current flows through it. A fuse will carry its rated current indefinitely but will melt or "blow" if this is exceeded. The greater the overload the quicker the fuse melts. Thus the active and neutral conductors do not get excessively hot and cause a fire or other undesirable situations if for some reason an overload occurs.

The fuse in our transceiver is to prevent massive damage if a minor fault causes excessive current to be drawn. The fuse in the switchboard protects the house wiring (and the house). Under no circumstances use anything other than the correct rated fuses for replacement purposes. All house wiring must be done by a licensed electrician.

The active wire, which is fused, is at

240V with respect to the neutral which is nominally at ground potential. In the house wiring the insulation around the neutral conductor is coloured black and that around the active is usually red, although any colour other than black, green, yellow or green and yellow combined may be used.

When the house wiring reaches a general purpose outlet or "power point" we have, for convenience, a switch. This switch must break the active lead.

To connect to our equipment we should use a three wire flexible cable with a three pin plug. It must be wired as shown in Fig. 2. The correct connection of the earth connection is most important.

If the active and earth are interchanged your first attempt to connect the antenna may be your last. Once properly connected any fault, such as a breakdown of transformer insulation, which would try to make the chassis live will cause the fuse to blow and alert us to the possibility of a dangerous fault.

Some sporadic failure of fuses does occur but if the replacement fuse blows then pull the mains lead from the power point and start looking for a fault.

Sub-circuit Conductor Cross-section Area mm ²	Protective Fuse Rating A	Maximum Circuit Load kW	Domestic Application
1.0	8	1.92	Lighting only, up to 10 lamps
1.5	12	2.88	Lighting only, up to 10 lamps
2.5	16	3.84	Up to 15 lighting or GPO points or one 15A plug socket

TABLE 1: Fuse ratings for various conductor sizes for domestic installations with several circuits for both lights and General Purpose Outlets (GPOs). Source AS 3000 — 1981.

MAGAZINE REVIEW

Roy Hartkopf VK3AOH

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

ZERO BEAT September 1981
(Youth Radio Clubs' Scheme Magazine.)
AOCPS Statistics (G). Instructional Ideas Department (N).

BREAK IN August 1981
Low Voltage DC Power Supplies (G.P.).
Feeder Matching Unit (P).

RADIO COMMUNICATION October 1981
Vehicle Interference Suppression (P). 400 MHz Signal Source (C).

73 MAGAZINE October 1981
Contest Issue. Propagation (T.G.). TTL Keyer (P). Audio Function Generator (P).

CQ-TV 115 August 1981
Mobile (Low Drop) Regulator (P). 70 cm Linears (P). Colour Mixer (P).

CQ September 1981
Contest Issue.

INTRUDER WATCH

NEWS FROM PAO LAND

From "Electron", official journal of VERON, November 1981 issue. Translation VK4QA. Have you logged the latest intruder on our 40 metre band yet? It is the transmitter calling itself "The European Amateur Radio Revolution Committee". And it is a peculiar type of intruder. The tape recordings broadcast by this station appears to originate from a very powerful transmitter beaming to, and operating on, 7.065 MHz, the exact frequency of *Radio Tirana*.

Just as Radio Tirana is an intruder, so is the other transmitter, and both stations are operating against ITU regulations.

However, the new intruder will receive much sympathy from the radio amateur fraternity. Despite the numerous regulations and agreements, Radio Tirana continues to make life unbearable on the exclusive amateur portion of the 40 metre band. It appears that nobody can solve that thorny problem.

However, a suggestion was made to post "en masse" exceptional bad listeners' reports to Radio Tirana. And if each report is accompanied by a protest against "frequency imperialism in the radio amateur band", who knows, something may eventually happen.

If you have let your WIA membership lapse in the past year or two, why not seek reinstatement now — just look at what you are missing.

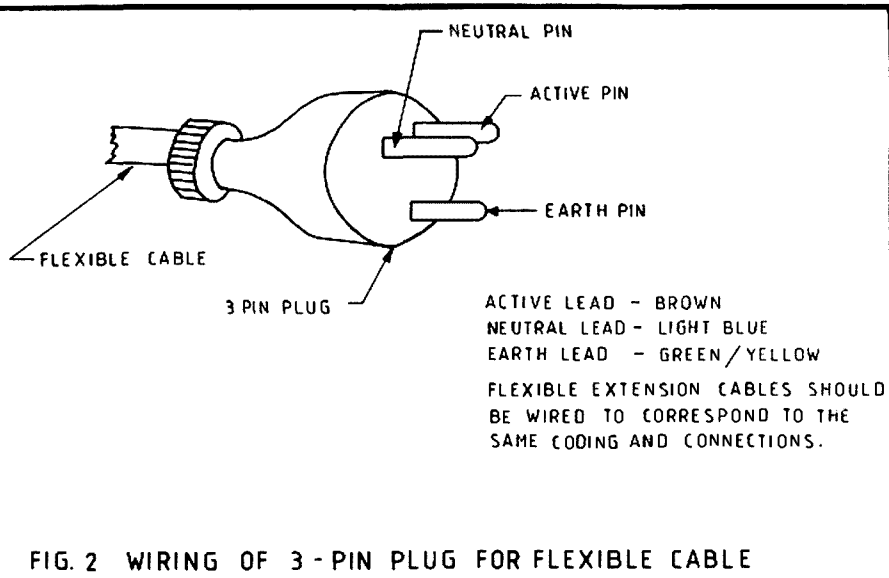


FIG. 2 WIRING OF 3-PIN PLUG FOR FLEXIBLE CABLE

Now the neutral conductor carries the same current as the active under normal domestic conditions so, due to the ohmic volt drop, it may not be at earth potential. It should not be used as an earth return and should not be connected to ground or chassis in any equipment.

The earth wire carries current only when there is a fault. It must be capable of carrying the fault current and thus causing the protective fuse to blow. The usual method of providing a low resistance earth is to connect a heavy conductor to the cold water piping system. Sometimes a 20 mm pipe is driven 1.2 metres or more into the ground to provide the earth. The resistance of the earth electrode arrangement should typically not exceed 3 ohms for an installation with no fuse larger than 15A.

If the exposed metal parts of any appliance becomes "live" then there exists an electrocution hazard. The danger arises from the possibility of simultaneous contact between the live part and ground by a person. A correctly wired ground system prevents such a hazard.

It would be wise to use only one easily accessible power point for operating all equipment in the shack. A distribution board with several switched outlets could be run from this master outlet. Again all members of the family should know the position of this switch and be prepared to switch it off just in case they discover you being severely bitten by the 50 Hz demon snake.

One of the most common causes of electrical fatalities is the incorrectly wired extension cable. Transposition of active and neutral can be dangerous, but is not obvious — equipment at the other end still runs. Even the very dangerous earth transposition can go unnoticed in some cases. Why not check out your extension cables today?

An inexpensive three lamp tester can be purchased from most electrical/electronic stores. It comes with instructions for testing all your power points and extension cables.

Some installations may use circuit-breakers instead of fuses. For this type of application the circuit is broken (the circuit-breaker opens a set of contacts in series with the active conductor) when the line current exceeds a safe level. The circuit-breaker can be reset (the contacts re-closed) after an overload by pressing a lever or a button.

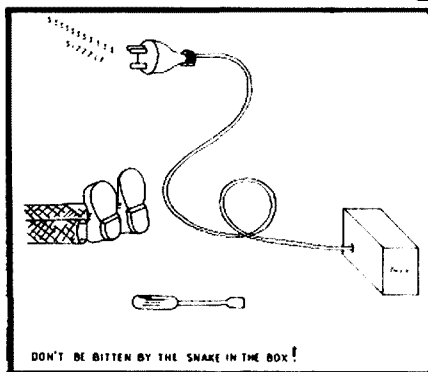
Most circuit-breakers use a small low-valued resistor in series with the circuit to heat a bi-metallic trip lever. When the current is large enough the trip lever operates and allows a spring to open the contacts quickly.

There are also circuit-breakers which are fully solid-state and some which use a coil and the resulting magnetic force to trip the contact opening mechanism.

Circuit-breakers can be very fast acting and are more convenient than a fuse, especially in industrial environments where temporary overloads are frequent. Of course circuit-breakers cost more than fuses.

I hope this helps you in understanding the general safety aspects to be followed for 240V in the shack. Don't get bitten by the snake in your box!

73. VK3AFW.



SUPPORT OUR ADVERTISERS!

ALARA

AUSTRALIAN LADIES' AMATEUR RADIO
ASSOCIATION

Our first meeting of ALARA held on a national level on Monday, 26th October, was an outstanding success, with 21 girls calling in. VK2, 3, 4, 5, 6 and 7 were all represented. This was most heartening for the executive committee and shows the interest in ALARA's continuation. So thanks to the girls who joined in and look forward to meeting again next month.

The sub-committee to sort out the constitution meets on Thursday on air and is progressing well. Some of our recommendations were discussed at our meeting and voted on accordingly. Full details will appear in the Newsletter for comments from members.

Subscriptions for ALARA are now due on 1st January each year. VK subs.: \$5.00 yearly; Overseas \$3.00 sea mail; \$6.00 air-mail.

YL NETS

ALARA Mondays 1030Z (0930Z daylight saving time), 3.570 MHz.

Meeting: 4th Monday, as above.

"220" DX-YL net Monday 0630Z on 14.220 MHz.

Open House: Tuesday, Thursday, 1000-1200Z on 14.332 MHz, look for Gill VK6YL.

Midweek Net: Wednesday 0430Z on 28.470 and look for Daphne VK2KDX.

15m Net: Friday 0400Z on 21.188 and look for Bev VK6NYL.

VE/VK/ZL Net: Friday 0500Z on 14.160 MHz and 2300Z on 28.450 MHz.

Next month I will give details of our contest and some of the results. As I write this it is still four days to the contest.

Do hope all readers had an enjoyable Christmas and festive season; to all travellers drive safely and enjoy your holidays, don't become a statistic.

Until next month take care.

73/33. Margaret VK3DML. ■

INTERNATIONAL NEWS

New Zealanders have been granted the use of FSK (F1) on the 10 metre band from 28.0 to 29.7 MHz instead of from 28.0-28.1 MHz. The maximum occupied bandwidth has been altered to 3 kHz. (Break-In September 1981.)

At the joint DOC/WIA meeting on 28th October last it was reported that the Department was negotiating for reciprocal licensing agreements with the Administrations in Japan, West Germany, France (and New Caledonia), Greece, Denmark, Netherlands and Costa Rica. The Institute had also applied for a third party agreement to be negotiated with Brazil (vide Sydney-Rio Yacht Race next March in particular) in addition to the USA and PNG (particularly bearing in mind the need for this in natural disasters and emergencies affecting PNG). ■

JAPANESE AMATEUR VISITS AUSTRALIA

Bill Martin VK2PFFH
33 Somerville Rd., Hornsby Heights, NSW 2077

Recently I had the great pleasure of meeting Katsushi Ono (Katsu) JH7OHF on his visit to Australia. Katsu came to Australia for the express purpose of learning English at a private school and to meet some Australian amateurs.

Katsu currently holds the Australian "guest" call of VK2PJJ and whilst in his homeland holds a class 2 licence.

Katsu came to Australia in late February 1981 and intends to return to Japan about January 1982. He has been an amateur for about seven years, having obtained his licence whilst in Junior High School in Japan. Katsu is a member of his local radio club and also a member of his university radio club, where he is studying International Law. His university is Chuo, in Tokyo. Whilst resident in Australia Katsu became a member of the WIA and is, of course, a member of the JARL.

Katsu's radio equipment includes a Yaesu FT901 and he was very active on 40 and 80 metres before coming to Australia. Katsu has his home QTH at Toda-gun, Miyagi Prefecture, and operates from there both on CW and SSB.

Recently Katsu was a visitor to my shack, and I think he took great delight in listening to my poor version of the Japanese language whilst I was working into Japan on 15 metres. However, he was very nice about it, and I was not at all put out when he commandeered the microphone and showed me how to really talk to the Japanese in their own language. That was probably the best Japanese that will ever emanate from this shack! The Japanese stations at the other end were delighted to converse in their own language with Katsu, and I suspect that Katsu enjoyed the experience.

My impression of my first face-to-face meeting with a Japanese amateur was very favourable indeed, and Katsu is a great ambassador for his country, as well as a great ambassador for the hobby of amateur radio. I'm sure you will join with me in wishing Katsu well in his studies, and I personally wish him good luck and "Good DX".

Bill Martin ■



Pictured l. to r.: Bill VK2PFFH and Katsu JH7OHF (VK2PJJ) in Bill's shack.



Taken at final meeting of ALARA in Melbourne, on 3rd October, 1981.

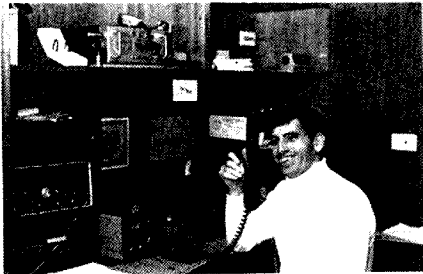
L-R Back Row: Irma VK3VCF, Valda VK3DVT, Maggie VK3NQQ, Mavis VK3KS, Margaret VK3DML.

L-R Front (seated): Geraldine VK2NQI, Raedi YF/VK3BHL, Mavis VK3BIR.

SPOTLIGHT ON SWLing

Robin Harwood VK7RH

5 Helen St., Launceston, Tasmania 7250



With the commencement of another year, there are several promising developments on the horizon. Already we have obtained an expansion on the 40 metre allocation from 7150 to 7300 kHz, with exactly the same conditions that already apply to operation between 7100 and 7150, that being a shared allocation with broadcasting services. This will allow us to work stateside stations on their frequencies, no longer having the necessity of working split frequencies.

We are reported to be able to utilize the WARC allocation on 10 MHz, as from January 1st. Amateurs are the secondary service, fixed stations having first priority on the frequency. As the allocation is only from 10100 to 10150 kHz, I do predict that it will be extremely difficult finding a clear channel during the peak times. There are at present a multiplicity of services already occupying these channels. It is worth noting that other administration, when releasing the WARC band to the amateur service, have in many cases restricted the operating mode to A1 or F1. Some have also imposed power ceilings.

I believe, as well, the 27 MHz CB channel allocations within Australia have been increased from 18 to 40 channels, as in America. This has been taken to ease the congestion on the existing channels, particularly in metropolitan areas. This will also decrease the illegal operation by CB pirates at present using these channels.

There hasn't been any increase in the 476 MHz UHF CB band. However, I believe that the Department of Communications has released a set of guidelines for UHF CB repeater operation. It is also interesting to note that the British CB Service commenced in early November. Open Channel Radio, as it is titled by the British Home Office, is on 900 MHz on FM. The majority of the CB pirates within the UK are, of course, on 27 MHz, and are rather scathing in their comments on the UHF service, pressing for the legalisation of 27 MHz. Sound familiar?

More information has come to hand about the recent experimental transmissions of computer data programmes via shortwave radio. You remember that Radio Netherlands conducted this unique experi-

ment on September 10th. They tried three of the most popular home computers on the market — APPLE, Tandy TRS-80 and PET Commodore. Written in BASIC, a simple direction and bearing programme was devised. It had to be recorded in three different versions because of the variation in cassette interfaces. All transmissions were sent on the standard AM system regularly used by the international broadcasters. They were recorded at 0 dB to ensure that, at the time of transmission, they could obtain almost 100 per cent level of modulation as is possible. There was a marked difference in levels obtained between the two relay bases in Bonaire and Madagascar and the transmitters located within the Netherlands. The latter is only able to produce 70 per cent because of the age of the transmitters, yet strangely enough the only one able to provide data readout.

Over 235 listeners responded to Radio Netherlands with feedback on the transmissions. Forty-two per cent of those responding were successful in copying a perfect or near perfect programme on their computer. The APPLE system was a complete write off, due to noise wiping the entire data. Those with direct connections between receiver and recorder were able to obtain satisfactory copies. Ten per cent of the respondents, after the failure at the first attempt, were successful after re-recording the programme on to a second machine. Raising the level on the re-recording also resulted in acceptable copy.

The bandwidth setting of the receiver was critical, as those who used settings lower than 5 kHz found out, including your scribe. So many listeners with average or modest equipment with wide selectivity were apparently successful. There was also an incompatibility problem experienced by some users. Those with the TRS-80 were not told that it was for Model 1, Level 11, yet this system had the highest rate of success of the three used. It is also interesting that 82 per cent of those successful were from Europe, yet the North American region has the highest number of computers per capita.

From the results of the observations, computer data transmissions via short wave radio seems a practical possibility, as the utilization of PTP and the more efficient SSB circuits for computer data transfer is well known. However, this transmission intended for a mass audience indicates it is a viable experiment worth further investigation. Accordingly, Radio Netherlands has scheduled another computer data transfer programme on the 28th of January, 1982. It will be on the Media Network programme, and those in the Pacific region can hear it at 0750 GMT on 9770 and 9715, repeated at 0850 on 9715 kHz. Those in WA might try the 1350 GMT transmissions on 17065 kHz. Systems to be used will be the Sinclair ZX-81, TRS-80 Model 1,fi Level 11, PET, and possibly the ATARI.

One problem faced by computer users is the incompatibility between the differing systems. Faced with this, enthusiasts in the Netherlands have developed an "Esperan-

to" of universal language for computers. This consists of a 1200 baud code consisting of two tones, at 1200 Hz and the other at 2400 Hz. To be able to decode the transmitted programmes, many computers (such as APPLE or Philips) simply need a copy of the translation programme. This is provided for a small charge to enthusiasts within the Netherlands. Other systems such as the TRS-80 only require the addition of a small amount of electronics costing \$US40 approximately.

Since the failure of the APPLE system on short wave, Radio Netherlands see the application of this code for international use. They plan to transmit this basic code known as the "Hobbyscope" system on the January 28th session, and evaluate its effectiveness from special monitors from among the panel of APPLE users from the first transmission in September. Incidentally, "Hobbyscope" happens to be the name of a weekly programme for computer enthusiasts in Netherlands and broadcast over one of the domestic networks AM or FM channels, complete with data transfer.

Already experimental transmissions on amateur frequencies, using this code on both AM and SSB, indicate successful exchanges. The use of the sync pulse within the code does ensure minimal disruption during disturbed conditions. Mixing of data obtained from repeat transmissions is also possible. If this code works, it could mean a universal interface for mass communication of computer data. My grateful thanks to Jonathon Marks and Media Network at Radio Netherlands for making the above information available to me.

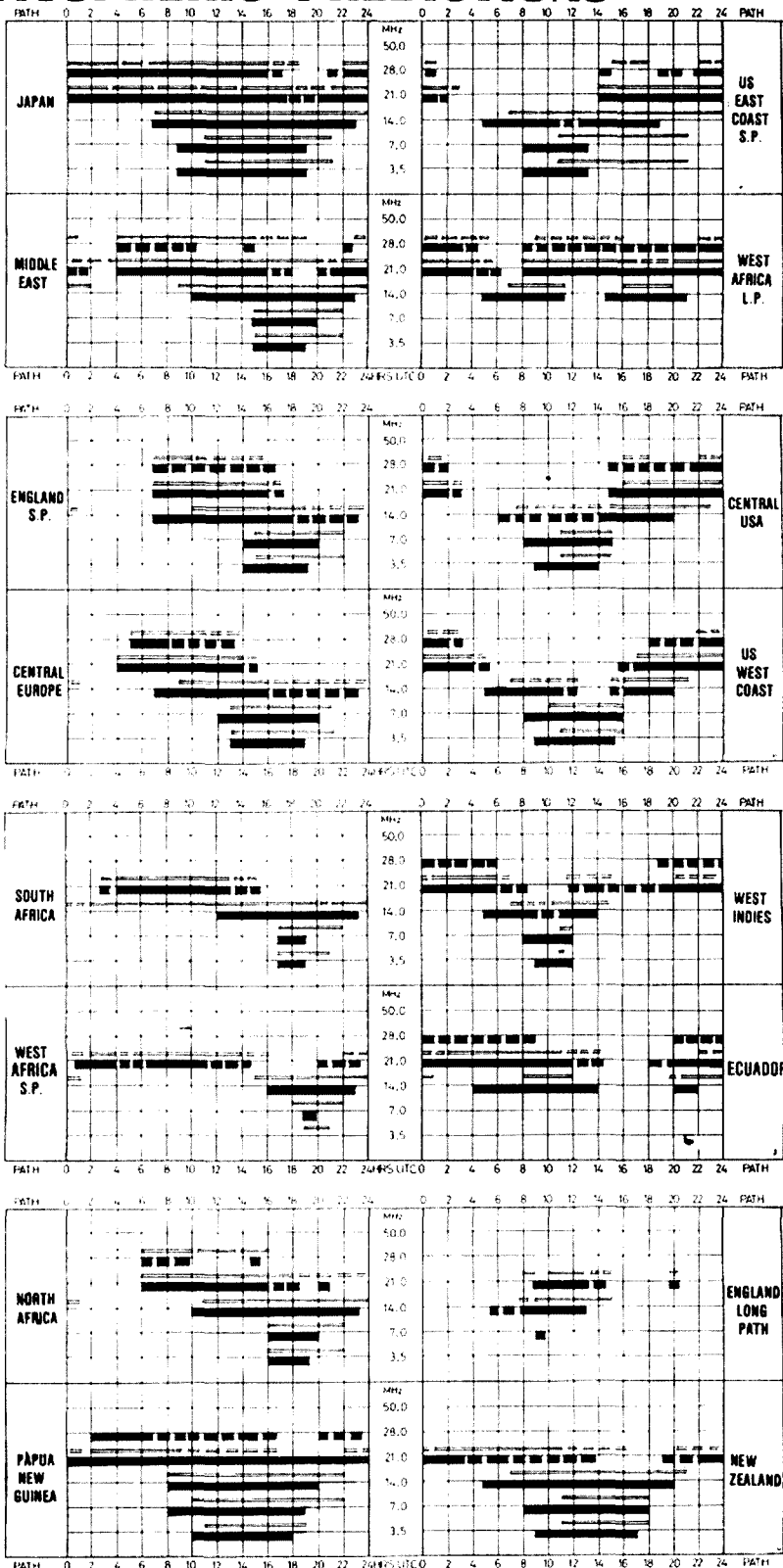
Another interesting part of the hobby to SWLs is the copying of radioteletype (RTTY) signals on to video. As numerous stations are using RTTY, there is no shortage of copy to be read. Of course different users employ a variety of shifts and speeds. Hams have a narrow shift on 170 Hz, while the majority of press and commercial systems are 425 Hz and some 850 Hz. Many FSK intruders within the Ham bands either used 500 or 1000 Hz, indicating they are either Soviet stations or using equipment coming from that region. Many RTTY to video converters have been released recently. One only requires an audio input from a short wave receiver, 12 volt supply and a TV fitted with UHF capabilities. It has automatic sensing of speed and shift variations. It contains two microprocessors and 19 ICs and costs £150 sterling approximately.

By the time this goes to press we could have another three amateur satellites in orbit. The USSR is planning to launch these in the next couple of weeks. They already could be orbiting by the time you read this. I believe there will be several beacons between 29.36 and 29.5 MHz. Further details will be obtained from the OSCAR reports on your Divisional broadcast. My thanks to Peter VK7PF for supplying this last minute information for the column.

Well, that is all for this month. Until next time, the best of DXing and 73! ■

INVITE AMATEURS TO JOIN THE WIA

IONOSPHERIC PREDICTIONS Len Poynter VK3BYE



LEGEND
 [Solid bar] FROM WESTERN AUSTRALIA
 [Dashed bar] FROM EASTERN AUSTRALIA
 [Stippled bar] BETTER THAN 50% OF THE MONTH, BUT NOT EVERYDAY
 [Dotted bar] LESS THAN 50% OF THE MONTH

Predictions courtesy Department of Science and Environment IPS Sydney.
 All times universal UTC (GMT).

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LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

29 Andamar Street, Jamboree Heights,
Queensland 4074
27th October, 1981

The Editor,
Dear Sir,
I've been meaning to write this for a few weeks now. On the spine of the September 1981 issue of AR was the volume and monthly identification printed — at last, I thought — save me scribbling my own there — however comes my October issue and no spine printing.

Please I think it is a worthwhile effort to print this information where it is most easily seen on the book shelves. How about making it a permanent feature?

Keep up the good work with AR.

73. Iain Morrison VK4KIG.

(We'll remember the "spine bashing" in future.— Ed.)

"Cornelian Hill", Bagdad, Tasmania 7407
30th October, 1981

The Editor,
Dear Sir,
Ian Nichols (OM VK7ZZ) has asked the "Hear a Book" Service to record the Institute's magazine on to cassette tape. We cannot do this without copyright clearance from the subscribers of articles.

I am confident it would not be the wish of subscribers to the magazine to deprive blind, and other print handicapped operators, of the contents of the magazine, rather it is a situation where the contributors do not realise the true position.

In future, would it be possible for all subscribers to indicate to you they are prepared to give copyright clearance to "Hear a Book"? When recording the article, credit will be given to the author.

OM VK7ZZ will get a group of print handicapped operators to promote this new venture through radio contact and, in the meantime, I would be grateful if you could do all you can to assist "Hear a Book".

Yours sincerely,

Mrs. Barbara Saltier, M.B.E., Founder and Hon. Secretary "Hear a Book" Service (Tasmania) Inc.

Southern Highlands Radio Society

The Editor,
Dear Sir,
I understand you would like something said about old hams — here goes.

I became interested in radio at the age of 12 years, having built a loose coupler crystal set, to be followed by a 2 valve regenerative, using 2 of 201 "A", costing £2/10/0 each, for which I pushed a hand mower at a doctor's place to buy.

Having received the first wireless station in Sydney, Broadcasters Ltd. 2BC, to be followed by 2FC, I was invited by friends out west on a farm at Bogan Gate to bring up my wireless. No one had ever seen or heard a wireless set.

Reception was at night, and one night an incident happened. The aerial, a very long wire some 50 ft. high, kept flashing over between the terminals of the aerial and earth. The sky was clear but dry, being in a drought. However, there was a huge dust storm blowing and the continuous arc proved to be static electricity across a distance of 10 inches.

My friends ordered me and the receiver out of the house, they were afraid it would blow up. I never found out the actual cause, but my theory is the movement of heavy dust acted like a capacitor between aerial and earth.

I kept in touch with various forms of radio, as it was known in those times. During the Second World War I was engaged in eliminating electrical interference from engines and motors in ships and lightning protection.

In 1952 I received my full licence, having previously made my transmitter gear. After some years I turned DSB and recently to SSB. I use a Kenwood 520S. The antennas are a yagi junior 3 element mounted 6 metres above ground and a vertical FED at the base, 27 ft. high. Both antennas work well on DX. I am interested in local contacts on 10 metres and, when DX is not present, to let prowlers know we are using the bands.

I have two prize items of a nostalgic nature — two honeycomb coils of 12,500 turns, tuning to 18,000 metres, made by De Forest. Mr. De Forest, as you know, put the control grid into Fleming's diode. The inscription on the coil says "What are the wild waves saying?". How romantic! The other item is a Phillips carbon mike 54 years old.

Although my health isn't so good I hope to give that QSO to the gang.



Yours sincerely,
P. (Frank) Christie VK2ATE.

SILENT KEYS

It is with deep regret that we record the passing of —

Mr. F. T. WILSON	VK5OA
Mr. S. J. EXCELL	VK3ASJ
Mr. B. L. HOWELLS	VK5KBH
Mr. O. L. PRICE	VK2ZLP
Mr. C. K. BLAKE	VK3BDO

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AR ADDRESS LABEL?**

WIA 1982 SUBSCRIPTIONS

These are the WIA subscription rates for 1982. If you believe you have not received a subs notice please pay the rate shown for your grade (see your AR address label coding) and Division. Please pay direct to the Executive Office, Box 150, Toorak, Vic. 3142.

	\$	Grades
VK1	27.50	FACT
	17.25	S*
	20.00	G
	18.20	Family
VK2	27.00	F
	25.00	A
	27.00	C
	25.00	T
	20.00	G
	20.00	S*
VK3	32.00	F
	28.00	A
	32.00	C
	28.00	T
	20.00	G
	20.00	S*
VK4	15.00	Family
	24.00	F
	24.00	A
	24.00	C
	24.00	T
	20.00	G
VK5	11.00	S*
	11.00	Family
	30.00	F
	28.00	A
	28.00	C
	26.00	T
VK6	20.00	G
	17.00	S*
	28.00	F
	27.00	A
	28.00	C
	27.00	T
VK7 (all zones)	22.00	G
	17.00	S*
	28.50	F
	28.50	A
	28.50	C
	28.50	T
	20.00	G
	9.75	S*

* Subject to authentication.

Grade designations —

F — Full City.
A — Associate City.
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G — Pensioner.
S — Student.

Family members for States not listed will be appropriate grade less \$9.30 in respect of AR element (i.e. for VK3 a family member without a call sign would pay \$18.70).

NEW MEMBERS

Plus joining fees — VK2, \$3; VK7, \$1.

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- Eight lines free to all WIA members \$9 per 3 cm for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA 1979 Call Book.

FOR SALE

Icom IC701 HF Txcvr., SSB, CW, RTTY, 160-10m, with matching AC/DC PSU, ICSM2 desk mic., hand-book, cables and connectors, 18 months old, as new cond., \$800 (no offers considered); ICRM3 remote controller for IC701, needs repair, \$60. B. Bathols VK3UV, QTHR. Ph. (03) 580 6424 AH.

Fi200 Yaesu, low hours, complete with power supply and mic., 1 Oskerblock SWR 200, 1 Scalar 5-band vertical ant., 1 Tech grid dip meter, \$525. Heb VK4ET, QTHR. Ph. (07) 266 7067.

Tower, wind-up Hills, 50 ft., unused, the two heavy bottom sections of a 75 footer with ladder on the lower section, complete with tilting base bracket, transports on a large roof rack, \$270; cage for heavy duty rotator to fit top of above tower, cad plated, new thrust bearing for 2 in. pipe, protector boot and shock mountings, \$50; 2m transverter, new Europa B, 28 to 144 M/h, hot rx, 200W PEP transmit, aerial switching, meter, plugs into Yaesu gear for all power, excellent unit, \$190; 2m FM Yaesu FT2FB in top cond. and complete with mic., bracket and manual, 40, repeaters Melb., Geelong, Ballarat, Grampians, \$150. VK3DS, QTHR. Ph. (053) 32 3226.

Stack Clearance: All equipment in working order and excellent cond. Kenwood TS600 50-54 MHz txcvr., 10W output, /450; Kenwood TS120V, plus remote VFO 120 HF txcvr., 10W output, \$550; Yaesu FT620 50-54 MHz txcvr., 10W output, \$350; Icom IC551 50-54 MHz txcvr., 10W output, \$490; Collins 75A4 amateur bands rx, \$350; Drake R4B amateur bands rx, \$350; 2m amplifier using two QOE06/40 valves, commercially made, complete with power supply, cooling fan, coaxial relays input and output, easily driven by any 10W equipment, \$100. Eric Jamieson VK5LP, QTHR. Ph. (08) 389 1204 around 0800Z or 2130Z.

Icom 215, repeaters 1-8, simplex 40, 50, 51, perfect order, \$100. VK3AOC, QTHR. Ph. (03) 527 7919.

Creed 7B, \$35; Teletype 14, \$20; Teletype 14TD, \$20; Teletype 28 printing reper., \$20; Teletype sync. motor, \$5. VK1RH, QTHR. Ph. (062) 58 7904.

Icom IC260A, multi-mode, 144-148 MHz, dual VFOs, memories digital, readout scanning, manual, mobile mounting bracket, \$450. Ralph VK1RK, Ph. (062) 81 0203 AH.

Kenwood TS520 AC/DC HF Txcvr., in exc. cond., c/w CW filter, \$440. Col VK5ACE, 24 Second Avenue, Selton Park, SA.

Yaesu FT901D, new, in box with manual, \$800, ONO. VK2VBP, QTHR. Ph. (02) 629 1021.

Heathkit Txcvr., SB101, mint cond., rare opportunity at \$195. Max VK5GF, QTHR. Ph. (08) 293 2155.

1675 FM Antennae, low band, suitable for conversion to 6m or 2m, excellent cond., \$30, ONO. Secretary VK8AR, QTHR.

Attention Country Members: 60 ft. plus three section Nally tower rotator mounted within tower, offered with Ham II rotator, controller and control cable, \$625 (at North Balwyn); also FL2000B linear, \$325. Ph. John (03) 583 5417.

Icom IC22A, complete with mobile bracket, manual and fitted with repeaters 3, 4 and 8, simplex 37, 40, 50 and 51, \$170. VK3BJW, QTHR. Ph. (03) 878 8189.

Kenwood TS520S, unmarked and mint cond., operation as new, orig. packing and little use, suit novice or full call, low power mods. available, \$550. VK2BCY, QTHR. Ph. (049) 52 2679 AH.

AOR AR240 2m hand-held txcvr., fully synthesised, 144-148 MHz in 5 kHz steps, includes battery charger, carry case and earplug, excellent cond., \$200, ONO. Ian VK3YIP, QTHR. Ph. (03) 387 2114.

Drake R4A Rx, good order, \$200. VK3BW, QTHR. Ph. (03) 59 3268.

Aluminium Tube Mast, 33 ft., two 18 ft. end supports and G5RV antenna, \$70. VK3AUC, QTHR. Ph. 99 2470.

Kenwood TR2400, current model, with nicads, charger, flex. antenna, manual, plus 1/4 wave telescoping whip, ext. mic., 12V charge lead, all as new in orig. packing, \$290. Hans VK5YX, QTHR. Ph. 271 5350.

Icom IC701PS, 20 amp power supply to match Icom IC701 txcvr., with built-in speaker, perfect cond., as new, manual, orig. packing, \$125; Kenwood M50 mic., dual impedance, 600 Hz/50 Kz, exc. cond., \$30. VK7MG, QTHR (81). Ph. (002) 57 8220.

Yaesu FTDX401, completely overhauled and re-conditioned, as new performance, 150-200 watts measured output, all band, \$350; Yaesu FL2000B liner, new 592Bs, \$325. Peter VK2JX, QTHR. Ph. (047) 57 1441.

Hy-Gain 5, converted to low end 10m, suitable mobile use, \$100; Sinclair ZX80 computer, 2 hours use, excellent machine, unable to use owing to "digital loss" on hand, RF mod., ch. 1 TV, \$190. VK4KAL, QTHR.

Yaesu FT7, mint cond., complete with accessories, mobile bracket and manual, 28 MHz A crystal (not fitted) included, \$425; Yaesu FT200, Incl. power supply, mic., handbook, spare finals, few hours work since overhaul, \$375. Don VK3DJF. Ph. (03) 848 3059.

Swan Astro 102BX Txcvr., complete with heavy duty power supply, 13.8V, mod. for Australian conditions, exc. unit, \$1000; Collins S line 32S2-75S2, plus power supply, complete, 2 sets xtals, \$700 the lot. VK2APP, QTHR. Ph. (063) 83 6206.

Kenwood TS820S, CW filter and MC50 mic., \$750; Kenwood TV506 6m transverter, \$160; microwave modules 432 436 transverter (28 MHz), never used, \$245; BWD 804 single trace 10 MHz scope, perfect, \$360; Kenwood DM800 dip meter, \$80; Daiwa CN630 VHF-UHF SWR and power meter, \$120; Kenwood HC10 ham clock, \$20. Prices negotiable. Jim VK2AZF. Ph. (067) 25 8728.

FT200 Txcvr., mint cond., with IF, RF and S meter mods., has built-in audio compressor, electronic protection of final tubes and cooling fan, matching G2ADF linear amplifier using 2 x 4-125 tubes with 3 kV power supply, all manuals and circuit diagrams supplied, together with complete FT200 club notes, \$450 the pair. Ian VK5QV, QTHR. Ph. (087) 25 5514.

Collins 75S-3 Rx, with noise blanker, 32S-1 tx with 516F2 power supply, one owner, top condition, spare set valves, can deliver to Sydney after 12th December, only \$1050, ONO. Gene VK4AJ, QTHR. Ph. (076) 38 1113.

Realistic DX300 Communications Rx, 10 kHz to 30 MHz freq. coverage, digital readout, good cond., in orig. box with manual, \$270 (later model DX302, almost identical, costs \$350 new). VK2AZT. Ph. (069) 42 1392.

Yaesu Linear FL110, suit FT7, etc., with Instructions, \$220 cash, no offers, buyer collect. VK3WW, QTHR.

Complete Station, TS520S Txcvr., AT120 combined ATU, power and SWR meter, MC50 desk mic., Morse key, \$750; Creed 7B teletype and manuals, \$50. Ph. 439 7881.

Kenwood VFO820, \$160; MFJ CWF2 filter, \$40; FL56 audio, CW, SSB filter, latest ERC variable notch and bandpass, \$70. Bruce VK2BAV, QTHR. Ph. 98 7797.

Heathkit Linear Amp, model HA14, 400W out, power supply, instruction manual and 4 extra 272B valves (equals 2 sets), \$275. Alf Chandler VK3LC, QTHR. Ph. (03) 99 5344.

Heathkit Linear SB230, as new, limited use, best offer over \$400, ill-health forces sale. Roy Prowse VK3XY, QTHR. Ph. (03) 557 1265.

WANTED

FT75 or FT75B, must have 20m and 40m xtals. VK3PI, QTHR.

913 CRT 1 in. screen with socket; RCA 8552 (12V equiv. 6146), also known as 8032A. Price to VK4KAL, QTHR.

Public Address Speakers, flares, reflexes or exponential horns. Graeme VK3YEJ. Ph. (050) 26 3216 Bus., (050) 26 3691 AH.

SWLs: The "Southern Cross DX Club" has the latest news from the SW, MW and amateur bands in our monthly "DX Post". Low subscription rates, offset magazine — Australia's national DX Club! Write for a sample magazine and details of membership to Membership Secretary, G. Williams, PO Box 64, Campbelltown, SA 5074, mentioning this advertisement.

Argonaut 515, VK2ZRD, QTHR. Ph. (02) 456 1577.

Matching Speaker, suit Yaesu FTDX560, either SP401 or SP400, also VFO FV401, must be clean cond. VK7AN (ex VK7NAB), QTHR. Ph. (003) 31 7914. Crammond Model CTR66 Marine Txcvr., 24V, copy of circuit diagram or maintenance manual please, on loan or purchase. John Allan VK5UL, 27 Devonport Terrace, Ovingham 5082. Ph. (08) 44 7465.

Communications Rx, tuning 0.5-30 MHz, such as Barlow-Wadley XCR30 or similar, suitable for portable use, price not over \$150; encourage a potential junior operator. Graeme Nicholls VK3ADF, 103 Rowe Street, North Fitzroy 3068, Vic. Ph. (03) 481 4642.

Hy-Gain 402BA, second-hand or copy of assembly booklet, or any construction details, will pay costs. VK2DXH, QTHR. Ph. (049) 49 8952.

No. 19 WWII Control Box, plugs, leads and accessories, any other war-time sets and accos. (Nos. 133, 1, 2, 11, 102, etc.), direction finding loop, enthusiast restoring WWII blitz signals van. Tim, Shepparton, Victoria. Ph. (058) 21 9999 Bus., (058) 26 2427 AH.

Books by M. G. Scroggle, particularly "Second Thoughts on Radio Theory", also RSGB RTTY hand-book and low pass filter, Drake VT3300LP. Details to VK4SZ, PO Box 26, Innisfail 4860.

STOLEN EQUIPMENT

FT301D, serial 6M305229, from car in Double Bay, Sydney. Any information please telephone (03) 598 4711.

10m Converted CB Hy-rangs V by Hy-gain, model 674B, serial No. EO-0674-C-016, also home-brew power supply. Reward. Don VK3NEW, QTHR. Ph. (053) 83 6244.

EXCHANGE

Communication Rx, National HRO, BC348, plus home-brew linear amplifier, 14 MHz, in exchange for screw cutting lathe, cash adjustment either way if necessary. VK2LK, QTHR. Ph. (02) 635 6874.

TRADE HAMADS

RTTY Siemens 100A, \$120; UHF FM321, all 40 ch. plus repeaters on 70 cm, \$299; MLA2500 linear amp with large front panel, 2000W power output meter, 1.8 to 30 MHz, AM, SSB, CW, RTTY, SSVT, \$750; FRG7 rx, 500 kHz to 30 MHz, \$275; ex RAAF Pye aircraft transceiver, 110 to 140 MHz, \$45; UHF FM320 transceiver, \$259; new W65 18 ch. SSB CB radio, \$119; new W65 40 ch., \$195; 18 ch. walkie talkie, \$170; 40 ch. CB with scanner, \$99; 23 ch. CB, \$55; 18 ch. CB, \$69; 27 and 28 MHz 4 el. beam, \$79; helical ant., \$8.50. Different rigs coming in each day. When in Sydney drop into Park Disposals, 32 Park Street, Sydney, 2000, near Town Hall Railway. Ph. (02) 264 7515. Rigs posted anywhere in Australia, NZ, PNG, Pacific add \$5.

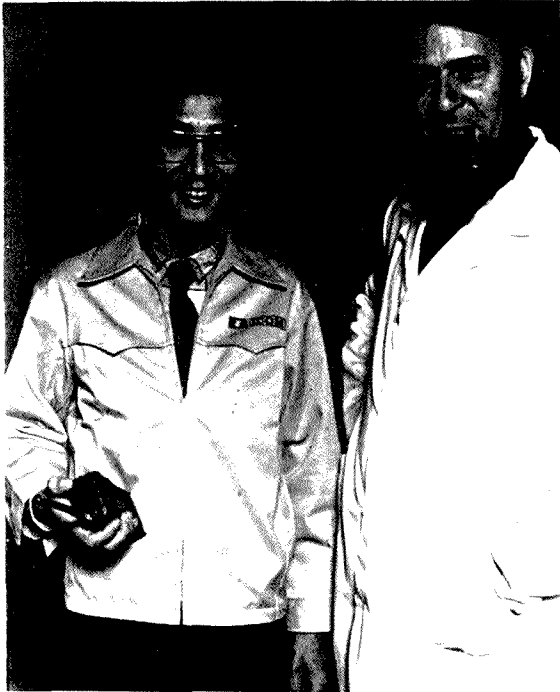
Blank Cassettes at ridiculous prices: Mark II, by Magnetics, 2 only C90LN, \$1.02 3 only C60LN, \$1.02! The only extra is postage \$2.00 for 1 to 10 cassettes, then add 50c for each additional 20 cassettes. Note: Library cases are not supplied. G.G. Communications Engineering, 14 William Street, Donvale, Victoria 3111. Kevin Gluyas VK3YPL.

Amidon Ferromagnetic Cores: Large range for all RF receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R.J. & U.S. Imports, Box 157, Mordial, NSW 2223.

WARNING !!

Disposing of your old rig??
Please ensure it goes ONLY to someone licensed to use it on YOUR bands.

People to People.



Kiyoshi Fukushima VK3BZX Duncan Baxter VK3LZ

People who buy sophisticated electronic equipment are special people.

They like to talk to people who understand what they're talking about. Let's face it, they have every right to. Buying electronic equipment is not like buying potatoes.

When you're buying equipment as intricate and sophisticated as most of the equipment we sell, you need to know a lot more than simply the price.

The problem is, of course, that there are a lot of people selling equipment who have no ability or factory support to back up what they're selling.

Some people even refuse to break factory seals on equipment they sell. They say that if the factory made it, then that's good enough.

We know differently

Even with the best equipment in the world, things can go wrong. They can be caused by something as simple as a bump in transit. Or even a mistake in the factory. It doesn't happen often – but it does happen.

That's why – at Vicom – we check everything that leaves our premises.

And it's also why we have the most experienced and most talented people to check it.

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Duncan is Customer Service Manager at Vicom's South Melbourne headquarters, where he not only deals with personal enquiries, but inspects equipment before despatch.

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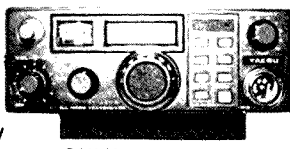
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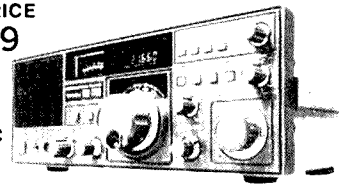
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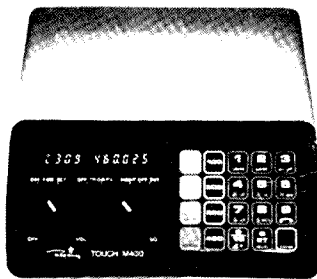
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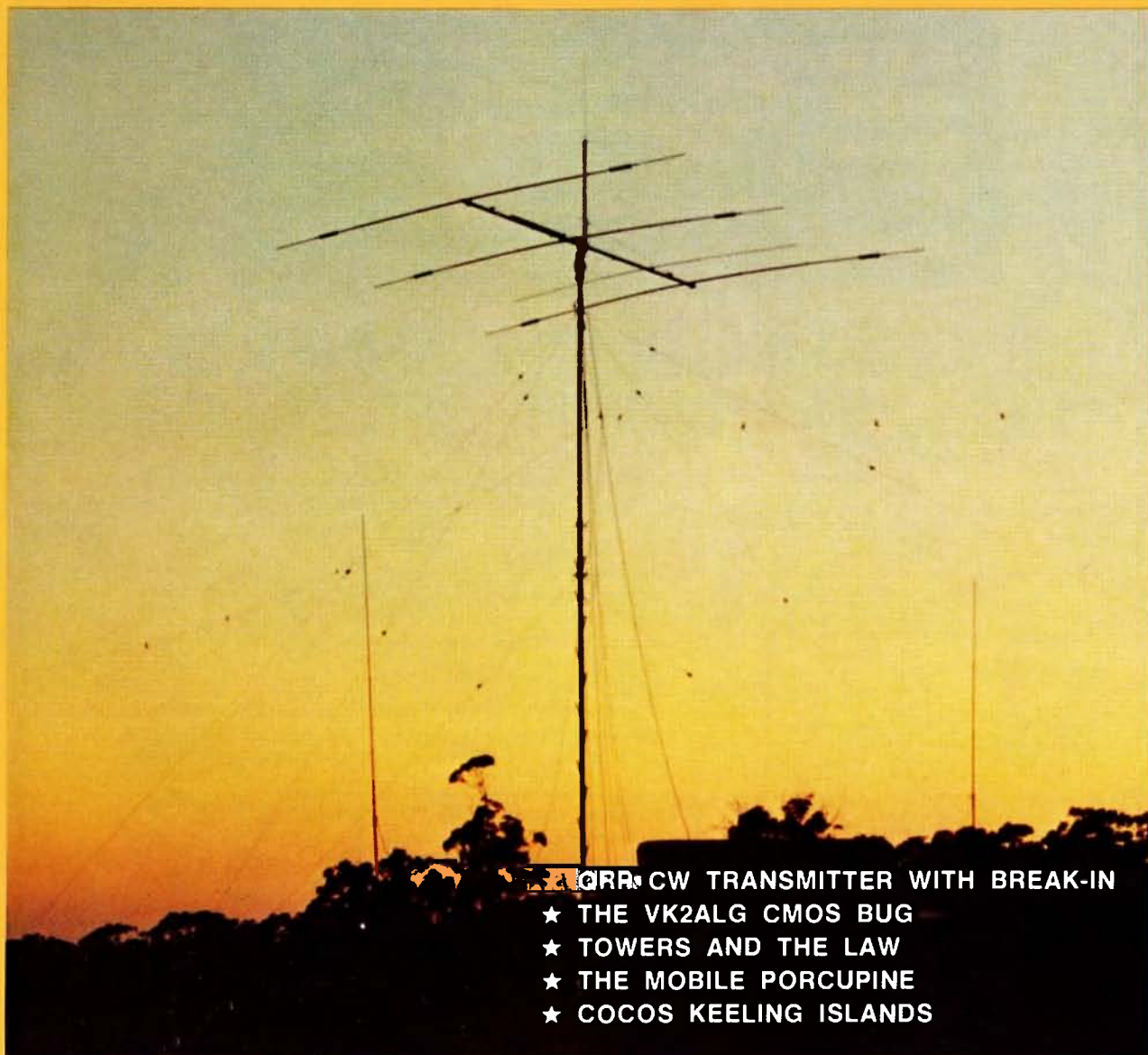
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Vol. 50, No. 2 FEBRUARY 1982

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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



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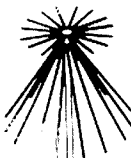
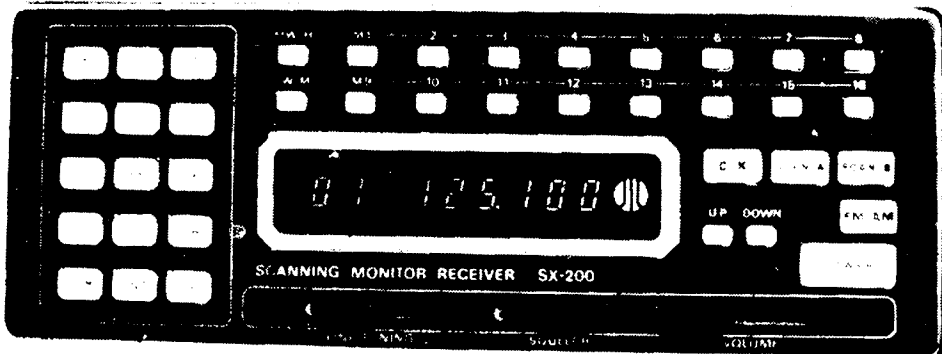
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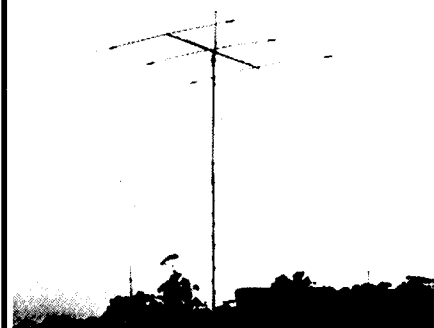
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Cover Photo



Silhouette of station antennae used by
VK5CGR in the John Moyle Memorial
Field Day. See page 33.

QSP ···· QSP ···· QSP ····

DECISION TIME

The WIA Annual Convention will once again be held at the Brighton Savoy Motel, Melbourne, on 1st May, 1982.

This is the only time throughout the year that policy decisions affecting the Institute and your hobby can be made as a whole.

Decisions made at the convention are not taken lightly, and are made only for the overall improvement and conservation of the amateur service in the long term.

Each of the seven Divisions has its own elected Federal Councillor and observer(s). Your Division's Councillor is the ONLY person who may vote on issues presented at the convention.

If you have any item which you consider needs to be brought up at the convention, your Federal Councillor must be briefed first. This can only be done by agreement of your local Division at one of its meetings.

The Federal Councillor is representing the State Division as a whole, and not necessarily the individual. However, you as an individual member, are part of your State's Division and have direct recourse to your State Council at the monthly meetings.

By nature of the Company structure of the WIA, 30 days notice is required for agenda items which are to be discussed at the convention. Therefore, all agenda items must be finalised, and in the hands of the Executive Office for distribution to the other Divisions by the 1st April, 1982.

Failure to accede to this time limit will result in the agenda item not being included for discussion.

This is now mid-February and your Divisional Council has only a few weeks left to discuss NATIONAL issues.

The role of the Executive Council is simple — we are the "whipping boys" of the Divisions. We can introduce agenda items (within the specified time, of course), but cannot vote on any item.

The Executive puts into effect the policy decisions agreed upon by the seven Divisional Councillors.

The Federal President, however, does have a very important function. He controls and administers the convention, and also has the power of a casting vote in the event of a deadlock.

His casting vote may only be used to maintain the status-quo, or, if he thinks necessary, to agree upon an important item which will have specific benefits. It is usual that his casting vote will be used only to maintain the status of existing policy, except in the most unusual circumstances.

The real power of the Institute lies with those seven Divisional representatives, and a simple majority is all that is required for new policy decisions to be made effective.

You should act now to enable your State Council to fully investigate any items you wish discussed.

Much valuable time can be lost at conventions if the councillor is not fully informed of the details surrounding an agenda item. In these events, the vote is usually lost.

The convention will last for 3 days and nights. It is intensive and tiring for those involved, and requires the full concentration of your Councillor and observer(s).

Any Institute member is welcome to attend part or all of the business proceedings, and IF CIRCUMSTANCES AND TIME PERMIT, may even be allowed to speak up either for or against a particular item. Naturally only the State Councillor is permitted to vote, so if you desire to speak, please let your Councillor know well in advance so that the necessary arrangements may be made.

Time is now running short, PLEASE ACT NOW so that your State Division can fully prepare its Federal Councillor for the important job ahead.

Decisions made at the 1982 Federal Convention will affect all Australian radio amateurs, whether members of the Institute or not.

BRUCE R. BATHOLS VK3UV
Editor, AR, and Federal Vice-President. ■

WIA ANNUAL CONVENTION —
PRELIMINARY ADVICE

WI ANEWS

10 MHz BAND

Members may wish to refer to a summary of the conditions relating to this new band.

The release of this band, 10100 to 10150 kiloHertz, for the use of the amateur service in Australia on a secondary — repeat secondary — basis from 1st January 1982 was announced by the Department of Communications early in December and publicised through an insert into the December edition of Amateur Radio.

Users of this band are advised to note several restraints as follows—

- Amateurs are a secondary service and must not cause harmful interference to users in the primary service, namely the fixed Service;
- The DOC states the frequency 10141.5 kHz plus and minus 4 kHz should be avoided because this frequency is assigned in Australia to a large number of low-powered stations;
- The DOC advises that this band has been allocated to the amateur service in New Zealand on a similar basis but in this case the frequency 10130 kHz plus and minus 5 kHz should be avoided because this is an important New Zealand assignment to the fixed Service;
- In Australia this band is available only — repeat only — to full call licensees, i.e. AOCIP holders only;

- Through a gentleman's agreement this band in Australia is split into two segments — 10100 to 10115 kHz for CW only and 10.115 to 10150 kHz for phone and CW;
- A possibility exists that this band may not be recognised internationally for the purposes of contests and awards;
- Information through IARU sources indicates that this band may be limited in Regions 1 and 2 countries and in many Region 3 countries to narrow-band emissions only such as CW and possibly RTTY;
- It is not yet known for certain which countries have authorised the use of this band for their amateurs apart from Australia, New Zealand and the United Kingdom.

Subsequent to the above being written for broadcasts, news has been received that PNG amateurs have also been allocated this band on a secondary basis for all the usual HF permitted modes from 1.1.1982.

7 MHz BAND

Arising from a misconception, a columnist in January AR wrote concerning a 40 metre band expansion. Again a broadcast item drew attention to this error and confirmed there was no change here in Australia to the existing allocations of 7000 to 7150 kHz.

WIRELESS INSTITUTE OF AUSTRALIA

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Executive Office: 3/105 Hawthorn Rd., Caulfield North, Vic. 3161. Ph. (03) 528 5962.
Divisional Information (all broadcasts are on Sundays unless otherwise stated).

ACT:

President — Mr. W. R. Maxwell VK1MX
Secretary — Mr. C. T. Vidler VK1KV
Broadcasts— 3570 kHz and 2m Ch. 6 (or 7): 10.00Z.

NSW:

President — Mr. A. D. Tilley VK2BAD
Secretary — Ms. S. J. Brown VK2BSB
Broadcasts— 1100 and 1930 local time. Frequencies bracketed at 1100 only.
1.8125 — Ncle relay, 1.825 — Sydney relay, 3.595 (7.146), 28.32, 52.12, 52.525, 144.12 MHz. Repeater Ch. 6650 Oberon (6700 Orange), 6750 Gosford (6800 Lismore), 6850 Wollongong, 7000 Sydney, 8525 Sydney.

VIC.:

President — Mr. P. R. Drury VK3JN.
Secretary — Mr. D. J. Clarke VK3DES
Broadcasts— 1840, 3600, 7135 kHz — 53.032 AM, 144.2 USB and 2m Ch. 2 (5) repeater: 10.30 local time
Gen. Mtg. — 2nd Wed., 20.00.

QLD.:

President — Mr. D. Laurie VK4DT
Secretary — Mr. F. J. Saunders VK4AFJ.
Broadcasts— 1.825, 3.580, 7.120, 14.342, 21.175, 28.400, Rpl. Ch. 6700 and 7000 Sundays from 0900Z (Sat. 2300 UTC).
Re-broadcasts— Mondays 3.605 from 1930Z, Mondays 80 or 20m RTTY segment from 200Z.

SA:

President — Mr. J. B. Mitchell VK5JM
Secretary — Mr. W. M. Wardrop VK5AWM
Broadcasts— 1820, 3550, 7095, 14175 kHz; 21.95 28.470 and 53.1 MHz, 2m (Ch. 8): 09.00 S.A.T.
Gen. Mtg. — 4th Tuesday, 19.30.

WA:

President — Mr. B. Hedland Thomas VK6OO
Secretary — Mr. F. Parsonage VK6PF
Broadcasts— 3560, 7075, 14100, 14175 kHz. 28.47, 53.1 MHz, 2 metres Ch. 2 Perth, Ch. 6 Wagin. Time 0130Z.
Gen. Mtg. — 3rd Tuesday.

TAS.:

President — Mr. I. F. Ling VK7XL
Secretary — Mr. P. Clark VK7PC
Broadcasts— 7130 (SSB) kHz with relays on 6 and 2m Ch. 2 (S), Ch. 8 (N), Ch. 3 (NW), 09.30 EST.

NT:

President — Mr. T. A. Hine VK8NTA
Vice-Pres. — Barry Burns VK8DI
Secretary — Robert Milliken VK8NRM
Broadcasts— Relay of VK5WI on 3.555 MHz and on 146.5 MHz at 2330Z. Slow morse transmission by VK8HA on 3.555 MHz at 1000Z almost every day.

Postal Information:

VK1 — P.O. Box 46, Canberra, 2600.
VK2 — 14 Aitchison St., Crows Nest, 2065 (Ph. (02) 43 5795 Mon, Tues & Thurs 9.45-13.45h).
P.O. Box 123, St. Leonards, NSW 2065.
VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03) 417 3535 Weekdays 10.00-15.00h).
VK4 — G.P.O. Box 638, Brisbane, 4001.
VK5 — G.P.O. Box 1234, Adelaide, 5001 — HQ at West Thebarlon Rd., Thebarlon.
VK6 — G.P.O. Box 10, W. Perth, 6005.
VK7 — P.O. Box 1010, Launceston, 7250.
VK8 — (Incl. with VK5), Darwin AR Club, P.O. Box 37317, Winnellie, N.T., 5789.

Slow morse transmissions — most week-day evenings about 09.30Z onwards around 3550 kHz.

VK QSL BUREAUX

The following is the official list of VK OSL Bureaux, all are inwards and outwards unless otherwise stated.

VK1 — QSL Officer, G.P.O. Box 46, Canberra, A.C.T. 2600.
VK2 — QSL Bureau, P.O. Box 73, Teratba, 2284.
VK3 — Inwards QSL Bureau, Mrs. B. Gray VK3BYK, 1 Amery Street, Ashburton, Vic. 3147.
VK3 — Outwards QSL Bureau, C/o 412 Brunswick Street, Fitzroy 3065.
VK4 — QSL Officer, G.P.O. Box 638, Brisbane, Qld., 4001
VK5 — QSL Bureau, Mr. Ray Dobson VK5DI, 16 Howden Road, Fulham, S.A. 5024.
VK6 — QSL Bureau, Mr. J. Rumble VK6RU, G.P.O. Box F319, Perth, W.A. 6001.
VK7 — QSL Bureau, G.P.O. Box 371D, Hobart, Tas. 7001.
VK8 — QSL Bureau, C/- VK8HA, P.O. Box 1418, Darwin, N.T. 5794.
VK9, 0 — Federal QSL Bureau, Mr. N. R. Penfold VK6NE, 388 Huntriss Rd., Woodlands, W.A. 6018.



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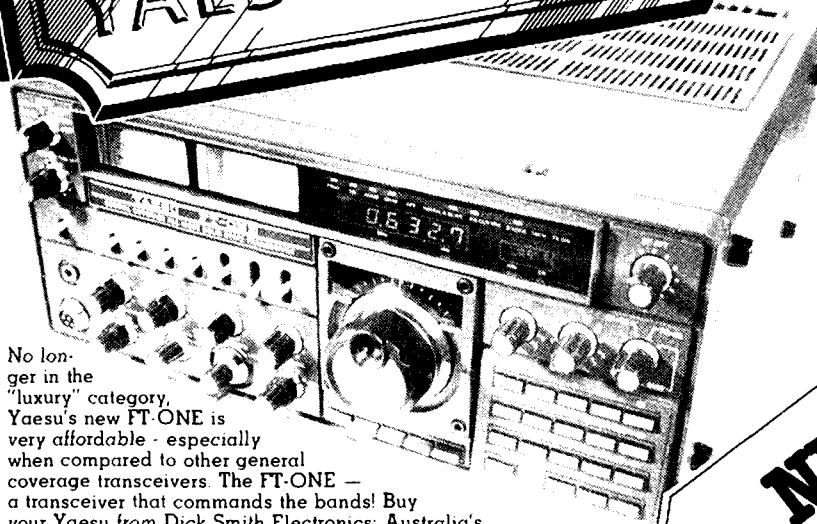
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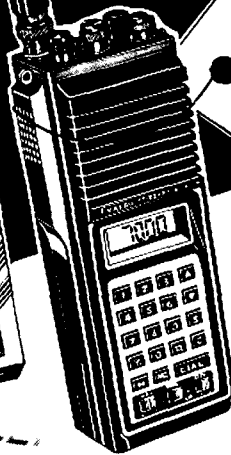
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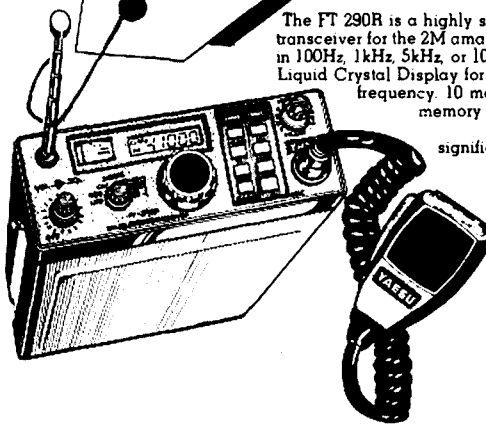
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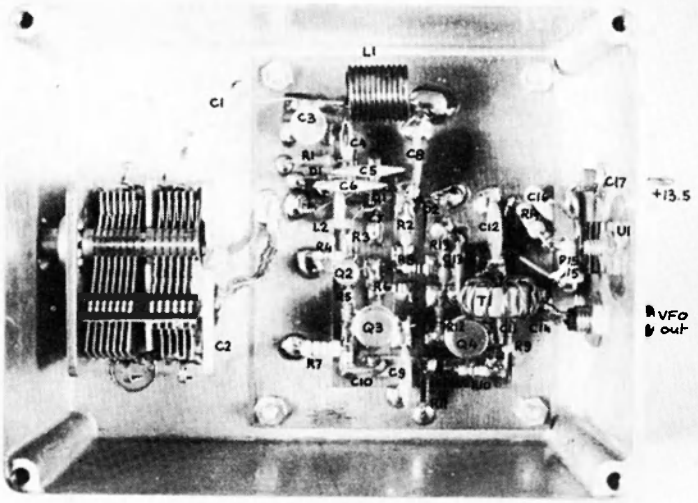
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QRR CW Transmitter with Break-In - Part 3

Drew Diamond VK3XU
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CONSTRUCTION

The bulk of components are accommodated upon six double-sided printed circuit boards housed in a commercially available case measuring 28 cm W, 11 cm H, 27 cm D. A suggested layout is shown in the photo. The VFO should be enclosed in a diecast box in order to shield it from the other circuits and to slow down temperature effects. The VFO assembly is mounted upon four rubber grommets to obtain thermal insulation from the heat producing components and make capacitor shaft alignment less critical. The variable capacitor must be connected to the vernier drive with an insulated flexible coupler. The capacitor used in the prototype is a 100 + 200 pF one available from several sources here. Another suitable type is a Roblan RMG1-100 available from Watkin Wynne of Sydney. A hole in the lid of the box above C3 will allow easy adjustment of the VFO range. It is possible to mount the PCBs directly on to the case with screws and nuts. If the case is anodized (as in the prototype), copper braid should be used to join the grounds of all the board together as shown.



VFO

Miniature coax is ideal for all the necessary coax runs. It is important to solder a shield between the switch wafers S1a and S1b, c. This is easily done by removing the rear wafer and soldering on a piece of PCB with a hole cut for the shaft as shown. The rear wafer is then replaced. Do not be tempted to use this shield as a ground point for coax. The braids for cabling to S1a should all be joined, but not grounded at this point. The same applies to the output LPF switch, S1b, c. The circuit diagram attempts to illustrate this. This measure is necessary to prevent instability in the output amplifier.

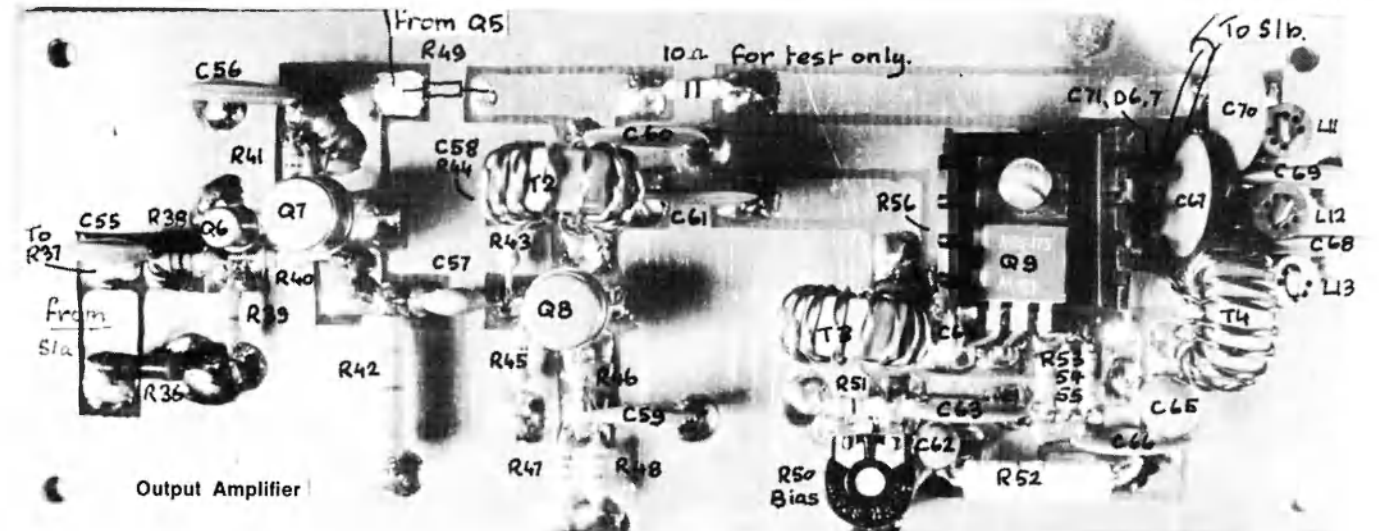
The VFO voltage regulator U1 should be mounted on, but insulated from the VFO

box. The power supply regulators U11 and U12 must be mounted upon the rear panel of the case. U11 will require a mica insulator and nylon washer as for U1. Heat-sink compound should be used for thermal transfer, but petroleum jelly has been found to be a suitable substitute.

The broadband transformers T1-T4 may be fabricated as follows: Place the ends of two 35 cm lengths of 24 B & S enamelled wire in a vice! The other ends are twisted together and fixed in the chuck of a hand drill. Whilst keeping the wires taut, the drill is turned until there are about 2 or 3 twists per cm. The drill is then tugged to "set" the twists. After removal from the drill and vice, the pair is carefully looped through

a Neosid 4327/2/F25 toroid until a neat single layer winding is obtained. The final number of loops should be about 15. An ohmmeter may be used to locate the respective windings. It is essential that the end of one winding is connected to the start of the other winding to form the centre tap. The toroids are available from Watkin Wynne or J. H. Magrath of Melbourne.

Output transistor Q9 must have a TO220 heatsink attached. The heatsink should be mounted upon an insulated stand-off, and the legs bent down and soldered to the board. A smear of heatsink compound (as for the regulator ICs) must be applied between the transistor case and heatsink.



About nine holes should be punched in the top of the lid, and another nine in the side near the output amplifier to allow ventilation of Q9.

During construction, each stage may be built and tested individually. The order could be: Power supply, VFO, keying, dividers, amplifier, output filters and TR switch. Copies of artwork for PCB layouts may be obtained by sending SAE to the author.

OPERATION

The quiescent current through Q9 should be adjusted to about 100 mA. This can be done by measuring the drop across the emitter resistors and adjusting R50 so that this voltage reads 0.2V. R50 should be

effectively shortened when voltage is first applied.

Tuning range may be set by adjusting C3 and monitoring the VFO frequency output with a counter or receiver which covers 28 MHz. After adjustment there should be a bit to spare at each end of the tuning range.

The output meter indicates about 2W at half-scale when driving a pure 50 ohm load. The level should not be pushed much beyond 2W output. A dummy load for testing could consist of two 100 ohm 1W carbon resistors in parallel, or a 56 ohm resistor in parallel with a 6V, 20 mA globe as a visual indicator. These items should

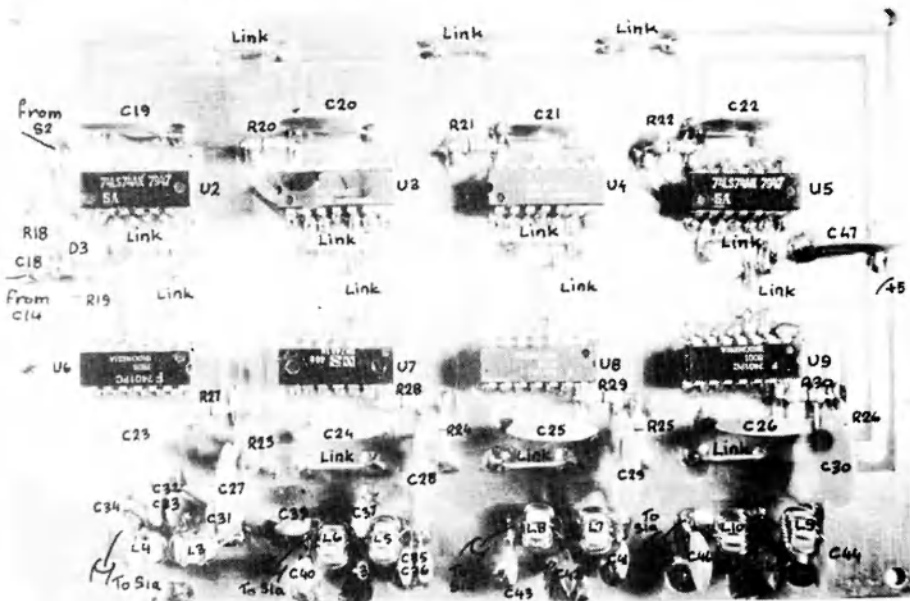
be soldered to a length of 50 ohm coax and connector.

To net the VFO, S2 is placed in the net position, and a signal will be heard on the receiver. If the key is accidentally operated whilst netting, no signal is put to air, as Q bar goes to the low state and disables the dividers. In order to tune a following device such as a tube amplifier or ATU, it will be necessary to send a rapid string of dots, rather than a steady carrier, otherwise the keying mono will time out.

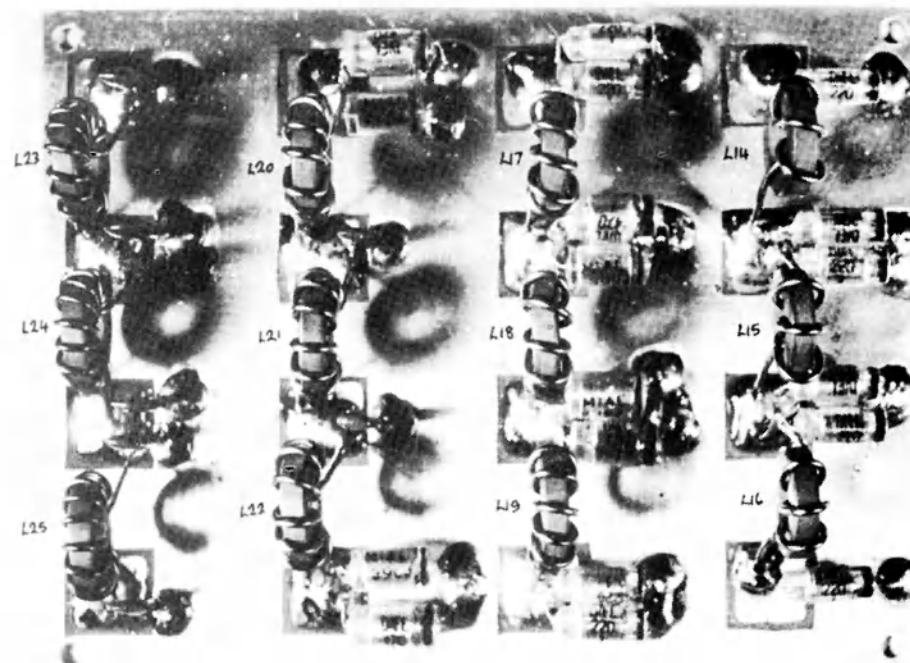
Photographs provided by Nick Kane.

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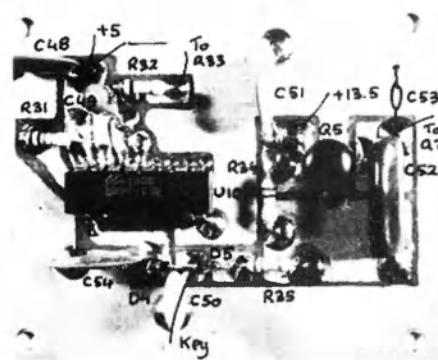
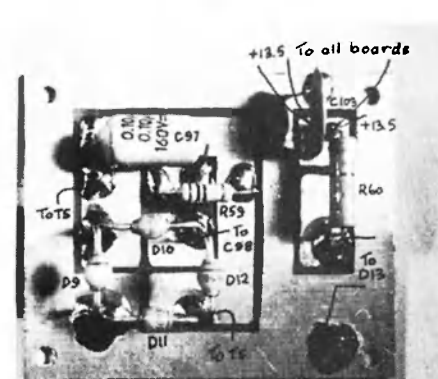
Fairchild TTL Data Book.
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'Half as much is just as good' or the VK2ALG CMOS-Bug

Terry R. Clark VK2ALG
PO Box 537, Albury 2640

WHY?

For some time there have been many excellent electronic keyers on the world-wide market. These plus several home-brew keyers have kept most CW buffs happy. However some CW operators prefer to use the semi-automatic "Bug Key". One argument is that by having to make their dashes manually their wrists are kept supple, thus making the transition back to a straight key easier. But there is one disadvantage with a Bug Key. It is very difficult to quickly slow them down owing to the number of critical mechanical adjustments that have to be made to QRS. It would be much easier if the speed could be changed by just turning a knob. Why buy a whole keyer when you only need half of one?

Although there have been many "Electronic Bug Keys" in the past, they have all suffered from various defects — either their speed has tended to vary, they loose their 1:1 mark/space ratio on dots when their speed is changed, or they simply use too much power.

For this design the following parameters were laid down:

- (a) constant mark/space ratio on dots whatever speed used
- (b) high dot speed stability
- (c) capable of keying grid-block and solid-state Tx
- (d) low power drain — battery operation for portable
- (e) use readily available components
- (f) cheap to build.

If one considers under \$20 for the complete unit including all hardware to be cheap, then all design parameters have been met.

HOW DOES IT WORK?

Complementary Metal On Silicon (CMOS) integrated circuits were chosen because of their wide supply voltage tolerance (3V-15V) and their extremely low power drain (micro-amps).

Let us first consider the production of DOTS. The circuit in Fig. 1 shows a simple BCD counter connected to a NOR gate. The counter is supplied with a continuous train of clock-pulses. Output from the BCD counter is taken from the first stage or Q1 to obtain the "toggle" effect thus ensuring a 1:1 mark/space ratio. The BCD counter advances one count on the trailing edge of each clock-pulse. The counter requires a logical low on its "reset" in put to enable it to count. The "reset" of the BCD counter is also connected to one input of the NOR gate. The output from this circuit is taken from the output of the NOR gate. In the quiescent state the "reset" input is held High by a pull-up resistor and the operation of the Dot Paddle takes the reset and one gate of the NOR gate Low.

In Quiescent state, Reset H, Q1 held Low, holding NOR output L, when the paddle is operated, Q1 remains L, turning NOR output H, after the first clock-pulse Q1 goes High, turning NOR output L, after the second clock-pulse Q1 goes Low, turning NOR output H, after the third clock-pulse Q1 goes High, turning NOR output L, after the fourth clock-pulse Q1 goes Low, turning NOR output H, after the fifth clock-pulse Q1 goes High, turning NOR output L.

Therefore a train of high going square-wave pulses appear at the NOR gate output for as long as the BCD counter rest remains Low. When the rest is returned to the High gate, by releasing the Dot Paddle, the output from the NOR gate immediately goes Low, thus cutting off the train of pulses. In other words when the Dot Paddle takes the rest pin of the BCD counter LOW the NOR gate commences a dot, the dot is cut off by the first clock-pulse, the second dot is started by the second clock-pulse and cut off by the third clock-pulse, etc. The dots cease as soon as the Dot Paddle is released.

There is one disadvantage. As the BCD counter responds to the clock-pulses there can occur a circumstance when the Dot Paddle is operated during a part of the clock-pulse which is High, thus the first dot produced will be shorter than the rest. In order to remove this fault the clock is speeded up and another BCD counter dividing by ten placed in the train. See Fig. 2. The "reset" input of this second BCD counter is connected to the rest input of the original counter and to the same input of the NOR gate which is also connected to the Dot Paddle. Therefore both counters are controlled together. In this way the error on the first dot length is divided by ten to make it unnoticeable in practice. The higher clock speed also improves the frequency stability of the clock-pulse circuit. Note that dots commence as soon as the paddle makes contact.

Now let us consider the production of manual DASHES. A simple logic inverter is used for this function. See Fig. 3. The input to the Inverter is held High by a pull-up resistor, thus holding the output Low. The Dash Paddle takes the input Low turning the output High. When the Dash Paddle is released the output returns to the Low state. Note that the dash signal is high going the same as for the dots. By using a single-lever paddle only dots or dashes can be produced, never both at the same time.

The high going dot and dash signals are then combined in a NOR gate which also inverts the signal. This is then inverted and used to drive either keying transistors or a keying relay. Refer to Fig. 4.

Two NAND gates are used to produce a train of clock-pulses. A variable resistor is incorporated to vary the speed of the clock

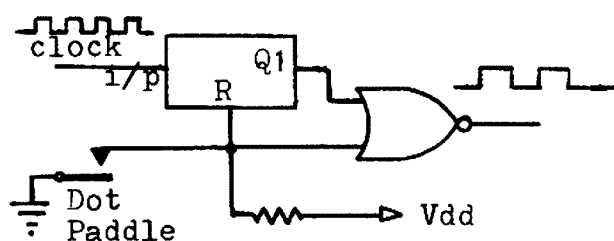


FIGURE 1

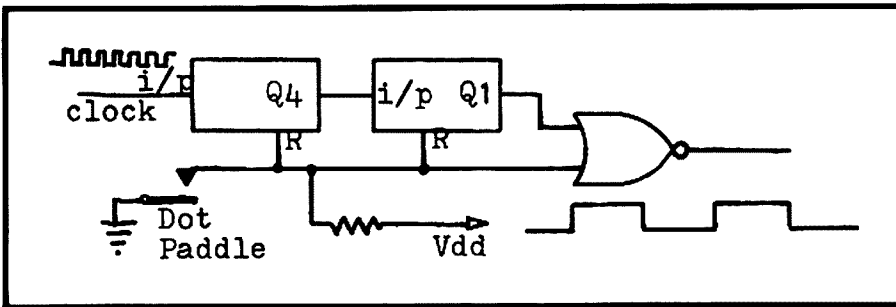


FIGURE 2

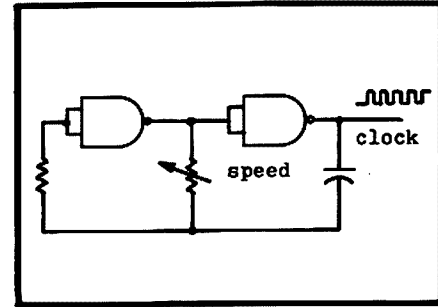


FIGURE 5

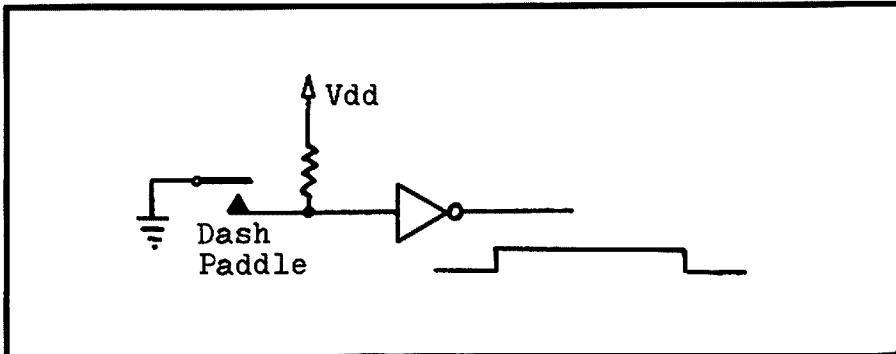


FIGURE 3

Grid-Block transmitters requiring up to 10A and up to 70V negative with respect to ground.

Keying transistors were chosen because of the smaller supply drain required to drive bipolar transistors than that required to operate a small relay. Don't forget one of the design parameters was low supply drain for battery operation.

By using CMOS integrated circuits a considerable saving in quiescent drain has been achieved. No monitoring has been fitted, this is to (a) save battery power and (b) is not necessary as most amateur transmitters in use already have a CW sidetone monitor oscillator already fitted. The measured key-up current is 0.07 mA. The key-down current is 11.2 mA, most of which is used to drive the bipolar transistors. By using a No. 216 9V battery as the Vdd supply it is estimated that several months of normal amateur use will be obtained. In practice the on/off switch is not really required.

One of the main problems with all electronic keyers is to keep RF out of them. In the case of the CMOS-BUG the Vdd supply is de-coupled by a 1 mfd tantalum capacitor and the supply pin to each IC is bypassed to ground with a 0.01 mfd Green-cap. These greencaps are mounted as close to their ICs as possible. The paddle pull-up resistors are also bypassed to ground with 0.01 mfd greencaps. Each input and output to the unit has added inductance in the form of small ferrite beads and also bypassed with 0.01 mfd greencaps to ground. The base lead of the MJ2955 transistor is also fitted with a ferrite bead. The whole unit is screened by fitting it in a metal box which is connected through the transmitter keying lead to the station main RF ground.

and hence the speed of the dots produced. See Fig. 5. Note that each dot is made up of ten clock-pulses and each space between the dots is another ten clock-pulses. Therefore the clock speed is twenty times the dot speed. By using BCD counters a 1 : 1 mark/space ratio is assured no matter what speed is used or no matter what the shape of the clock-pulse is.

PRACTICAL CONSIDERATIONS

From the theoretical diagrams, Figs. 1-5, it will be seen that two NOR gates, two NAND gates, two INVERTERS and two BCD counters are required. As NOR gates come packaged four to a chip, we can use the two spare gates as inverters. NAND gates also come four to a chip and the remaining two gates can be used to buffer the Dot Paddle and hence isolate the BCD counters from the paddle. Fortunately the CMOS 4518 chip contains two BCD counters. Therefore the total IC complement is one quad NAND gate 4011 chip, one quad NOR gate 4001 chip and one dual BCD counter 4518 chip. A total of three integrated circuits in which every input is used.

In order to operate the BCD counters as required we feed the input clock-pulses to the "Enable" input and ground the "Clock" inputs. This ensures the counters operate on the negative going trailing edge of each clock-pulse.

Refer to the main circuit diagram of the CMOS-BUG, Fig. 6. NAND gates 1B and 1C form the continuously running clock which speed is controlled by the 500 Kohm linear potentiometer. NAND gates 1A and 1D buffer the Dot Paddle and their output controls one input to NOR gate 3A and the reset functions of both BCD counters. NOR gate 3D is connected as an inverter and produces the Dash Signal, whilst NOR gate 3B combines the Dot and Dash signals which are then inverted by NOR gate 3C.

The positive going CW signal is then fed to the base connections of two BC108 (2N2222) bipolar transistors. One BC108 supplies sufficient drive to key Solid-State transmitters requiring up to 100 mA and up to 30V positive with respect to ground. The second BC108 drives a PNP MJ2955 bipolar transistor which provides keying for

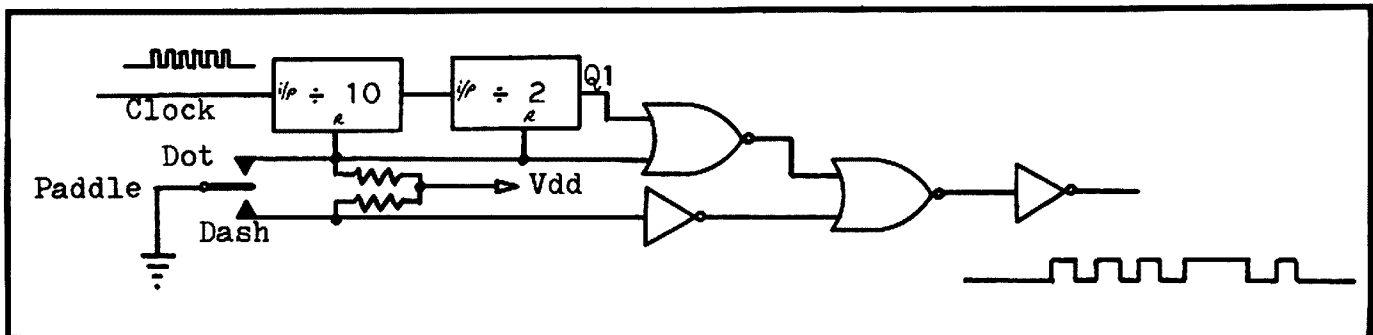


FIGURE 4

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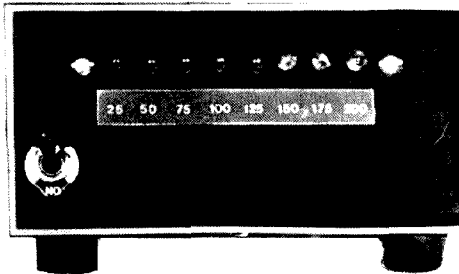
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Towers and the Law

John Ingham VK5KG

Those readers who have had access to the South Australian Divisional Journal and to the Divisional news broadcasts from VK5, will no doubt have followed the history of the fight in South Australia to preserve the rights of the amateur radio operator to erect towers and antennas. An article entitled the same as the above recently appeared in the VK5 Journal and provided a large amount of background to the cases which have been fought in the courts. Should you wish to review same, I am sure your Divisional Councillor will have access to both that and previous articles from that publication.

The main reason for this missive is to bring amateur radio operators throughout Australia up to date with what has been going on in VK5.

First, let me briefly explain a little of the legislation which exists in South Australia applicable to this subject. In that State we are governed by two sets of legislation. Firstly there is the Planning Act. Under this Act the various Local Government Authorities (Councils etc.) set up their own Planning Regulations, which, generally speaking are fairly standard. Within this Act is a section which in effect says that if a structure is erected 10 metres or less in height, building permission is not required. Therefore an amateur may go ahead and erect his mast or antenna up to that height.

The second piece of legislation is, of course, the Building Act. This requires that for certain structures (a tower above the 10 metre height), a Building Permit must be obtained. Sketches or drawings must be submitted together with stress calculations, etc. This latter requirement we have no argument with, and in fact it is probably to the benefit of the amateur that his tower is proven to be structurally sound and properly engineered.

The major problems encountered encompass the difficulties with planning permission, and this would seem to be universal throughout Australia. Many amateurs in South Australia have in good faith erected an antenna under the 10 metre height limit and from thereon encountered no problems. Others have not been so lucky. Several years ago an amateur was confronted by a Council with a demand that he take his tower down. Following some negotiation, the amateur, under guidance from the Division, appealed to the Planning Appeals Board. He was represented by a very well informed, and indeed dedicated, member of our fraternity who was also supported by witnesses expert in the field of communications. We lost that case and learned some valuable lessons.

- (a) It is most desirable that the moment you enter the courts you are represented by a trained member of the legal profession;
- (b) That you should acquire the services of a professional Town Planner.

Incidentally, even after this setback, further reasonable negotiation and compromise with the Council concerned led to the amateur being able to still run his station with the tower slightly lower and located differently.

Further discussion with legal advisers, now brought upon the scene, evidenced the opinion that this case should not be proceeded with by appeal to a higher court and also a firming of the premise that we should pick only suitable cases to pursue. In other words you only push ahead and hard on a case you have a very fair certainty of winning. This is really only common sense when all is said and done.

It then came about that a certain district council in the Adelaide area seemed to suddenly take a dislike to amateur radio antennas, irrespective of their height and went about issuing notices to amateurs to remove their antennas, masts and towers. The battle really began in earnest! Much correspondence was entered into with the council with the individual operators being advised by the Division. The matter even reached the office of the Ombudsman who determined that the council was indeed being unreasonable. Even this opinion was to no avail.

The case involved a commercially built 4-element 10 metre quad type antenna, which to any amateur looked clean, tidy and an item of probably great beauty. To the council and neighbours it was an eyesore and objectionable. The council was adamant, the antenna and supporting structure must come down. The Divisional Council thought that this was a good case to fight and our legal advisers agreed. The result was an appeal by the amateur to the Planning Appeals Board, which comprises a judge and two commissioners.

Here we were in for a surprise. The judge decided that rather than listen to an argument based on the intricacies of law, regulations etc., he would hear a preliminary point. This point expressed in simple terms was to the effect of "Is amateur radio a normal home activity?"

Written evidence only was submitted by the District Council through their Planning Officer, the Department of Communications which had been subpoenaed by the Council to present evidence, a lawyer represent-

ing neighbours of the amateur concerned, and by the lawyer representing the amateur through arrangements with the Division. Little argument ensued over acceptance of the evidence except that our lawyer managed to have struck off the Council's evidence by the Planning Officer a certain amount as being only opinion. Acceptance of written evidence only reduced time and therefore cost.

The evidence provided by the Division included a survey of three metropolitan council districts with large maps indicating the location of all known amateur stations in the areas and an index describing the antenna installations at each location, copies of the Regulations Handbook, the Callbook, photographs etc. Based on the evidence thus submitted and accepted by all parties the lawyers presented their arguments. This whole process occupied the course of one day with a break for lunch. During the case it became clear that at least the judge was aware of problems with such things as TVI "especially when the cricket was on". He also was aware that such problems had nothing to do with Local Government Authorities. The court advised that it would hand down a written judgment, and so we waited for the result. Happily the result was in our favour. "Amateur radio was regarded as a normal home activity".

Let me now make a simple comment on this decision. If you carry on from your home something which is normally accepted as a household activity, it necessarily follows that you should be permitted to establish the other normal adjuncts associated with that activity. In the case of amateur radio that of course includes antennas, and their supporting structures. Thus the decision of the court was a most important one.

Subsequently the District Council appealed against the decision of the Planning Appeals Board which meant that the matter was then in the hands of the Supreme Court of South Australia.

What a blow, what worry for those concerned in fighting this case and what trepidation regarding the matter of costs etc. After much deliberation the Divisional Council decided to launch a special appeal under the title of the "Save Our Hobby

Fund". The name signifies the great importance which the Division attached to this matter. I am happy that many of the VK5 amateurs rallied to the cause and already to date an amount exceeding \$4000 has been subscribed, including donations from two of our sister Divisions. This set our minds a little easier as to the problems of cost but which way would the case go?

Such an important principle was at stake that should we now lose we would have no recourse but to go yet higher again and submit an appeal to the Full Court. Thankfully such was not for our purposes to eventuate, however you can imagine the heart tearing effect on those responsible for waging this campaign. It would, by the way, appear unlikely that the District Council will appeal further but we are still prepared for even this unlikely event.

As you will have gathered, the Supreme Court judge dismissed the appeal and again found in favour of the amateur. This case was heard in the middle of December 1981 and as yet the written judgment has not been handed down. The judge did in his verbal decision indicate that he would provide in the written judgment guidance for both the amateur radio operator and the Local Government Authorities. He agreed that amateur radio was a normal home activity and that if carried out in a normal manner should not be prevented. This of course means that you do not have to have your neighbours' permission to pursue your hobby and also that within reason the local council should also not impede your activity. The judge did not at this stage lay down any height limits on masts, however, he indicated that it seemed "normal" for an amateur to erect a mast or tower of say, 40, 50 or perhaps 60 feet in height. The outlandish case of a 200 foot tower would of course be a completely different matter and definitely would not be regarded as "normal". The judge concerned is renowned for his well considered, detailed, sound, and reasoned written judgments, and same is awaited with considerable interest.

For the first time in any Supreme Court in Australia, to our knowledge, a decision has been made both affecting and in favour of amateur radio.

Whilst you may think that a decision such as this brought down in a South Australian court would not be of use in the other States, such is not really the case. The deliberations of a judge, no doubt held in high esteem by virtue of his position, do carry a fair amount of weight when similar matters come up in courts elsewhere in the country, and even also overseas where the legal system follow a similar process to ours. In legal terms reference to a case determined such as this represents "a most persuasive argument". As such the case fought in VK5 presents a very valuable precedent on behalf of all amateur radio operators in Australia.

Over a period of time the value of such cases as this will be seen and felt by the amateur radio fraternity.

I would, however, reiterate the value of careful selection of such cases and a plan-

ned campaign carried out under legal advice to obtain the maximum benefit for our hobby.

To this end, during the latter part of 1981 the South Australian Division circulated throughout the various Divisions of the WIA, a proposal for the setting up of a National Special Purpose Fund to which the Amateur Service could have recourse under a series of guidelines, to develop such campaigns as are being fought regarding the matter of towers as at present. Please, though, do remember that the issue of towers is not the only one. There is yet to be, I believe, any litigation with respect to the matter of interference, TVI, HFI etc., and I am sure you will agree that when such do eventuate they will be of major importance to us all.

It is highly possible that the submission referred to may come up in association with a Federal Agenda item at the next Federal Convention. If you are interested in such a subject I suggest that you approach your Federal Councillor and ask to see a copy of the submission referred to, use it as a basis for discussion and then submit your ideas and comments, preferably in written form. Such ideas and suggestions as you may have could well be most valuable.

To the mind of the writer we must have the ability to fight for our own protection at any time and to do this we must have the resources in funds, knowledge and planning to call on. It is most important that we be prepared. To quote an outlandish example: "What if the Government announced tomorrow that amateur radio was to be disbanded as from the first day of next year?"

Such challenges to the welfare of amateur radio, unlikely as the one quoted may be, but just as important, must occur. It thus behoves every member of our service to get together and provide the backing both in funds and membership to support those willing workers heading our cause.

THINK ABOUT IT, then DO SOMETHING ABOUT IT.

Finally, may I humbly make just a few suggestions for the guidance of anyone contemplating pushing our cause further along these lines.

1. Call in a trained legal man right from the start.
2. Only take up cases which you have a good chance of winning.
3. Obtain the services of a professional town planner.
4. Co-ordinate your plan of campaign carefully and preferably under the auspices of your Division of the WIA.
5. Try as far as you can to negotiate with the authorities before taking the matter to court.
6. Be prepared in your negotiations to give way and to compromise. (A 40 foot tower instead of a 70 foot tower is better than no tower at all.)
7. Be realistic in your aims and adopt a reasonable position. (Do not become dogmatic regarding your case.)

8. Seek advice from others who have been through the same problems. (The VK5 Division would be pleased to help with its experience wherever possible.)
9. Learn as much as you can about such things as the regulations which apply, other cases which may present a precedent. Have as much technical expertise for witness purposes as possible, and as much written support as you can find.
10. Try and find a legal representative who can grasp technical matters. (This one is a tall order and in VK5 we have been perhaps lucky.)
11. Approach as many of your local government councillors as possible in a polite manner and present a good image of amateur radio to them. Invite them to your shack to see for themselves what it is all about. Don't forget other employees of the council either, if they speak well of you, the word will get around.
12. In most cases, litigation should be in the name of the individual alone, NOT the WIA or Club, etc. If this is not done it is possible that a lesser attitude could be taken by the courts.
13. Keep in mind the good of amateur radio for the benefit of all our fraternity both here and on a worldwide basis. ■

CALL SIGNS

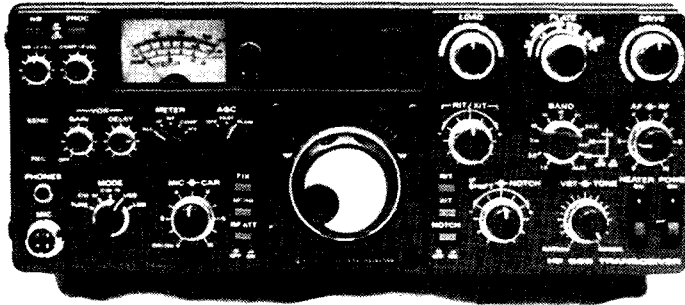
Attention of members is again drawn to the habit of omitting the prefix "VK" when announcing call signs. This is particularly noticeable in the case of phone operation.

Such practice is not in accordance with International requirements and contravenes the Wireless Telegraphy Act. Operators should be careful that they use the full call sign allotted to the station concerned.

- This appeared in AR August 1955 and is again necessary as a reminder.
- Remember that during a "session" of short to and fro transmissions it is only necessary to announce call signs at the beginning of the "session" and not less than every 10 minutes thereafter
- — and this applies equally to contacts through the repeater.
- Separate concessions apply only in respect of WICEN communications.

REMINDER
THIS WILL BE YOUR
LAST ISSUE OF AR
IF
YOU ARE STILL
UNFINANCIAL

The Kenwood TS-830 S HF Transceiver



In the August 1981 issue of *Amateur Radio* we looked at the new Kenwood TS-530S transceiver. In fact the TS-830S was the first of the two to arrive in this country, however it seems that the two would probably have been developed at the same time. Therefore the opening remarks of that earlier review apply equally to the TS-830S. Lets start by looking at just what the 830S has to offer before looking at it in detail.

The TS-830S is an all band HF SSB/CW transceiver with full coverage of all amateur bands from 160 to 10 metres, including the new bands at 10, 18 and 24 MHz. Operating features include a noise blanker with adjustable level control. It has an RF transmit audio processor with compression level control and metering of the amount of compression in dB. The usual Kenwood IF shift is now supplemented with variable bandwidth tuning and a notch filter. In addition, a wide selection of optional filters takes care of any selectivity requirements. A feature that I find new on an amateur transceiver is, believe it or not, a tone control. Both transmit and receive offset tuning are included. VOX with easy to adjust front panel controls and that old TS-820 favourite, the transmit monitor facility. Like the TS-530S, it uses 6146 tubes in the final and the whole thing is packaged into an identical cabinet and front panel assembly. From the other side of the room, it would be difficult to tell the two apart.

As the TS-530 review stated, this transceiver was actually based on the TS-820 with both sharing a single conversion plus PLL set-up. The TS-830, on the other hand, has now gone to a double conversion scheme and is actually more closely related to the R-820 receiver than to the old 820 transceiver. However, the R-820 was a triple conversion circuit using a 50 kHz section which incorporated the notch filter. The TS-830 notch filter is in the 455 kHz second IF.

A 12 volt DC operation facility is offered as an optional extra with the 830 and a 12-pin connector is provided for the AC or possible DC input. This is certainly an improvement over the 530 where the A/C cord connects straight into the set, the DC option not being available.

Possibly many present TS-820 owners are considering the 830 as a replacement or update. What does it have to offer either as a replacement or as an initial purchase for a new amateur? Briefly quite a lot, but lets look at it in some detail.

TS-830S CIRCUIT FEATURES

The double conversion circuit uses frequencies 8831 kHz and 456 kHz with the RF speech processor operating at 456 kHz. Only one option is offered for an SSB filter and this is installed as standard. For the CW man there is a wide choice of narrow filters that can be installed in either or both the 8831 or 456 kHz sections. Our review transceiver had only the standard SSB filter installed, we are therefore unable to comment on the effectiveness of the CW filters. The narrow SSB (1.8 kHz) filter offered with the TS-530S is not on the optional list for the 830 as the variable bandwidth tuning and IF shift make this unnecessary, as we shall later see. It would seem that the 830 SSB filter has been upgraded compared with the old 820. Both are 2.4 kHz at -6 dB but at -60 dB the 830 is rated at 3.6 kHz against 4.4 kHz for the 820.

The receiver front end follows that of the 530 with 3SK73 dual gate Mosfet followed by an FET buffer into two balanced FETs in the first mixer. Kenwood claim that the front end operates at low gain for improved dynamic range and low noise level. The receiver noise blanker operates in the 8831 kHz section and the notch filter which works on the old "Q" multiplier principal is in the 456 kHz section.

The variable bandwidth operates by effectively shifting the 456 kHz band pass in relation to the 8831 kHz band pass. The band width control tunes the second conversion crystal oscillator at a nominal 8375 kHz with a VXO circuit. It is pleasing to see that RF negative feedback is applied across the final parallel 6146 output stage, as in the old TS-820, but as with the 530 no third order distortion figures are quoted. The nicely presented advertising folder shows a spectrum analyzer display for 3rd

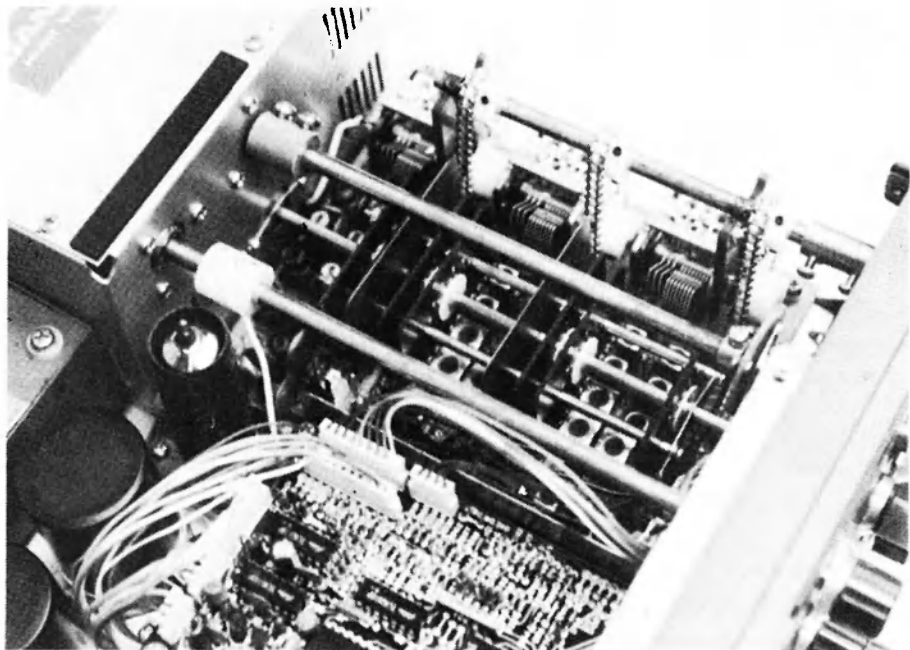
and 5th order distortion but omits to mention the graph scale. At a guess it could be about -38 dB. If so, that's a very acceptable figure.

I see that the final power input rating has been increased compared with the 820S. SSB is up from 200 to 220 watts and CW from 160 to 180 watts. Output tests show, however, that the increased input specification is not matched by more output power.

THE TS-830S ON THE AIR

The transceiver was put to test in several areas, first the VFO. We carried out several drift tests, all from a cold start and using VNG on 7.5 mHz as the standard. Over several three hour periods all under different ambient temperature conditions, maximum drift measured was only 60 Hz total — a quite remarkable figure. One odd thing was noted, however. After several hours

switched off, the VFO would come back on a slightly different frequency, maybe 150 or 200 Hz away from the previous stabilized frequency. It's not an effect that would ever be noticed in normal operation however. As with the 530, dial readout is now primarily from the digital display. The unique mono-scale dial of the TS-820 has been dropped in favour of a simple dial with 10 kHz calibration points. Tuning rate is now a rather fast four turns per 100 kHz against five for the 820. The dial movement is very smooth, however, and the new digital readout is about half as large again as the 820.



Top view of preselector/driver tuning section.

No doubt most prospective users will be interested in just how well the IF shift, variable selectivity and notch filter work out in separating signals on a crowded band. Let's look at each in turn. IF shift is certainly useful to a point, but as the high frequency content of the signal is reduced let's say to reduce the effect of a heterodyne, there is a corresponding increase in the low frequency end. It's often a case of out of the fire into the frying pan. Variable selectivity on the other hand gives a reduction in either high or low response, but this does not occur in a symmetrical manner so that by the time you have eliminated the interference the wanted signal has gone as well. Now with the 830, we have both these controls and putting the two together works wonders. As the selectivity is increased you can then shift this across the signal to provide a balanced cut at both the high and low end. SSB band width can be reduced down to perhaps one kHz and yet the signal will still be readable. For the infrequent CW operator the band width can be reduced to five or six hundred Hertz and then adjusted with the IF shift to provide the desired beat note. I get the impression that Kenwood won't be selling too many CW filters to go with the 830s. The notch

filter was most effective. While one might consider that heterodynes are a thing of the past with SSB, I find that the on-air tuner-upper is one of the greatest problems on 20 metres these days. The notch filter removes these like magic. Kenwood quote 40 dB attenuation and there is no doubt that this is easily met. We found that a heterodyne running around S9 on the meter could be reduced to S0. Putting all of these adjuncts together really means that it is possible to pull through otherwise unreadable signals. Power output was checked on each band as follows: 160, 80, 40, 20, 15 and 10 metres gave 110, 140,

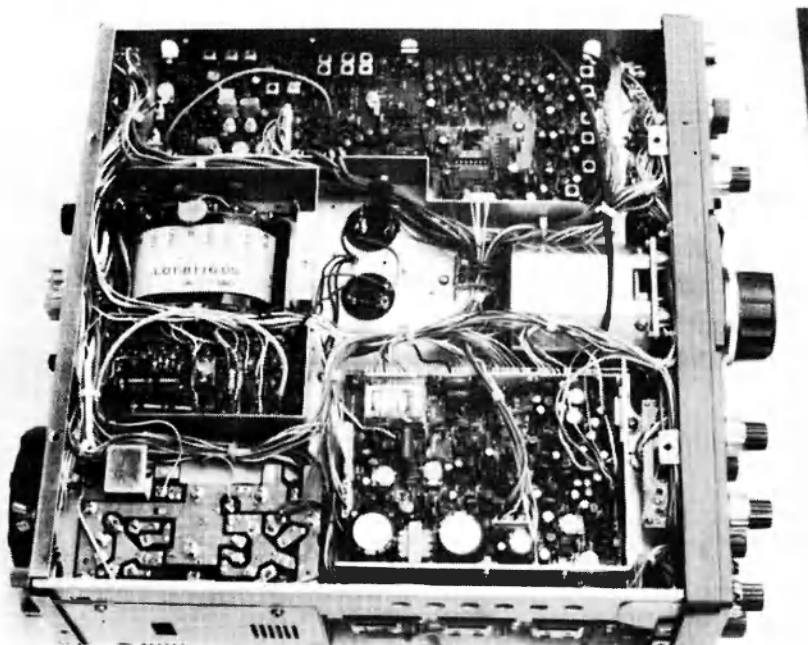
130, 115, 110 and 90 watts carrier. PEP output on each band was essentially the same when viewed on the scope. We were unable to check output on the new WARC bands as diodes have been installed to stop transmission, but a simple modification fully described in the manual allows this to be changed.

The speech processor worked well. In this test we had to rely on reports received from worked stations, but all were unanimous in their reports. There was no distortion or change in quality but a decided increase in audio level. Back to the receive side, the new adjustable noise blanker did not come up to expectations. It was quite effective on car ignition noise but had little effect on other forms of noise. Increasing the blanking level did not distort the signals to any great extent but it did introduce some cross modulation on busy and crowded bands. Cross modulation and overloading under normal conditions were totally absent. Even listening to another transmitter in the same shack did not cause any noticeable overload. VOX operation was smooth and easy, although I felt a little extra delay would be worth while. Relays are reasonably quiet. CW operation with VOX was good. With a short delay time set it was possible to approach full break in operation.

The tone control is a simple top cut type, and a useful amount of high frequency attenuation is provided. With all the other bandpass shaping circuits in the transceiver many might question its inclusion. However it works — its use I leave to you.

OPTIONAL ACCESSORIES

All of the accessories offered for use with the 830 are common with the 530, with the exception of the DC power inverter. There is a digital VFO type VFO-230, antenna



Under chassis view.

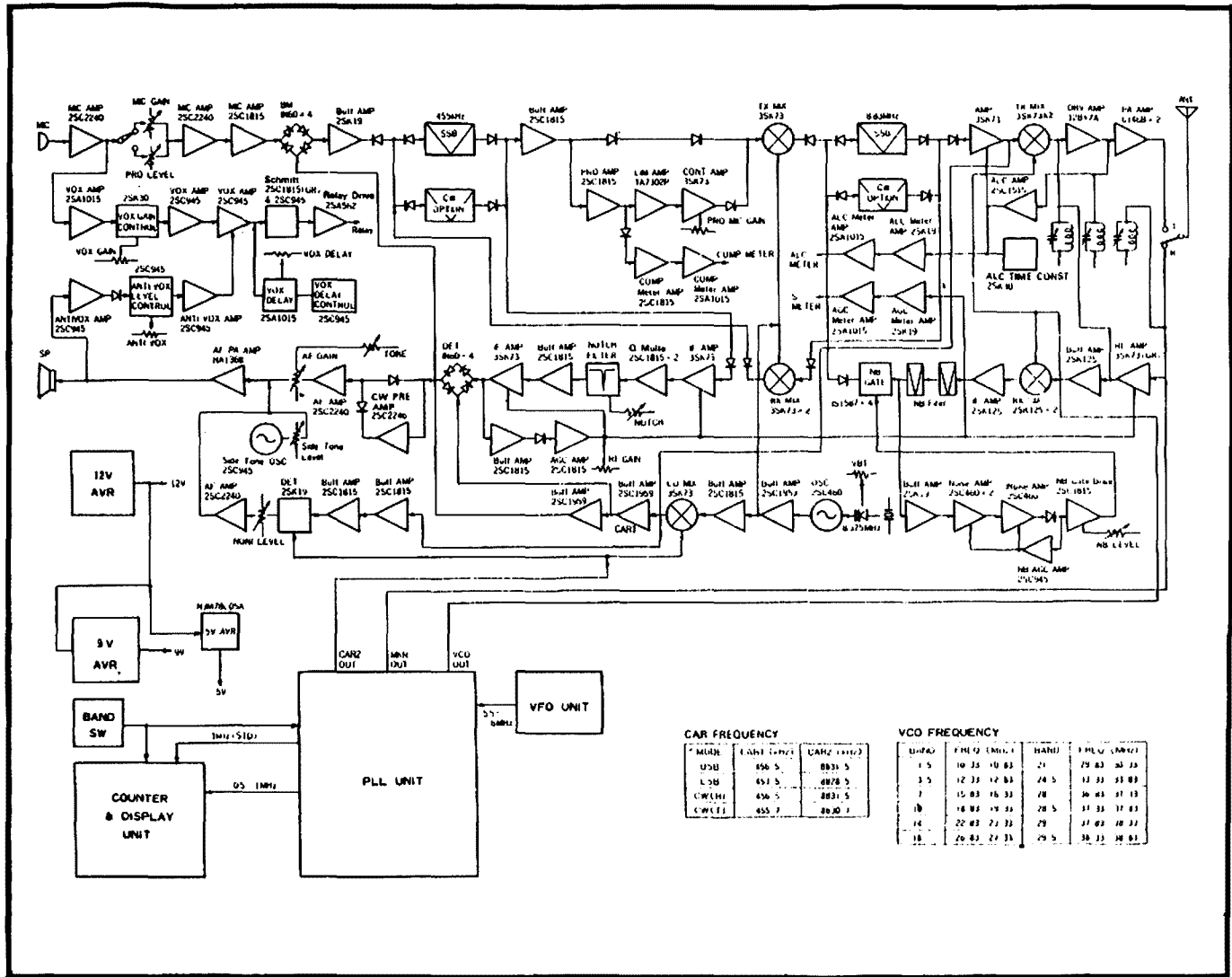
tuner type AT-230, and external speaker SP-230, which includes switchable audio filters. A linear amplifier, a range of hand or desk microphones and matching headphones are also offered. As with the 530S, a microphone is not included in the purchase price, but either high or low impedance types can be used.

INSTRUCTION BOOK

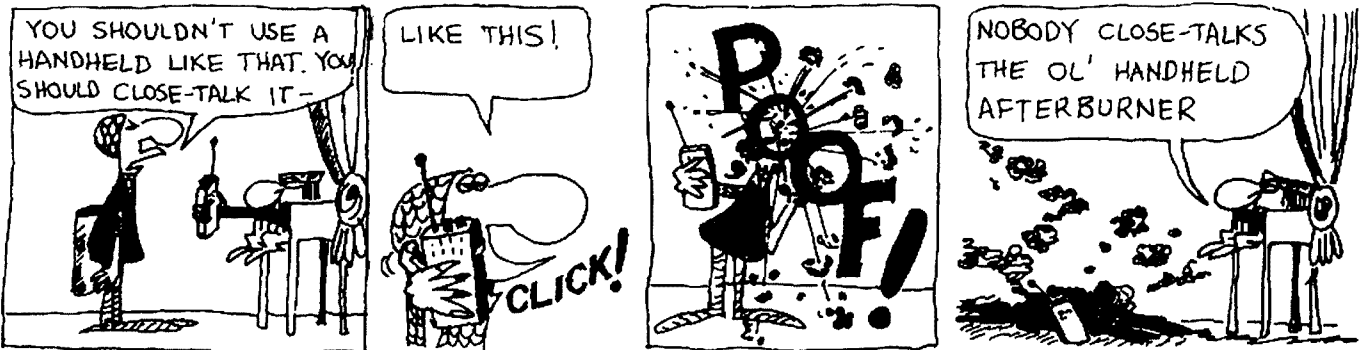
In my review of the TS-530 I noted that the instruction book was typical Kenwood. So is the one for the 830. I feel that it should not be too hard to include a circuit description section at least. Perhaps today's breed of amateurs aren't interested in how their set works just so long as it

does. But if it is considered necessary to print basic alignment details surely it's necessary to know how the set works. Having said that, the basic operating instructions are well covered with easy to understand text and clear illustrations.

Transceiver supplied by Vicom International P/L, 57 City Rd., S. Melbourne. ■



TS 830 S block diagram.



From "The Propagator", October 1981

The Saga of the Mobile Porcupine

Philip Greentree VK2DPN/ZL3TKF
(Ex VK2VUQ)

Soon after receiving my VK novice licence in February 1980, I realised that operating mobile was not a disadvantage but in fact an exciting challenge.

In my profession I drive an average of 60,000 km per year in the lower North Coast region of N.S.W., and Amateur Radio has become a valued companion during the long hours driving and many nights away from my Newcastle home. The challenge of attempting DXCC Mobile under VK Novice restrictions of 30 watts PEP and narrow allocations on 10, 15 and 80 metres was accepted. As the cards arrived I realised I was within reach of Single band DXCC Mobile and WAZ Mobile on both 10m and 15m bands.

DXCC mobile was completed in seven months under my old VK novice call VK2VUQ, and was the first DXCC mobile ever issued by the Wireless Institute of Australia. Also received was DXCC mobile from CQ Magazine. Since then I have confirmed single band DXCC on each of 10, 15 and 20m under my full grade call of VK2DPN.

In the chase for WAZ I had to wait 18 months to find Zone 34, then worked five Hams in that area in a fortnight, proving the fickle nature of propagation.

One can imagine my feelings on receiving a letter from Leo Haijsman, CQ Awards Manager, informing me that my WAZ was the first ever achieved mobile!

At the time of writing 38 zones are confirmed on 10m, 38 confirmed on 15m, 34 confirmed on 20m and 16 on 40m.

Multiband shows I only require 17 Zones to reach the CQ 150 Zone plateau — a world first for a mobile. WAC mobile has been achieved on 4 bands along with WAS mobile on 10m. I had to return an incorrect card and on receipt will apply to the ARRL for the first WAS mobile on 10m from VK.

Cards from 105 countries have been submitted to the Philippines ARS claiming the coveted DU United Nations award and believe I am one of the few VKs and the only mobile to qualify for this award. My DXCC count stands at 224 countries with 205 confirmed.

The question, no doubt, is how has this been achieved? Operating technique has been a significant factor, and I quickly adopted the philosophy "If you can hear them you can work them". However, it is a waste of time just yelling wildly in a dog-pile as the base station linears and arrays will drown a mobile out. It is important to listen for a while to the DX station's style of operating and where he has propagation to. There is always a moment when you can break through the state-side kilowatt barrier and into the back of the DX station's beam.

In confirmation of this I have the "Worked All Pacific" Award from NZ and "Worked All Pacific Countries (45 countries) from the ISWL, and can honestly say that every country was worked independently of net operation, although I greatly enjoy the "camaraderie" of internationally famous DX nets such as ANZA on 15m, the Pacific DX and the Caribbean-Oceanic DX nets on 20m.



Philip Greentree VK2DPN in front of his mobile "ham shack". Antennae (l. to r.): 10m helical, 20m whip, 15/40m duoband whip. Philip is holding the 10m helical DX whip used to gain 28 MHz DXCC, WAZ, WAS, etc.

Secondly, if attention is not paid to the antenna system, forget the whole idea, as antennas are the key items.

The photographs will demonstrate my antenna layout.

On 10m a helical whip consisting of Teflon coated aluminium wire wound round a 1.5m long fibreglass rod is used and was shortened from 11m. I added a small circular capacity hat which broadbanded the helical, giving a maximum VSWR of 1.7 : 1 from 28.2 MHz to 29.1 MHz. On my previous vehicle this was mounted on the roof racks, but I now leave this in the trunk for when there is a 10m opening. I now use another smaller helical for 10m mounted on the front left fender for local and short-haul contacts. I can also switch this antenna into the car AM/FM stereo radio system and, believe me, FM stereo booms in on 103 MHz.

Australian made Scalar resonators are used on all other bands, although my Kenwood TS130S at full power produced some interesting corona effects — particularly on the lower frequencies. I will never forget the reaction of a Highway Patrol Officer one night as we were both waiting at traffic lights. He was frantically pointing towards my 40m whip yelling out "Your car's on fire — quickly get out!". On checking I discovered that a 30 cm long corona sparking in time with SSB was looking very dramatic. I soon replaced the tuning rods with inverted conical top loading hats which solved the corona problems, broadbanded the resonators and increased their efficiency as demonstrated on a power meter.

The whips are made from aluminium tubing, cut to just over 1.5m and the multi-band base for the 40m and 15m resonators RVN in 45° offset was machined for me by another Newcastle Ham, Don VK2DXH, famous for his 12 element triband monster beam.

The antenna bases are designed and manufactured in New Zealand by ZL3RJ, and I believe them to be unsurpassed by any other base.

As the photographs indicate there are three HF mounts on the vehicle. The use of a luggage rack instead of a single roof bar is deliberate as it forms part of the ground plane. The rear mount was designed so that the antenna would be mounted above the trunk lid, giving a much better angle of radiation and avoiding the capacitive effect from the metal body of the car, as experienced with the traditional bumper mount. Rigid braces affix the vertical support pipe to each side of the car and are attached under the trunk lid.

Very close attention must be paid to the ground, more so than with a base station. The car's metal body is the antenna ground plane, and if there is any doubt about electrical contact between the roof racks and the car body, determined efforts must be made to achieve good electrical contact to the roof gutter. Small drill holes under the gutter ledge and self-tapping screws holding earthing straps from the roof racks involve little work and damage to the car and is easily rectified at trade-in time.

There is no doubt the larger the car the better the ground plane, as I am proving to myself having just changed to a new Ford Falcon, roughly 50 per cent larger than my previous medium size car.

Antennas for the various bands alter their characteristics according to their location on the mobile. Overall 10, 15 and 20m are vastly superior when mounted on the roof racks where they perform as omni-directional ¼ wave ground planes. However, 4 band mobile operation calls for compromises, hence the configuration chosen.

Fifteen metres is very directional when rear mounted, but this proved to be advantageous as being a DX band one needs only point the car in the right direction for maximum effect. What I haven't established is whether there is actually any gain derived from the directivity of the radiation

pattern following the ground plane effect of the car's metal body. What I have established is up to 5 to 6 S points drop in my signal at the other end when I transmit rear end on rather than through the ground plane of the car. Don't laugh — a compass can be very handy. The 80m resonator doesn't care where it lives, but I find 40m is best rear mounted.

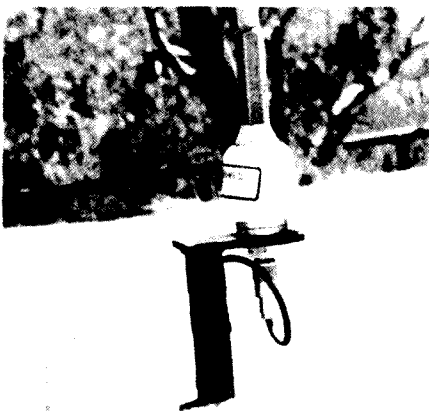
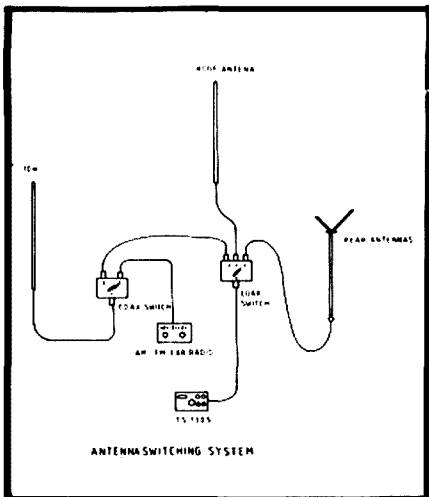
My transceiver is a Kenwood TS130S, which is a magnificent mobile unit, giving outstanding reliable service. Although the noise blanker is excellent I find a degree of extraneous noise still gets through so I use a 50 mm diameter toroid near the transceiver with the RG58 coax fed through the toroid and wound round, four times one side, crossed to the other, then wound four times in the opposite direction. Try it — it works in most cases.

I have read numerous articles on many and varied mobile systems in recent years, including articles from ZE, W1 and W4, but as a fanatical totally addicted DXer I prefer individual tuned whips for each band.

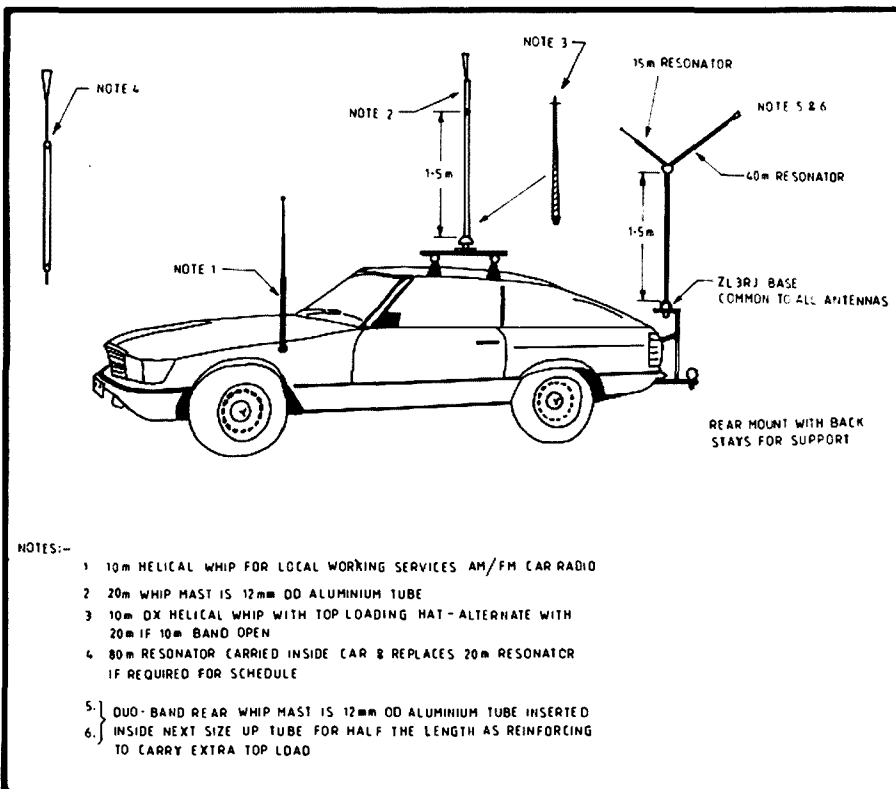
Happy mobiling and good DXing. ■



Inside the fully airconditioned ham shack at VK2DPN. Note the semi-home brew head mike on the passenger seat and 500 ohm tape recorder hand mike mounted in the lower centre of photo. Just visible is the mike switching box containing step up transformer to 50k ohms, to give high output for use with TS130S. Three-position coax switch to front of gear shift switches 10m helical from TS130S to the AM/FM car radio in dashboard. Coax switch mounted to the right of the gear shift switches TS130C between the three HF whips. Power/modulation/VSWR meter (In-line) is seen in dashboard, top left. All equipment except TS130S affixed with 3M double-sided adhesive. TS130S bracket affixed with 4 self tapping screws. TS130S uses speaker mounted centre dashboard above central airconditioning vents.



Mobile antenna base manufactured by ZL3RJ. Brass base used at bottom of aluminium whip to mount the whip in the non-standard thread of the base. Note the simplicity of mounting and feeding coax to the base.



Cocos Keeling — The Forgotten Atoll

Ken and Bett McLachlan
Box 39, Mooroolbark 3138



Cocos Keeling is comprised of two atolls containing twenty-seven small coral islands which are dotted over a five and a half square mile area and are situated in the Indian Ocean, approximately 2768 km north-west of Perth, Western Australia, and lying on the same latitude as Darwin, which is 3685 km to the east. None of the islands are more than six metres above sea level.

The whole group is in a horseshoe formation. Within this horseshoe is a most spectacular lagoon, approximately 10 km by 16 km and varying to 7 metres in depth. It is a sight to behold with water colours from a very bright aqua to a dark green. Whilst outside in the ocean the depth can be in the order of thousands of metres, virtually the islands' land mass is the top of submerged mountains jutting into the sea.

The main islands are WEST Island, which has the aerodrome and administration offices located on it and is the home of the families and staff of many Australian Government Departments. It is the largest of the group, being about 10 km long and 500 metres wide. It is very densely covered with coconut trees. HOME island is home to a Malay population of about 300. The day to day costs of the Home Island community are carried by the Clunies Ross estate, with the exception of educational, medical and dental services, which are subsidised by the Australian Government. DIRECTION Island has quite a history dating back to World War 1; the old Cable and Wireless Station located there, caused the defeat of the German cruiser "Emden" by HMAS "Sydney". On the morning of November 9th, 1914, a party from "Emden" landed on Direction Island with the object in mind of wrecking the cable and wireless installations, however before the work of destruction was complete, the "Sydney", in response to an SOS sent from the island, arrived on the scene. In the engagement that followed the "Emden" was set afire and forced to beach on North Keeling Island. The importance of the station also led to attacks in World War 2, when it was damaged in 1942 by shelling from a Japanese warship and also an infrequent air attack, however there was never any attempt to land.

SOUTH, PRISON, HORSBURGH and NORTH KEELING make up the rest of the larger islands and although there are not inhabited, they are visited regularly to harvest the coconuts, as coconuts and their products are the main commercial export. Plant life is plentiful, aided by an average yearly rainfall of 2000 mm (80 inches) and a hot climate with the average temperatures being in a range from 31°C to 21°C, with a relative humidity of around 85 per cent, although the occasional cyclone has caused widespread destruction.

British sea captain William Keeling, of the East India Company, discovered the isolated northern island in 1609, but they remained uninhabited until 1825, when Alexander Hare, an Englishman, settled there. Then in 1827 Captain John Clunies Ross, a Scottish seaman, arrived, bringing with him a number of Malays to make a second settlement. Hare and Clunies Ross both laid claim of ownership to the islands but in 1831 Hare packed up and went to Java, leaving Clunies Ross in sole possession. John Clunies Ross was the first "King of the Cocos", as the heads of the family have become known. He developed a thriving trade with Singapore, dealing in copra and oil. But Clunies Ross feared another country would take the islands, so after many attempts to have England claim them, they were finally annexed in 1857, three years after his death. In 1886, Queen Victoria granted all the land of the islands above high water mark to the Clunies Ross family. John George (John's son) increased plantations, imported machinery for processing the nuts and built mills and workshops. He built up a social structure for the inhabitants and devised a simple legal code and also introduced special Cocos money.

The airstrip on West Island was constructed in the 1940s and enlarged in 1952 with land purchased by the government from the Clunies Ross family to enable the landing and take-off of jet aircraft and, as there is no regular shipping into Cocos there is a heavy reliance on the regular fortnightly charter service operated by the Department of Transport using commercial aircraft from Perth. This flight usually arrives on Wednesdays at about 2.00 a.m. local time and, with the proximity of the housing area to the runway, a convenient alarm is created by the 727 landing which

alerts everyone that the post office will now be open, allowing the collection of much awaited mail. Actually these flights cause a little excitement to the island as most everyone trots out to see who has arrived on this flight.

Postal history is also a very interesting part of the islands. During World War 2 and until as recently as 1954 the RAAF post office operated and Australian stamps were used. In 1952 the Malaysian postal administration arrived to open a post office and began using Singapore stamps. These were used until November 23rd, 1955. Meanwhile the RAAF restricted the use of their post office to their own personnel, who enjoyed the privilege of greatly reduced postage rates. The islands became Australian territory and Australian stamps were used once again on November 23rd, 1955. Philately orientated readers may remember the interesting strip of five 22 cent stamps (pictured), which were issued on November 24th, 1980, to commemorate the 25th anniversary of Territorial States under Australian Administration. The stamps feature the Coat of Arms of the five countries that have administered the islands. British Government, 1857-1878; Government of Ceylon, 1878-1886, 1942-1946; The Straits Settlement, 1885-1942; The Colony of Singapore, 1946-1955; and the Australian Government, 1955-.

Over the past few years the population has been around 450 people, with the largest population group consisting of descendants of the original Malay people brought to the islands by John Clunies Ross between 1827 and 1831. These "Cocos-Malays" live mainly on Home Island and are Muslim by religious tradition and speak Malay. However, the total population figure has varied largely due to the construction of Australia's high security quarantine station. As the quarantine regulations have always proved a problem in this country due to the stringent laws not allowing animals in without a quarantine period, this new facility should overcome many problems.

If one looks at the map of the Indian Ocean it can be seen that Cocos Keeling is but a small speck in the vast ocean, but how welcome it must appear to our RAAF crews whilst flying on reconnaissance missions of the Indian Ocean. Two members of these crews, Alex VJ5CCT/VK9YA and

Paul VK3CGR/VK9YB, are occasionally heard from Cocos during stopovers from these missions.

In the past most amateur operations from Cocos have been on a short term basis, however of recent times Bill Stevens VK6SW, ex VK9YV, and Chris McPhee VK3BFE, ex VK9YR, are remembered for staying a little longer. Although probably the first to initiate the VK9 Cocos prefix from Direction Island was VK9AJ, who was active in 1956.

Presently, two West Australians are station on Cocos and both have set up amateur stations.

Mike VK9ZYX is very active on six metres and has pleased many with first Cocos contact. Mike is hopeful that before his tour of duty is over he will have reached other parts of the world on six metres and maybe even VK on two metres. Mike is sitting for his CW exam shortly so hopefully we will be hearing him on the HF bands soon, meanwhile he has a five element beam directed to Australia and a transceiver set up for Repeater Channel 4, and it is hoped at least to find a two metre window into VK6.

Frank VK9NYG, ex VK6NCC, was approached by VK6NE of the VK6 DX Chasers Club to assist in a scheme to change VK9 Cocos from being around 51st most wanted country to around the 151st most wanted.

Frank, a Novice, had mainly worked local VK6s with a few Europeans and a handful of American stations thrown in, but it was felt, as his tour of duty was for two years, experience would come with practical operating. As all "paper work", QSLs, etc., would be done from Perth, Frank would be able to enjoy being a rare DX station. Initially it was felt that a novice call could prove to be a handicap due to band and power restrictions, however so far this has proved otherwise. Unfortunately, after setting up the FT101E and vertical antenna, Frank discovered a "small" local problem. Due to a transient group of amateurs causing BCI and other interference problems with their high power transmitters, the neighbours on the island were far from happy, however after a very shaky start operating with about 20 watts to the vertical, Frank won the day and convinced the neighbours and they now accept it as a normal leisure time for Frank.

As the radio telephone on the island can only be operated during working hours (and even then it is not 100 per cent effective), Frank has been able to help out with many weekends messages and urgent traffic via his hobby, including many yachts that have had emergencies in the area. This has impressed the neighbours no end and they are now convinced that it is a worthwhile hobby after all.

Frank's background is Dutch and naturally he has found many Dutch speaking amateurs clamouring for a VK9Y contact. Operations started in December 1980 and by March 1981 Frank was beginning to feel more comfortable in the "pile ups"



and had greatly reduced the European and Australian demand, and by June the contact rate was around 300 per month. By September, with a brand new VFO in operation for split frequency and a TET 3 element beam on loan from friends in America, Frank's operating times became well known and it became reasonably easy to find him on 21 or 28 MHz. About this time Frank's QSO rate shot up to near 700 QSOs per month, although at the beginning of this year it had increased to 80 a day, so he began to have some niggling thoughts "What if the FT101E blows up" and become inoperable? So some spare valves were shipped out from Perth, also an IC730 (on loan from VK6NE), which is being nurtured in a heated cupboard until it is needed. This precautionary measure is taken as no amateur equipment is tropic-proofed to the necessary standard that will withstand the rigours of such high humidity.

Frank and his XYL Ann are enjoying their stay on Cocos but feel it would have been a lot different and maybe not quite so good without amateur radio.

Cres VK9YC resides on Home Island, where the Clunies Ross homestead is situated, and he is operating a FT107 into a ground plane, but he is erecting an 18 metre tower which will take an ATN beam. This he hopes will boost signals to and from his old friends back in G-land, his home QTH. However, problems could arise out of the high humidity and the close proximity to the ocean, coupled with the sea birds habits that are not conducive to a harmonious relationship for the beam.

ACKNOWLEDGMENTS

For the research and supply of material — Lillydale Municipal Library, RAAF Public Relations, Bureau of Meteorology (Victorian Regional Office), Radio Amateurs: Neil VK6NE, Jim VK6RU and Frank VK9NYG. ■

Amateur Arthropods

An arthropod has antennae, a tough hide, very little brain, and is very short-sighted — and unfortunately a few have crept into the amateur ranks. You can recognise them on air by the way they repeatedly choose the frequency, time, and mode of their activity in a way which causes maximum inconvenience to other band users.

A few examples are:—

THE 10 METRE TICKS

These either get into the beacon band, or come up on top of the Oscar downlink.

THE 6 METRE CENTIPEDES

The centipedes use the calling frequencies for long cross-town rag-chews, and are so quick on their buttons that the band can open and close to Scandinavia without their realising what's afoot (or in this case, 100 feet).

THE 20 METRE TERMITES

These come out of the woodwork all over the place because of harmonics produced when they overdrive their linear amplifiers. Ten metre operators are frequently foxed when they call back to the termite's second harmonic! The termite also does lengthy antenna tune-ups whenever the band is open to Europe.

THE 40 METRE FRUITFLY

The fruitfly tunes up on top of the nearest RTTY or SSTV signal because he either (a) thinks the signal is a commercial station, not knowing that some amateurs use modes other than Phone, or (b) knows the signal is an amateur station, but believes that amateurs shouldn't use such non-Phone modes! At other times he is heard buzzing about complaining that third party traffic destroys the dignity of amateur radio.

VK2AXI in the Propagator, October 1981.

Learning the Code — for the First Time

Alan Doble VK3AMD

It always makes me sad when I hear or overhear aspiring operators talking about the difficulties they have in learning CW.

I'm sure the greatest problem is failure to grasp the fundamental concept that the Morse code is only a phonetic form of the same English 26 letters and ten numbers that we had already mastered the sound of by the ripe old age of six.

"A" is a sound, dit dah, not a dot and a dash, and so on. One of the most successful CW teaching exercises in Australia must surely have been the war-time teaching of hundreds of people from all walks of life to become effective 20/25 w.p.m. operators in a very short time.

One place where this was done was in a temporary building on the roof of the Radio School at RMIT Melbourne.

As a help to present-day students, we publish the following extracts from the learning guidelines issued by RMIT at that time.

ACQUIRING THE CODE

In learning Morse code the beginner should adopt the "sound" method. Usually beginners first memorize the code by the "visual" method, that is, studying from a code card or chart without the aid of a key and buzzer or other sound-producing device, with the result that considerable time is spent in getting the "picture" of dots and dashes out of the mind. When a student memorizes the code by the visual method he pictures each character as being comprised of so many dots or dashes and, when endeavouring to receive signals, he unthinkingly visualizes each dot and dash before writing the characters which are transmitted. Unless the sound method is adopted no appreciable receiving speed can be obtained. This is logical when it is considered that it would be impossible for an operator to receive, say, twenty or more words per minute, if he first had to think of each character as being composed of so many dots and dashes before copying. From the beginning he should learn the sounds — say dit dah means letter A — dah dit dit means B, and so on. For preference he should never touch a key till he can read code at 10 words per minute, because keying without a knowledge of what is meant by signal rhythm usually makes a jerky sender. Until he can receive correctly he cannot tell if his own sending is correct.

It can be imagined how difficult ordinary conversation would be if the conversants had to define each word mentally before grasping its meaning; similarly it would be difficult to master the code at any appreciable speed if each transmitted character should first have to be defined as being composed of so many dots and dashes.

The foregoing paragraph should not be construed as meaning that the code cannot be acquired by the student who has

unfortunately memorized it by the visual method. By adopting the sound method this system of learning would gradually be mastered, but a great deal of valuable time would be lost meanwhile. The sound method, which is becoming the universal system of instruction, trains a student in such a manner that, upon hearing a character, he translates it immediately and instinctively into the letter for which it stands. He does this subconsciously to a certain degree, dependent upon the amount of practice involved, and finds he loses time if he tries to visualize dots and dashes, hence the truth of the above statement about trying to avoid the seeing of code illustrated with the old-fashioned A = . — and B = — . . ., etc.

The first step in acquiring the code is to learn the sound of each letter, numeral and character. Learn the code by what is known as "singing it". Start through the letters in a semi-audibly sing-song voice till the tongue can trip off dahs and dits rhythmically at speed till the alphabet can be repeated in 15 seconds without a slip. The alphabet should first be learned, then the numerals and, long after, the punctuation and other characters.

The three chief causes of the student's slow progress in receiving the code are: (1) learning the characters visually, (2) hesitating over a character, thereby losing one or more following characters, and (3) looking back over that which has been copied, thereby momentarily disrupting concentration.

After the characters have been memorized by the beginner, that is, after the beginner can send them without referring to the groups or a code chart, he should begin receiving at a speed of 5 words (25 characters) a minute. It should be kept in mind that when a speed of 5 words per minute is referred to (25 characters or letters on an average), the sender should send each character at a constant speed of 25 words per minute and to leave long gaps between the letters to make the 5 words per minute. If a letter is missed do not interrupt the sender. Copy what you can and after the transmission is finished check the copied characters to ascertain those which require more practice. In a few hours the dits will be readily distinguished from the dahs, from then on progress can be made only by copying at a speed slightly faster than you can accurately receive, and this is done by the process of reducing the time gaps between the letters.

The code cannot be acquired in a day and because progress is seemingly slow many beginners become discouraged in a short time. Determination, concentration and consistent application are the requirements for acquiring the code in a minimum length of time.

The important thing to remember is to get the rhythmic sound of letters sent at the rate of 25 w.p.m. and work on them with ever increasing gaps between letters till 25 words are actually sent in one minute.

Other difficulties encountered by code students may be summed up as follows:—

(1) Getting rid of the visual picture of the characters as being composed of dots and dashes.

(2) Trouble with a few characters. This indicates a lack of practice on these characters.

(3) Consciousness of writing. Forget that you are writing — write in your natural hand, confining your thoughts to the sound of the signals.

(4) Printing. Do not print any letters or characters until you can receive at least ten words per minute. A beginner has enough to think of in receiving without mastering another subject while receiving.

(5) Hesitating over missed letters. When a letter is missed forget it. By attempting to recall it to mind several characters will probably be missed.

(6) Wandering of mind. This denotes weak willpower or over-concentration. Usually it is better to leave Morse work alone for 5 minutes and go for a brisk walk in the open.

(7) Over-concentration. When you become tense due to over-concentration, or "hard thinking", completely relax for a few seconds and begin again.

(8) Fatigue. When the dots and dashes seem undistinguishable and several characters are lost, it is usually because the student is mentally fatigued. In such condition you should completely relax for a few seconds or do as suggested at the end of (6). No form of work is more exacting than that of copying code for an appreciable length of time. As more hours are spent in receiving it will be found that the mind will gradually become accustomed to its new task and, after more and more receiving practice, the student can copy unbrokenly over a long period of time.

It is in the early stages of code practice that future habits are formed and the student should therefore have just one idea continually in mind — ACCURACY. Great care should be exercised to have every dot, every dash, every letter, as perfect as it is possible to make it.

The student who lays a solid foundation of accuracy in code transmission will have a better foundation upon which other things, such as speed, can be built later on. A good rule to follow is to make each dot short and sharp, but firm, and each dash long enough — the length of three dots — that it will be impossible to mistake one for the other. ■

FORWARD BIAS

VK1 DIVISION

ANNUAL GENERAL MEETING

In accordance with the VK1 Division Constitution the Annual General Meeting of the Division will be held on Monday, 22nd February, 1982, at 8 p.m. in the Studio Room, Griffen Centre, Bunda Street, Canberra City. The business of this meeting will be:—

- To receive from the President, Auditor, Federal Councillor, Public Officer and other officers reports on the Division's transactions and business during the 1981 financial year.
- To elect the officers and committee members for 1982.
- To elect a Federal Councillor for 1982.
- To appoint an Auditor for 1982 and to determine his remuneration, if any.

Nominations of persons as candidates for election as officers of the Division or as committee members must be in writing, signed by two members of the Division who are holders of current Australian amateur transmitting licences and indicate in writing the acceptance of the nominee of his/her nomination for the position.

The nomination is to be delivered to the Public Officer at least ten clear days before the date of the Annual General Meeting — that is by Friday, 12th February, 1982.

Nomination forms for intending candidates for election will be available at the January meeting on Monday, 18th January, 1982.

The positions for which nominations for election will be accepted are President, two Vice-Presidents, Secretary, Treasurer, three Committee members, Federal Councillor. C. T. Vidler, Hon. Secretary, VK1 Division.

Council felt that the presentation of Federal WIA tapes on non-WIA broadcasts could give listeners a false impression that these broadcasts were conducted by sections of the WIA. Council has requested that Federal WIA tapes are supplied in future to WIA broadcasts only.

Jeff Pages VK2BYY, the Broadcast Officer, reported that the engineering console hardware was complete and the control software was being debugged. The Dural audio/control systems is controlled by a 2650 microprocessor which has reduced the quantity and cost of hardware and enhanced the control system flexibility. An intermittent oscillator fault in the Dural channel 7000 repeater was finally traced and cured.

Athol Tilley VK2BAD reported that the 5th Conference of Clubs could not proceed as only nine clubs were present, a quorum being 12. An informal meeting discussed the previously circulated agenda.

DECEMBER COUNCIL REPORT

At the December meeting of Divisional Council, Membership Secretary Steve Pall VK2VHP reported that 294 new members joined the Division in 1981, 171 failing to renew. For this month, 41 applications that were a direct result of the membership drive were received. (Approximately a 2 per cent success rate.) 15 normal applications were also received.

Broadcast Officer Jeff Pages VK2BYY reported that the engineering console had been installed at Dural. Work was continuing to overcome some RF breakthrough problems and Jeff felt they would be shortly overcome. Work was proceeding on the 160 metre transmitter and the second Collins HF SSB transmitter. A 70 cm beacon is under construction. Sue Brown VK2BSB undertook the design of a new QSL card for VK2WI, which will be used for the acknowledgement of beacon reception reports.

Federal Councillor Tim Mills VK2ZTM reported that there was a delay on UHF repeater application approvals as they must be processed by DOC in Melbourne. Outstanding UHF repeater applications will be pursued through the local office of DOC. The Federal Councillor for 1982 is Tim Mills and the Alternate Federal Councillor is Wally Watkins VK2DEW.

Steve Pall VK2VHP gave details of a building in Parramatta that appeared suitable for the relocation of the Divisional office. A full report of his investigation of suitable premises and recommendations will be presented to members for their consideration at the AGM on the 27th of March, 1982.

Morse code instruction classes will continue at the WIC in 1982. The fee for a full year of personal tuition is \$25 and any member interested in this course should contact the Divisional office.

Council discussed the requirements of the DOC regulations concerning the operation of amateur radio stations, especially Section 6.9a, which deals with the operation of a station by a person who does not hold a certificate appropriate to the trans-

missions. An example is that a limited licensee cannot operate on HF unless a suitably licensed person is also in attendance. All stations operated by the Institute or under its control, i.e. broadcasts, WICEN, etc., must be operated in accordance with the regulations.

A proposal that the Division conduct a community FM broadcast station was considered but it was felt that this proposal was not practicable.

ANNUAL GENERAL MEETING

As previously mentioned, the Annual General Meeting of the NSW Division of the WIA will be held on the 27th of March, 1982. Formal notice will be posted to all VK2 members in March. Do you have an agenda item for discussion at this meeting? Please note that no business can be discussed and voted on unless all members receive notice of such business (Article 31). Perhaps you wish to stand for election to Council. Note that any Ordinary (i.e. Full) member may nominate for election (Article 48).

The AGM is where Council reports on its management of the Division for the previous 12 months. An important agenda item is the presentation of a report concerning the relocation of the Divisional office to Parramatta. Informed discussion and voting can only occur if you, as members, make the effort to attend and participate on the 27th of March. If you are unable to attend, you can lodge a proxy (Article 39 to 43).

Note that the closing date for AGM agenda items and nominations for election to Council is 10 a.m., Thursday, 25th February, 1982.

GOSFORD FIELD DAY

As mentioned in the December Mini-Bulletin, the 25th Gosford Field Day will be held on Sunday, 21st of February, 1982, at the Gosford Showgrounds, Showground Road, Gosford. A programme can be obtained from the Divisional office or from the CCARC, PO Box 238, Gosford, NSW 2250. Disposal items for sale must be booked in advance. Contact Bill Smith VK2TS, RMB 4525, Gosford 2250, for forms and lot numbers. (Phone (043) 74 1207 AH.)

URUNGA CONVENTION

Yes, once again the Urunga Convention will be held over the Easter Weekend of the 9th to 11th of April, 1982. Details should be in the March Mini-Bulletin.

THIS MONTH'S EDITOR

Do you detect a change in style for this month's Mini-Bulletin? Regular editor Susan Brown VK2BSB is this moment (6/1/81) recovering from an appendix operation, so for this month I am in charge. Fear not, as next month should see her delicate touch on the typewriter keys, even if I have to drive her back to work! Hi!

COMING EVENTS

21st February (Sunday): Gosford Field Day, Showground Road, Gosford. Disposal lot numbers from Bill Smith VK2TS at RMB 4525, Gosford, or phone (043) 74 1207 AH.

VK2 MINIBULLETIN

NOVEMBER COUNCIL REPORT

At the November meeting Divisional Council considered a proposal from the VK2 QSL Bureau that a computer system be employed in the operation of the QSL Bureau. As this would enable more efficient operation, Council has advanced a loan to the Bureau to assist in the purchase of a suitable system.

Council discussed and adopted by-laws for the conduct of the Education Service Sub-Committee.

In his Federal report, Tim Mills VK2ZTM reported that a third party agreement with Brazil was still being negotiated and also that permission to use the AX prefix Australia-wide during the Brisbane Commonwealth Games in 1982 has been granted.

25th February (Thursdays), 10 a.m.: Close of agenda for Divisional AGM and of nominations for Council 1982-83.

21st March (Sunday): Liverpool Field Day.

27th March (Saturday), 10 a.m.: Annual General Meeting of NSW Division.

9th-11th April: Urunga Convention.

Members and clubs are invited to submit news for inclusion in this column. News for April AR must reach Box 123, St. Leonards 2065, by 27th February.

Athol Tilley VK2BAD. ■

VK4 WIA NOTES

1982 COUNCIL

Nine members have nominated for Council for 1982, hence no election is required. Where are the other people wanting to put something back into their hobby? The nominations are from Guy VK4ZXZ, Ken VK4KD, John VK4QA, Jack VK4AGY, Rod VK4NBD/YIC, Claude VK4UX, Fred VK4AFJ, Harold VK4HB and Ross VK4KRM.

The AGM will be held on 19th February in the rooms at the corner of Love and Water Streets, Spring Hill, as notified in last month's QTC.

EDUCATION

The Division has prepared updated education kits for intending licensees and "up-graders". Information has now been sent to all affiliated clubs for their use (see also QTC). A future part of these kits will be a history of our hobby in Queensland — do you have anything to contribute to this? If so, please contact the Divisional Historian, Peter VK4PJ (QTHR), as soon as possible.

FEDERAL COUNCILLOR

Council has received with regret the resignation of Alex McDonald VK4TE from the position of VK4 Federal Councillor. Alex has carried out the demanding duties of this position for a number of years as well as contributing to other areas of Divisional and Federal activity. The absence of such an able, willing and dedicated member of

Council will leave a gap that will be difficult to fill. Thank you, Alex (and Sue), for your efforts, dedication and support.

The new VK4 Federal Councillor will be David VK4DT.

FEDERAL CONVENTION 1982

Council has formulated motions to be presented to this year's Convention and these should have by now been circulated to affiliated clubs as part of the preparation for the Radio Club Workshop. It is almost too late for additional input from members. Listen to the Sunday News for "updates" on motions, then let Council know your views.

RADIO CLUB WORKSHOP 1982

Council has approved a "live-in" style workshop this year so that more ground can be covered in greater depth. The workshop this year will concentrate on formulating broad policies on matters of concern to us as amateurs, e.g. third party, licensing structures. Sample policies have been sent to your club so make sure that your delegate is as widely and deeply briefed on your views as possible. Club delegates should call into the weekly Club Net (Tuesdays 1930K on 3605 kHz).

DARLING DOWNS REPEATER VK4RDD

This repeater, sited on the Bunya mountains, has recently changed frequencies to an input of 146.150 MHz and an output of 146.750 MHz. ■

QSP

NEW CELLS FOR OLD

In what seems to be a repeat of what we used to do in the war with carbon zinc cells, David Foster, writing in "Radio Communication", tells a new and interesting story about the rejuvenation of old nicads. The procedure during the war days was to drill a hole in the cell top and pour in some glycerine. This seemed to give the cell a new lease of life as it restored the water balance somehow and enabled old cells to be used again — remember, it was nearly impossible to buy new ones. David Foster G3KQR, suggested drilling a tiny (No. 55 drill) hole through the gassing vent, which he tells us is under the positive terminal, sometimes obscured by a brass soldering terminal. He advises shallow penetration of the vent. He says that this is made of synthetic rubber which is sandwiched between the "top hat" of the positive terminal and the top disc, the two metal portions being spot welded together. He recommends access to the cell by use of a hypodermic needle and syringe thrust through the top vertically, through the rubber into the cell. He suggests that alternate suction and pressure with distilled water used in the syringe will do the trick. He says that about 3 ml of water is needed for the rejuvenation of the small nicads, although it is not clear from the article exactly to what size he refers. The needle "track", he explains, will heal as the hypodermic is withdrawn. He claims he has treated hundreds of cells this way with a high percentage of return to life. Might be worth a try!—Westlakes Newsletter. ■

THE WIA BOOK Vol. 1

*A Slight Delay
because of holidays*

WIA FEDERAL DIRECTORY

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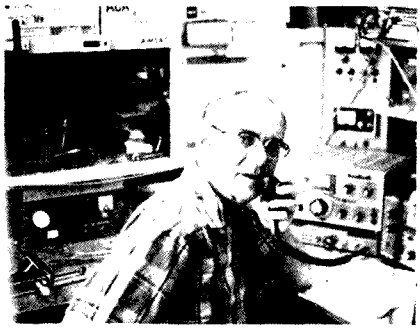
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VK6 — Mr. N. R. Penfold VK6NE.
VK7 — Mr. P. Fudge VK7BO.

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VK5 — Mr. W. M. H. Wardrop VK5AWM.
VK6 — Mr. B. Hedland-Thomas VK6OO.
VK7 — Mr. M. J. Hennessy VK7MC.

AMSAT AUSTRALIA



R. C. Arnold VK3ZBB

Some months ago AMSAT requested its members to complete a questionnaire to obtain opinions on the future satellite programme. By a majority of 3 to 1 respondents favoured high altitude orbits with higher frequency transponders. However, there was strong advocacy for some Mode A activity, particularly to encourage newcomers.

AMSAT is appreciative of the support of members and for the constructive comment received via the questionnaires.

The Australian AMSAT Net conducted by Chas Robinson VK3ACR commences at 1000Z each Sunday. Due to propagation problems the net has switched to 7064 kHz for the summer period and will revert to 3680 kHz about the end of April.

In December AR 1 credited Colin VK5HI with receiving the first signals from UOSAT. This was incorrect and Colin has asked me to give credit where it is due with the following correction: "Following the monitoring by many amateurs of the launch of UOSAT Graham VK5AGR and Glenn VK5ZCF elected to monitor orbits 2 and 3 in the early hours of the morning. Their reward was to hear a steady carrier running a 1200 Hz tone. The following afternoon Graham, Glenn and Terry VK5GU monitored orbit 11 and recorded 1200 band ASCII. Subsequently Graham and Terry (who were fortunate to be on leave) recorded most orbits during the first two weeks of UOSAT's life for the benefit of other local amateurs."

Colin has sent a most interesting resume of his work in decoding the 1200 band ASCII. I will try to include this in my notes at some future date, meanwhile I must give the Editor every chance to continue the reprint of the UOSAT Technical Handbook (with thanks to AMSAT-UK).

December 17th saw the long awaited launch of additional Russian amateur satellites. Three were expected but our eyes opened in amazement as we counted six sending out their telemetry from the first orbit. These satellites are of the RS series (Mode A) and numbered RS3 to 8 inclusive. Each satellite has a slightly different set of parameters which will cause them to catch up with and pass each other as time passes.

The parameters as at 1st January, 1982, are:—

RS No.	Time per Orbit (mins.)	Angular Increment °W	Height at		Inclination
			Apogee	Perigee	
3	118.52025	29.75679	1688	1577	82.9606
4	119.39679	29.97606	1691.5	1640.5	82.9566
5	119.55572	30.01583	1689.9	1665.2	82.9590
6	118.71899	29.80655	1690.5	1592.5	82.9592
7	119.19576	29.92619	1688.9	1624.2	82.9568
8	119.76628	30.02853	1693.4	1657.1	82.9568

Each of the satellites has at least one beacon transmitting the binary derived format series similar to RS1 and 2. There are 35 parameters despite the seven letter prefixes, the others of which can be identified with an additional "dit" in front of the K, D, O, etc., making them sound like different letters, i.e. "D" would sound like "L", etc. The actual format can be the same whether the service channel is on or not, thus no prefix, a straight K, D, O, G, U, S, W, sequence would indicate things

are quiet, apart from the beacon, while "EK", "ED", "EO", etc., would be set when all is going.

Thus with activity the prefix goes to E, the "I" pre-prefix can go to "S", e.g. "IK" to "SK", "ED" to "SD", etc., the normal non-active "N" prefix to "R", the normal "A" to "U" and the normal "M" to "W", all by the extra "dit" of information. The satellite is identified during each TLM sequence.

RS SATELLITE CHANNEL 1

Letter	Content	Calculation
K	Output Power Transponder	$0.2 \times n^2 = \text{mW}$
D	Voltage of Source	$n \times 0.2 \text{ volts}$
O	Charge Current	$20 \times (100 - n) \text{ mA}$
G	?	
U	?	
S	Temp. Regulator	$T = n^\circ\text{C}$
W	Temp. 10m Tx	$T = n^\circ\text{C}$

CHANNEL 2 Prefix "I" or "S" (active)

Letter	Content	Calculation
K	Output Power Transponder	$0.2 \times n^2 = \text{mW}$
D	Zero Adjust TLM	A figure
O	Beacon Output Power	$0.2 \times n = \text{mW}$
G	Sensitivity Transponder	$n = \text{—dB (reg)}$
U	"S" Meter 1st Rx	$0.1 \times (n - 10) = \text{"S" units}$
S	"S" Meter Robot Rx	$0.1 \times (n - 10) = \text{"S" units}$
W	"S" Meter 2nd Rx	$0.1 \times (n - 10) = \text{"S" units}$

CHANNEL 3 Prefix "N" or "R" (active)

Letter	Content	Calculation
K	Output Power Transponder	$0.2 \times n^2 = \text{mW}$
D	?	
O	?	
G	?	
U	?	
S	?	
W	?	

CHANNEL 4 Prefix "A" or "U" (active)

Letter	Content	Calculation
K	Output Power Transponder	$0.2 \times n^2 = \text{mW}$
D	9V Transponder Line	$0.1 \times n = \text{V}$
O	7.5V Transponder Line	$0.1 \times n = \text{V}$
G	9V 1st Stabiliser	$0.1 \times n = \text{V}$
U	7.5V 1st Stabiliser	$0.1 \times n = \text{V}$
S	9V 2nd Stabiliser	$0.1 \times n = \text{V}$
W	7.5V 2nd Stabiliser	$0.1 \times n = \text{V}$

CHANNEL 5 Prefix "M" or "W" (active)

Letter	Content	Calculation
K	Output Power Transponder	$0.2 \times n^2 = \text{mW}$
D	On Board Log	$n = \text{No. of QSOs} \pm 1$
O	Heater Control	$n \times 0.1 = \text{watts}$
G	Robot Input Power	$n \times 20 = \text{mW}$
U	Service Channel Power	$n = \text{—dB}$
S	Sensitivity of Robot	$n = \text{—dB}$
W	Sensitivity of Service Rx	

In addition to the TLM, the satellites have a transponder and/or "Robot", a number of which were operational at new year — the time of preparing these notes.

The "Robot" will call CO on (say) 29.330 MHz and a station needing a QSO should call on (say) 145.830 MHz as follows: "RS0 de (your call) AR". The response

will come back on 29.330 MHz "(Your call) de RS0 QSO Nr 001 (your call) de RS0 QSO Nr 001 OP ROBOT T U FR QSO 73 SK". The QSO number will be serialised and of course the satellite number (RS0) will be that of the satellite concerned.

The frequencies of operation are (data as at 3/1/82):—

RS	Beacon	Transponder		Robot	
		Up	Down	Up	Down
3	29.320	—	—	145.820	29.320
4	29.360 29.452	145.86-145.90	29.36-29.40	—	—
5	29.330 29.450	—	—	145.826	29.330
6	29.410 29.500	145.91-145.95	29.41-29.45	—	—
7	29.340 29.460	—	—	145.835	29.340
8	29.500	145.96-146.00	29.46-29.50	—	—

PREDICTIONS					
Date		AO8		UO9	
		Eqx. GMT	Eqx. °W	Eqx. GMT	Eqx. °W
1982	February 1	0043	79	0048	146
	February 7	0110	85	0117	153
	February 14	0141	94	0133	157
	February 21	0030	76	0013	137
	February 28	0101	84	0027	139

Any information to update these notes would be appreciated by Chas VK3ACR or myself.

Good news for a Phase IIIB launch on 6th July, 1982. Ariane LV LO4 was successfully launched on 14th December, en-

abling MARECS-A to be placed in geosynchronous orbit and thus paving the way for L5 and L6 to be on time. L6 will carry Phase IIIB.

Acknowledgements to:— AMSAT-UK, W6CG, VK3ACR, VK5HI, VK7PF.

Reproduced from UOSAT Technical Handbook — and Overleaf.

STATUS POINTS

01	145 MHZ GENERAL DATA BEACON	ON/OFF
02	435 MHZ ENGINEERING DATA BEACON	ON/OFF
03	PRIMARY SPACECRAFT COMPUTER	ON/OFF
04	CCD CAMERA MODULE	ON/OFF
05	RADIATION DETECTOR - A	ON/OFF
06	MAGNETOMETER EXPT.	ON/OFF
07	7 MHZ BEACON EXPT.	ON/OFF
08	14 MHZ BEACON EXPT.	ON/OFF
09	21 MHZ BEACON EXPT.	ON/OFF
10	28 MHZ BEACON EXPT.	ON/OFF
11	2.4 GHZ BEACON EXPT.	ON/OFF
12	10.47 GHZ BEACON EXPT.	ON/OFF
13	145 MHZ COMMAND RX	SQUELCH 0= signal present
14	435 MHZ COMMAND RX	SQUELCH 0= signal present
15	STATUS CALIBRATE	
16	BCR STATUS	A/B
17	H.F. BEACONS EXPT. SYNTHESISERS	ON/OFF
18	TELECOMMAND DECODER STATUS	GROUND/PRIMARY COMPUTER
19	MAGNETORQUER	ON/OFF
20	PRIMARY S/C COMPUTER BLOCK LOAD PROT	ENABLE/DISABLE
21	SECONDARY S/C COMPUTER DATA O/P	
22	SECONDARY S/C COMPUTER CLOCK	INTERRUPT FAILURE
23	SECONDARY S/C COMPUTER PROCESSOR	RUNNING
24	SECONDARY S/C COMPUTER POWER-DOWN	ON/OFF
25	14MHZ H.F. BEACON SYNTHESISER LOCK	IN/OUT
26	21MHZ H.F. BEACON SYNTHESISER LOCK	IN/OUT
27	28MHZ H.F. BEACON SYNTHESISER LOCK	IN/OUT
28	RADIATION DETECTOR - B	ON/OFF
29	TIP MASS UNCAGING CONFIRMATION	YES/NO
30	SPEECH SYNTHESISER POWER	ON/OFF
31	VISUAL DATA DISPLAY MEMORY	ON/OFF
32	GRAVITY GRADNT. BOOM MOTOR POWER	ON/OFF
33	SECONDARY S/C COMPUTER POWER	ON/OFF
34	HF BEACONS EXPT. POWER	ON/OFF
35	NAVIGATION MAGNETOMETER POWER	ON/OFF
36	S/C COMPUTER MEMORY ERROR BIT -1	
37	S/C COMPUTER MEMORY ERROR BIT -2	
38	S/C COMPUTER MEMORY ERROR BIT -3	
39	STATUS CALIBRATE	
40	PRIMARY S/C COMPUTER DATA UART I/O	ACTIVE
41	GRAVITY GRADIENT BOOM MOTOR	FORWARD/REVERSE
42	MAGNETORQUER POWER	FORWARD/REVERSE
43	MAGNETOMETER EXPT.	CALIBRATE
44	NAVIGATION MAGNETORQUER	SAFE/ARM
45	GRAVITY GRADIENT BOOM MOTOR	SAFE/ARM

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QSP

TECHNICAL ARTICLES

Some time ago we were told that "Amateur Radio" "didn't contain much technical stuff of any consequence", and, as usual, we set about to reply. "We can only print what the boys send in".

Looking back over these remarks, the Magazine Committee decided to do something about this old question which is ever new, and, with the help of one of our advertisers, who appreciates our efforts and support, we were able to offer last month a very desirable prize for the best technical article published in the September, October and November issues. We are anxious to see that such articles materialise, and would suggest that, if you can't write such an article, perhaps you could approach some scientifically-minded person to help "Amateur Radio" along. We have compiled a list of likely people in Melbourne — University professors, laboratory chiefs and assistants, factory engineers and experimenters — and think that other States might do the same.

You would not be seeking an article for an unknown magazine. "Amateur Radio" is just about two years old now, and does occupy a forward position amongst "ham literature" in Australia.

Remember that oft-repeated statement that "Amateur Radio" is a true reflection of the amateur experimental mind, as all we print finds its source in the "ham" fraternity.

So, if you don't see just what you want in "Amateur Radio", it's up to you to remedy this state of affairs.

Reprinted from AR August 1935.

We again appeal for good technical articles for AR if we may do so.

The WIA is in business for more members. Please help.

TELEMETRY SENSOR ALLOCATION:

CHANNEL	PARAMETER	RANGE	Calc. Equation
00	SECONDARY S/C COMPUTER (F100L)	0 - 1A	$I = 1.2N \text{ mA } (0.125A < I < 1A)$
01	SOLAR ARRAY CURRENT +X	0 - 2A	$I = 1.5N$
02	BATTERY HALF VOLTAGE	0 - 10V	$V = N/100 * (1.01)$
03	RADIATION DETECTOR A O/P	0 - 5V	$Count = 40N * (11.04)$
04	RADIATION DETECTOR B O/P	0 - 5V	$Count = 40N * (11.04)$
05	MAGNETOMETER EXPT. HX-COARSE	0 - 5V	$V = N/200 * (1.01)$
06	MAGNETOMETER EXPT. HY-COARSE	0 - 5V	$V = N/200 * (1.01)$
07	MAGNETOMETER EXPT. HZ-COARSE	0 - 5V	$V = N/200 * (1.01)$
08	BATTERY PACK-A TEMPERATURE	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
09	SPACECRAFT FACET TEMPERATURE +X	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
10	VISUAL DISPLAY EXP1 & CCD CURRENT	0 - 1A	$I = 1.2 * (N-25) \text{ mA } (0.125A < I < 1A)$
11	SOLAR ARRAY CURRENT +Y	0 - 2A	$I = 1.5N$
12	2.4 GHz BEACON EXPT. POWER O/P	0 - 2000mW	$P = (N-99) * 0.633 \text{ mW}$
13	RADIATION DETECTORS EXPT. EMI VOLTS	0 - 1000V	$V = N \text{ volts}$
14	RADIATION DETECTORS EXPT CURRENT	0 - 250 mA	$I = (N-20)/8 * (0.9N) \text{ mA}$
15	MAGNETOMETER EXPT. HX-FINE	0 - 5V	$V = N/200 * (1.01)$
16	MAGNETOMETER EXPT. HY-FINE	0 - 5V	$V = N/200 * (1.01)$
17	MAGNETOMETER EXPT. HZ-FINE	0 - 5V	$V = N/200 * (1.01)$
18	BATTERY PACK-B TEMPERATURE	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
19	SPACECRAFT FACET TEMPERATURE -X	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
20	SPACECRAFT COMPUTER CURRENT	0 - 1A	$I = 1.2 * (N-25) \text{ mA } (0.125A < I < 1A)$
21	SOLAR ARRAY CURRENT -X	0 - 2A	$I = 1.5N$
22	BATTERY / BCR +14V BUS	0 - 20V	$V = N/50 * (1.05B)$
23	SUN SENSOR +Z AXIS	0 - 5V	$V = N/200 * (1.01)$
24	10.4 GHz BEACON EXPT. CURRENT	0 - 250 mA	$I = (N-40)/4 * 0.97$
25	MAGNETOMETER EXPT. TEMPERATURE	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
26	MAGNETOMETER EXPT. CURRENT	0 - 250 mA	$I = (N/B) * 0.9945$
27	TELECOMMAND RECEIVER CURRENT	0 - 250 mA	$I = (N-161)/8 * (10.952) \text{ mA}$
28	MODULE BOX ASST. TEMPERATURE +X1	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
29	SPACECRAFT FACET TEMPERATURE +Y	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
30	BATTERY CHARGE CURRENT	0 10 +5A	$I = 3N \text{ mA}$
31	SOLAR ARRAY CURRENT -Y	0 - 2A	$I = 1.5N$
32	POWER CONDITIONING MODULE +10V	0 - 20V	$V = N/60 * (0.93)$
33	TELEMETRY SYSTEM CURRENT	0 - 20 mA	$I = (N-161)/30 * (1.084) \text{ mA}$
34	2.4 GHz BEACON EXPT. CURRENT	0 - 250 mA	$I = 0.4 * (N-11) * (1.072) \text{ mA}$
35	145 MHz DATA BEACON POWER O/P	0 - 2000mW	$P = (N-82) * 1.67$
36	145 MHz DATA BEACON CURRENT	0 - 250 mA	$I = (N-7)/4 * 0.104$
37	145 MHz DATA BEACON TEMPERATURE	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
38	MODULE BOX ASST. TEMPERATURE -X1	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
39	SPACECRAFT FACET TEMPERATURE -Y	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
40	+14V LINE CURRENT	0 - 5A	$I = 2.86N \text{ mA}$
41	+5V LINE CURRENT	0 - 5A	$I = 1.28 * (N-50) \text{ mA } (0.075A < I < 1A)$
42	POWER CONDITIONING MODULE +5V	0 - 10V	$V = 2N/300 * (1.12)$
43	SUN SENSOR -Z AXIS	0 - 5V	$V = N/200 * (1.01)$
44	Hf BEACONS EXPT. CURRENT	0 - 250 mA	$I = (N-361)/3 * 0.1036 \text{ mA}$
45	435 MHz DATA BEACON POWER O/P	0 - 2000mW	$P = (N-102) * 1.792$
46	435 MHz DATA BEACON CURRENT	0 - 250 mA	$I = (N-341)/3 * 0.1053 \text{ mA}$
47	435 MHz BEACON TEMPERATURE	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
48	MODULE BOX ASST. TEMPERATURE +Y1	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
49	SPACECRAFT FACET TEMPERATURE +Z	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
50	+10V LINE CURRENT	0 - 5A	$I = 3N \text{ mA}$
51	-10V LINE CURRENT	0 - 5A	$I = 1.3 * (N-60) \text{ mA}$
52	POWER CONDITIONING MODULE -10V	0 - 20V	$V = 0.0158N - 0.0224 \text{ N } (N \text{ of } +10V \text{ line})$
53	NAVIGATION MAGNETOMETER X-AXIS	0 - 5V	$V = N/200 * (1.01)$
54	NAVIGATION MAGNETOMETER Y-AXIS	0 - 5V	$V = N/200 * (1.01)$
55	NAVIGATION MAGNETOMETER Z-AXIS	0 - 5V	$V = N/200 * (1.01)$
56	SPEECH SYNTHESIZER CURRENT	0 - 250 mA	$I = (N-161)/10 * 0.1009 \text{ mA}$
57	CCD IMAGER TEMPERATURE	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
58	MODULE BOX ASST. TEMPERATURE -Y1	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$
59	SPACECRAFT FACET TEMPERATURE -Z	-30 10 +50°C	$Temp = (474-N)/5 * (1.01) \text{ Degrees C}$

Phased Vertical Antennas

Two identical vertical antennas can be installed as a phased array. When excited directly by RF energy, gain is achieved by the control of the directional pattern. This control results in added gain by sharpening lobe patterns and concentrating the radiated energy at very low angles. Signal flutter is reduced and reception is vastly improved. Phased array will reduce installation height requirements and still maintain low angle radiation. Most effective spacing for a bi-directional array is half wavelength.

When two verticals are excited in phase the radiation is broadside to the plane of the verticals, offering a gain of 3.8 dB and bi-directional characteristics. Side attenuation of 30 dB gives good signal reduction for undesired direction.

When excited out of phase, these same verticals give an end-fire or bi-directional pattern in the direction through the plane of the verticals. Signals are then nulled out in the broadside directions. More gain is exhibited by the broadside pattern over the end-fire which offers a wider frontal pattern. Forward gain is 2.3 dB and side attenuation is 20 dB. Both arrangements offer advantages over a single vertical since either phasing combination exhibits noticeable signal gain with side attenuation of undesired signals. Added gain and low-angle vertical directivity are features of the phased array.

Phased verticals may be spaced either one-quarter wave or one-half wave, resulting in variations in gain and directional characteristics. The nulls of the phased array are very sharp. When both feedlines to the verticals are the same length, the currents arrive at the base of each antenna at the same time, giving the in-phase broadside pattern. When one feedline is a half wavelength longer than the other, the current arrives at the base of one antenna before the other, giving the out-of-phase end-fire patterns.—From "Lyrebird" (Hy Gain Engineering Report).

QSP

MARCONI SCHOOL CLOSES AFTER 66 YEARS

The Marconi School of Wireless, having trained thousands of Australian broadcast operators since the 1920s, has closed. The school, part of AWA, accepted its first students on August 13, 1913, under the name of The Marconi and Telefunken College of Telegraphy; it became the Marconi School of Wireless in 1914. The school has mainly served the needs of marine operators, but from the introduction of radio in the 1920s till last year has provided training for broadcast operators. For most of its history it was the major training facility for operators and for many years the only one. The school has seen the entire history of Australian broadcasting from the first days of the sealed-set "subscription radio" through to colour television and remote area television via satellite. During the 1950s the school saw its peak with courses in every State and more than 1300 students enrolled. The success of the school over the years owes much to its manager, Cos Bardwell, one of its early graduates, who became an instructor in 1939 and manager in 1942.—Video-Tronics.

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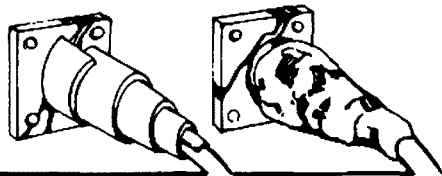
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VHF-UHF AN EXPANDING WORLD

Eric Jamieson, VK5LP
Forrester, S.A. 5233

VHF/UHF BEACONS

For 28 MHz beacons refer October 1981,

but add the following to that list:—

Freq.	Call Sign	Location
28.216	VE2TEN	— Quebec
50.005	H44HIR	— Honiara
50.005	VS5VHF	— Natal, South Africa *
50.008	JA2IGY	— Mie
50.020	GB3SIX	— Anglesey
50.023	HH2PR	— Haiti
50.025	6Y5RC	— Jamaica
50.035	ZB2VHF	— Gibraltar
50.036	HC1JX	— Quito
50.038	FY7THF	— French Guiana
50.040	WA6MHZ	— San Diego
50.048	VE6ARC	— Alberta
50.050	ZS3E	— South Africa
50.062	PY2AA	— Sao Paulo †
50.070	YVZZ	— Caracas
50.080	TI2NA	— Costa Rica
50.088	VE1SIX	— New Brunswick
50.100	KH6EQI	— Pearl Harbour
50.498	5B4CY	— Cyprus
51.022	ZL1UHF	— Auckland
52.013	P29SIX	— New Guinea
52.150	VK5KK	— Arthurlton
52.200	VK8VF	— Darwin
52.250	ZL2VHM	— Palmerston North
52.300	VK6RTV	— Perth
52.320	VK6RTT	— Carnarvon
52.330	VK3RGG	— Geelong
52.350	VK6RTU	— Kalgoorlie
52.370	VK7RST	— Hobart
52.400	VK7RNT	— Launceston
52.420	VK2WI	— Sydney
52.425	VK2RGB	— Gunnedah
52.435	VK3RMV	— Hamilton
52.440	VK4RTL	— Townsville
52.510	ZL2MHF	— Mt. Climie
53.000	VK5VF	— Mount Lofty ‡
144.400	VK4RTT	— Mt. Mowbullan
144.420	VK2WI	— Sydney
144.475	VK1RTA	— Canberra
144.550	VK5RSE	— Mt. Gambier
144.600	VK6RTT	— Carnarvon
144.700	VK3RTG	— Vermont
144.800	VK5VF	— Mt. Lofty
144.900	VK7RTX	— Ulverstone
145.000	VK6RTV	— Perth
147.400	VK2RCW	— Sydney
432.410	VK6RTT	— Carnarvon
432.440	VK4RBB	— Brisbane
432.450	VK3RMB	— Mt. Bunningyong

* Indicates a new beacon listing.

† Indicates a frequency correction.

‡ Indicates this beacon has resumed operations again.

On the subject of beacons, a letter from Lindsay VK5GZ reports he copied the VS5VHF in East Natal, South Africa, on 28.2025 MHz, with the following details: "V V V de VS5VHF beacon on 28.2025, 50.005 and 144.925 MHz V V de VS5VHF

please QSL to ZS5TR or phone 031 75 3125 . . . etc."

This confirms my listing of ZS5VHF on 28.2025 in the October 1981 list, and the 6 metre beacon has now been listed with this issue.

Lindsay also confirms hearing VE2TEN on 28.216 MHz on 9/11/81, this being a propagation study beacon in Chicoutimi, Quebec, and to QSL via VE2FIT. He also refers to a query from VK3DGQ asking for information re a beacon signing ST6NANU on 28.230 MHz. I suggest it is probably an FSK signal not being resolved correctly.

A LETTER FROM GIBRALTAR

Tony Leeming ZB2GW has written as follows:—

"I am very interested in 6 metres and would like to make a QSO with Australia or New Zealand. I would be prepared to try making contact by means of a sked with any interested amateurs.

"In addition there is a 6 metre beacon here in Gibraltar, ZB2VHF, which is on 50.035 MHz. If any person hearing this beacon could give me a phone call we could attempt a contact. My home phone is Gibraltar 65240, office number 65664 (0700 to 1600 GMT, Monday to Friday). There is also another 6 metre operator, Jimmy ZB2BL, phone 70170. We are both equipped to receive and transmit from 50 to 54 MHz."

There is something for you DX hounds to have a lash at, and with another equinox coming up soon it might still be just possible to make such a contact before all effect from cycle 21 disappears. If you would care to write to Tony Leeming, his address is Box 292, Gibraltar, Europe.

SIX METRES

The Es "season" now mostly behind us was one of mixed blessings. At times one could think it was more variable than some years, at other times one might be tempted into thinking it was generally better. What has been apparent was the number of occasions JAs and ZLs have been worked, and from a VK5 viewpoint I think we could safely say openings to ZL in particular have been frequent and often spectacular, with many stations being worked at times, and covering the four ZL districts.

My thanks to Bob VK5ZRO, that "watch-dog" of the air, for adding to the information I had already assembled myself, and for those of you unable to be around when the bands have been open, here is a resume of what took place, as seen from the VK5 end. Circumstances would probably be roughly similar in other places in this large country of ours.

17/11/81: VK2, VK4, ZL1, from 1000 to 1207Z. 18/11: VK6 from 0423 to 0546Z. 20/11: VK2ZXB 0939Z. 21/11: From 0647Z b'g opening to Japan with signals to S9, from JA1, 3, 4 and 6. From 0822Z JA1, 2, 3 and 5. 22/11: ZL2. 25/11: 0720 to 0810Z, JA1, 2, 3 to S9. VK4ABP and VK4ZGO 0915 to 1006Z. 27/11: 0700 ZL3. 29/11: 0005 to 0133Z, JA1, 2, 3, 4 and 6 to S9. 0700Z VK4ZJB, 0916Z VK6RO, VK6GL. 3/12: 0749Z ZL3NE, 0850Z ZL3ADT, both S7. 5/12: 0712 to 0952Z ZL2 and ZL3,

many stations to S9. 6/12: 0320 to 0342Z VK6KZ, VK6AB, VK6ZDX, VK6RO. 10/12: 0741 to 1000Z, many VK2 to S9. 12/12: 2200 to 2330Z VK2, VK4.

13/12: 0013 to 0108Z VK2 and VK6, many stations to S9. 15/12: 0900Z ZL3 to S9. 19/12: 0920Z ZL3ADT, 1108 to 1333Z VK2 and VK7. 20/12: 0400Z VK6. 21/12: 0927 ZL2 then VK7 at 0937Z. 23/12: 0810 to 1123Z, many ZLs from ZL2, ZL, and ZL4. At 1240Z VK7. 24/12: 0858Z ZL2KT, then next day (Christmas Day) still in GMT time: 2305 to 2355Z VK2, VK4, VK7. 26/12: Quite a day, VK1, 2, 3, 4, 5, 6, 7, 8, JA1, JL1, ZL1, 2, 3, all between 0145 and 1116Z. 27/12: VK2, 4, 7, ZL1, 0050 to 0140Z. 28/12: VK6, VK7, 0300Z. 29/12: VK4 0400Z. 31/12: VK2, 4, 6 0300 to 0500Z. 1/1/82: 1040 to 1130Z VK7, ZL3.

As the log books of the various operators throughout Australia would show, there have been many more contacts to various areas from time to time, some have been more lucky than others, it's mainly being around at the right time that matters as some openings only last a few minutes.

The only known 2 metre contacts to take place between VK5 and VK2 occurred around 0050Z on 27/12 on 144.100 when Mick VK5ZDR worked VK2YUS, VK2ZAB and VK2ARD. Signals were not over strong. VK2YUS was the best at this QTH at S2, but I didn't work him, too many other locals trying!

HEARD AROUND THE BANDS

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all sorts of comments and statements, various types of signals, some good, some indifferent, etc., etc. Here are a few things I was able to pick up by doing just that . . . listening!

30/11: VK2DDG so strong could hear dog barking in background. 3/12: ZL opening from 0700Z lasted for more than two hours. RTTY contacts noted between VK5AN, VK5MX, VK5AWP, VK5ZRO. 4/12: Ken VK2BNN just finished working ZL1, 3 and 4. John VK2BHO likewise. 5/12: VK2BHO heard working ZL again, and again! VK1FT, one of few VK1s heard this year. 6/12: Heard report of VK4 to ZL opening on 2 metres, not confirmed so far. 19/12: VK4KAA (ex VK4ZEZ) is moving to VK3 on 5/1/82. ZL2AQR works VK1, 2, 4, 6, 7 and 8. VK2DBE using a 6 metre ringo type antenna now, expects to put up a log periodic soon. ZL1AVZ worked VK6ZDY. Repeated the effort on 20/12 just to prove it was no fluke! 26/12: VK4GI working VK6WH 0724Z, both sides of contact audible in VK5. Ted VK2ZFS embarrassingly strong 0851Z. Worked VK4ZSH/M in Brisbane streets S9 plus 40 dB whilst mobile! Steve said he had worked two ZL stations plus a VK6 from his car which is something he cannot do from his home QTH due to channel 0 crud.

Bob VK6BE advised the Albany beacons are still off the air and are undergoing an overhaul. When completed they will be given a new home at the old whaling station, with the antennae about 50 feet a.s.l. He said it should be a good site with an excellent water take-off to the east. In the meantime, if conditions look favourable, Bob will run a keyer on 52.050 into which you should call if you want a contact during the key rest periods.

NOTED ON OTHER BANDS

24/11: 1130Z David VK5KK called CQ on 432.100 and was answered by VK5LP; he still hasn't got over the shock of being answered! 13/12: Mark VK5AVQ took the VK5 70 cm repeater up to Mt. Lofly (the beacon site) for a Sunday afternoon test of the equipment, and was pleasantly surprised at the response, with signals coming from all directions and over considerable distances. Even on its temporary aerial it put in a very strong signal at the VK5LP establishment, hills or no hills! 19/12: Andy VK2DUX said there would soon be a 70 cm repeater operating in his area. Same day Colin VK5DK reported keeping many skeds with Les VK3ZBJ at Frankston on 144 and 432 MHz, and on occasions 432 has been the better path. Same day heard a report of a 70 cm beacon at Carnarvon, seeming to confirm last month's listing. 28/12: Excellent conditions for 70 cm between VK5MC and VK5LP with signals 5 x 9 both ways at 1108Z. Chris managed to finally latch on to Col VK5DK who was busy working VK3s on 70 cm, and although conditions had changed somewhat a contact resulted at 1137Z, but it's a long way for me to work to the south-east through the hills.

Bob VK5ZRO reports that since 6/11 contact has been made practically every night between Don VK5ZRG at Whyalla and

himself at Elizabeth, distance about 250 km, with signals varying between 4 x 1 and 5 x 9+ with 10 watts. Similar contacts have been made during daylight hours with much the same results. Jim VK5ZMJ at Port Pirie has also entered the fray at times. These northern signals are usually very weak at VK5LP due to the hills, but regular contacts can be made to VK5ZRO despite the huge amount of earth in the way! Similar results are to be had when working VK5KK, 120 km away at Arthurton.

FIFTY CENTIMETRES

It is not often a report is received of activity on 50 cm (576 MHz to the less informed) but a letter has come from Allan VK4ZRF detailing contacts made between his equipment and that of Steve VK4ZSH. It makes very interesting reading, and I quote:—

"Due to the recent high in the Tasman Sea extending a ridge up the east coast, we decided to have a go on 50 cm. 6/12/81: 1144Z VK4ZSH/P at Port Vernon near Maryborough to VK4ZRF/P at Best of All Lookout near Springbrook on NSW border, distance 335 km, signals 5 x 2 and 5 x 3. Queensland and Australian record. 7/12/81: 1027Z VK4ZSH/P at Elliott Heads off Bundaberg, while VK4ZRF/P again at Best of All Lookout, 377 km 5 x 6 and 5 x 8. NEW QUEENSLAND AND AUSTRALIAN RECORD. 11/12/81: When the ridge was on its last legs at 1245Z VK4ZSH/P from Noosa Heads to VK4ZRF/P at a spot 6 km west of Byron Bay in NSW, 255 km 5 x 5 and 5 x 7. NSW record.

"Identical gear was used at both ends: FT221R to varactor MA4060A doubler/doubler at 3.5 watts output, '6-UP' 50 cm converter with MRF901 preamp, and the aeriels were single 17 clement NBS design yagis with TR16 reflectors."

Congratulations to you both for a fine effort, and it would be some effort as you don't just separate by those distances without dedication. You deserve the records and I am sure I speak for everyone when I say well done, and let us all hear of some more of your exploits. But you had better keep on the ball as I do know of other possible attempts at the record on that band in the not too distant future, so beware!

WORKED FROM JAPAN

Graham VK6RO in a letter mentions still having contacts with stations in Japan on 6 metres using his mobile rig, plus a number of VK5s. Of great interest was a copy of the Japanese "CQ" magazine VHF page, which gives an outline of what was worked between 24/9/81 and 30/10/81. Normal call signs were stations worked, beacons obviously heard only. I have not included dates, and many call signs were worked on several occasions. How about the following for a sample of 50 MHz working:—

FW8SC, AH8A, H44HIR, P29ZSA, YB1CS, WB7EHU/KH2, DU1GF, ZL1UHF, LU8AHW, LU3EX, FK1RE, PY2AA, KC6DD, ZB2VHF, H44PT, 3D2CM, KC6IN, YD3FU, KH6EQI, KG6JDX, YB3AI, KG6DX, PY2AJK, VS5LH, PY5AQ, PY5BAB, PY2XB, ZB2GW, ZB2BL, EL2AV, EL2FY, PY2CSS, ZD8TC, FK8DJ, PY1AUX, PY6JRC, KH6HI, FK8AH, FK8KAB, KH6FQ, PP5AJF, PP5WL, PY5ZJK, KH6IAA, PY5AQ, VS6BE, VS6HK, LU2AJK, ZL1AVZ, LU9HJW, CX8BE, LU6DLB, LU9AEA, LU7DZ, CX4BA, HL2JD, LU2DEK, LU3DCA, CE3OK, K7KV, PY6BN, WA4TNV/KL7, WA6PEV, WA6BYA, LU1DMA, KL7AP, KL7CQ, N6AJ, 5Z4YV, YD0BRR, KB7Q, KF7T, NL7D, KL7NO, AL7AW, ZL1MQ, ZL3RW, ZL3NE, VS5TX, LU7EKA, W6XJ, K6HCP, N6CT, W6YKM, K6FV, 5B4AZ. Not included are quite a lot more from W6, KL7, KH6, LU, PY and others. Additionally there were many contacts into VK on 52 MHz.

One needs to admire the dedication of the Japanese operators who made all these contacts no doubt through much local QRM from sheer numbers of 6 metre operators. It is likely some contacts were lost for this reason alone. Nevertheless, it shows what could be done if 50 MHz was available on a global scale, thus including Australia and Europe — the possibilities seem endless.

50 MHz DX STANDINGS

Bill W3XO in November 1981 "QST" gives a large list of 50 MHz standings in his "World Above 50 MHz". Top of the list is LU3EX with 59 countries worked and 57 confirmed as at 22/9/81. What a great score! He is followed next by KH6IAA with 54 worked, 50 confirmed. W2IDZ has 50 (49). Then comes ZD8TC with 48 (44), JA4MBM 47 (44), VE1AVX 45 (41), JA1RJU 44 (43), JA1VOK 44 (43), and so on.

18 stations have worked 40 or more countries, 24 have worked from 30 to 39 countries, 44 have worked between 20 and 29 countries. All have been 6 metre two-way worked. Included in the list also are 19 operators who have contacted stations on all Continents! Maybe it is significant that no one with a score of less than 23 countries worked has worked all continents, and almost all those who have done so have worked 30 or more countries, so I expect it goes without saying that the more countries you work the better your chances for working more continents — seems logical.

One page is missing, but hopefully when it comes from Graham VK6RO, I will be able to fill you in on some of the history of 6 metres since 1945 and cycle 18, it looks interesting.

EME AND ALL THAT

Bill W3XO in December "QST" says K2UYH in his October "EME Newsletter" includes the fact that Argentina is again to be represented on 70 cm EME. LU9EHR, with his 20 foot dish and kilowatt should be quite popular. Also from the October newsletter comes word of the first all-solid-state moonbounce contact. The principals were WA2FGK and G3LTF, and the feat was

accomplished on 23 cm. The final of the transmitter on the US end employed just two MSC bipolar transistors. A higher power version, boasting 250 to 300 watts output, is in the works and is expected to be in operation soon. Is this last bastion of the vacuum tube, the high power RF amplifier, about to fall too?

In the US they think 2 metre Es is exciting around the US and Canada. W1PL passes along a report from HA5HO via an HF band QSO. The Hungarian station re-counted 2 metre Es contacts back in June 1981 (summer in the north), with contacts to 4X4, OD5, 5B4, SM, OZ, LA, 9HI, GJ and UA6. You dyed-in-the-wool VHFers will have to get out your call books to check out those prefixes! (From "QST".) Looks as though there are occasions when it is useful to have close neighbours as in Europe!

OTHER ITEMS

A letter has come to me from M/S 582, Toowoomba, Old., with a part listing of countries worked on 6 metres, but the list is not concluded and there is no signature. Would the author of the letter please send the remainder of page 2 and attach a signature!

In response to my request for such information, the custodians of the VK5RSE beacon at Mt. Gambier have sent a page of very useful information on their beacon. Many thanks for the well set out info. That means about half the beacons have replied after 15 months of asking!

I regret any confusion which may have been evident in the listing of dates for the Geelong sponsored "National VHF Field Weekend" in December. I originally phoned the Club at the time of printing deadline I had not heard anything, and was advised it would be on 12th and 13th December. In the meantime the date for the commencement of the Ross Hull Contest came out at a week earlier, namely 5th and 6th December, and the December Newsletter from Geelong also had that date. I was already committed to something else on that weekend so I was unable to go out at all. I don't know of anyone else from VK5 who went out either.

I see the lesson to be learned from this is that the organisers of such events as Field Days need to have information to Editors who might be involved with publicity at least four months before the event, which then gives time for the editor to get his notes in order, time for them to be printed and still give possible participants a couple of months notice. I hope all can be sorted out in time for plenty of notice for next year!

A new tropo record was set for the United Kingdom on 144 MHz on 4/9/81 between GD8EXI and EA8XS at 2240Z over a distance of 3025 km. The QSO was a prime example of marine ducting with S9 reports exchanged. A QSY to 70 cm did not produce a completed contact, although they tried for two hours.

Another first was on 10/7/81 when GI4GVS worked CN8BA on 144 MHz, a distance of 2337 km. This is then followed with the comment that 1981 was producing

some "super" distance contacts. (Hopefully this will continue into the southern hemisphere summer . . . 5LP.)

A new European DX record for 13 cm was set on 31/7/81 between DL7QY and SM6HYG at 1018 km with signals 529 on CW.

The above European information comes from "Short Wave Magazine" kindly lent by Steve VK5AIM, and the many pages of VHF activity indicate a continuing high level of activity over there, much greater than we ever see in Australia.

NORTHERN HEMISPHERE ON SIX

What we miss because we don't have 50 MHz! I am sorry to have to tell VK six metre operators that the northern hemisphere had contacts during October/November 1981 which exceeded their fondest dreams! January 1982 issue of "QST" and W3XO's "The World Above 50 MHz" makes mouth-watering reading, so I must pass some of it along to you:—

Bill says: "It is now clear that the F2 propagation this fall is exceeding everyone's fondest dreams. Conditions may even top those prevailing in 1979 when Cycle 21 peaked, according to the experts who keep track of such things. The sheer volume of DX contacts prevents any attempt to chronicle in any detail what is taking place. Nevertheless, I will attempt to hit the higher spots.

"October 23 was the first of the really exciting days for this reporting period. An FB opening to South America netted a new country in the form of PJ9EE (Netherlands Antilles) for many, as well as producing LU9AEA, LU2DEK and PY2XB. Suddenly, from out of nowhere, came the voice of Kosie ZS3E, who proceeded to work upward of 150 stations in the East, Midwest and West of USA, providing a new country for most and a new continent for many. ZS6LN was also on on this occasion, working nearly two dozen stations in the 8th and 9th call areas. That afternoon brought the best Hawaiian opening to the East Coast that this conductor has ever heard. A number of operators finished their WASs that afternoon. The following day, a Saturday, was almost a repeat, but signals were not quite as strong. The level of activity and QRM was, of course, much higher. ZS3E and ZS6LN again worked many Ws and the KH6s were into the East Coast again.

"And then there was the North Atlantic path, which had also come alive during late October with crossbands as well as a number of interesting European calls on 50 MHz. The most prominent call, and definitely legitimate, was TF3SG, from Iceland, who worked many US and Canadian stations as well as HC1BI with a barefoot transceiver, whilst awaiting an amplifier.

"A big day for a few fortunate 6 metre DXers, including W3OX, was October 31. A station many of us never expected to hear came through with a very respectable CW signal on 50.112, if only for a few minutes. The country, Cyprus, and the continent, Asia, represented by 5B4AZ, went into the logs of those of us who happened to be in the right place at the

right time. Talk about luck, W3XO, whose amplifier was down, managed to work the final continent with just 10 watts! That afternoon saw the best opening to Alaska and Canada's North-west Territory in two years. Numerous KL7s and several VYs put S9 signals into the East Coast for about three hours.

"November 8, the second day of the SMIRK Contest, brought very good backscatter signals to the East in the morning along with a great variety of Caribbean and northern South America stations, including J6LOV, J6LB, DL3ZB/YV5, YV5PE, PJ2DW, HP1AC, 9Y4LL and HK0BKX, all of whom provided lots of contacts and new countries for many.

"Another great day was November 12. Following an aurora the evening before, the band opened early with the FY7THF beacon copied on the East Coast by 1130Z. Then followed an excellent Caribbean opening and a few snagged C5AEH which was part of a DXpedition to The Gambia by W6JKV and N6BFM, who went there with high power and slacked beams and extensive liaison on 28.885, and by November 15 had worked several hundred stations in all US call areas, plus KG6, VS6, Caribbean and African stations, plus ZB2BL and HC8VHF. Anyway, back to the 12th. A good transcontinental opening began here in the mid-Atlantic States about 1630Z, the second in two days, with KH6s, along with T32AB, were in as early as 1730Z.

"Another DXpedition was that of HC1MD/WB8ABN to the Galapagos Islands, as HC8VHF. Using a 10 watt Belcom and a 2 element quad, was off to a roaring start on Friday, 13th November. Only three days later he had racked up nearly 600 QSOs in 47 States and all continents.

"An indication of the excellent conditions prevailing can be found in the report of the activities of K5CM and wife N5KW. Connie notes that both of them worked all continents over a 27 hour period, October 31 and November 1. A similar tale is related by W2UTH. Hank says he spent nearly 30 years on the band before making WAC, and now he has done it in about 44 hours!"

So there you have it. It almost makes you sick with envy doesn't it? Hopefully for us, something akin to these conditions might be found in the southern hemisphere during our "fall" soon coming up. If we can have a repeat of what happened last year on Easter Monday it will be some compensation, but it is hard to sit by and hear signals from 6 or 7 overseas countries on 50 MHz and not be able to work them, and that's what happened last Easter!

That should give you enough reading for this month, so now we conclude with this month's thought: "Opinions should be formed with great caution — and changed with greater."

73. The Voice in the Hills. ■

HELP WITH INTRUDER WATCHING

A Unique 80 Metre Mobile Antenna — that works

How many of us have had difficulty on 80 metres, operating mobile, due to the narrow bandwidth of our whip antenna? This has been even more noticeable with the advent of low power, solid state rigs, which reduce output substantially when "looking into" an antenna which is not resonant at the operating frequency. I have been using a commercial centre loaded whip, and for a long time carried a chart with me showing the length at which the tip should be for any given frequency. This worked fine, but necessitated stopping the vehicle to carry out the adjustment. To carry an antenna tuning unit in the vehicle was inconvenient, so I decided to build one in. Perhaps others may like to try this idea. It is simple and works extremely well. I adjusted my whip to be resonant a bit below 3.5 MHz, which meant that between 3.5 and 3.7 MHz it, being too long, exhibited inductive reactance. To cancel this out, I placed a variable capacitor in series at the base of the antenna to produce capacitive reactance. The capacitor is mounted right at the base and is varied by means of a flexible cable with a knob on the dashboard of the vehicle. A 200 pf capacitor was used, which allows a 1 to 1 SWR to be obtained over almost the whole of the band. If you want to work on the high end,

it may be necessary to shorten your whip slightly, but two settings will easily cover the whole band. My whip is mounted on the front of the vehicle, which means I need only a short length of flexible drive cable, but it would not be hard to place the capacitor on a rear mounted whip, as long cables are readily available — have a look at flexible drives for electric drills! If I do not have a VSWR bridge with me, I just peak the capacitor for maximum output or collector current. It works fine — why not try it? See you on 80m.—David VK2BDT, "SWARS, Feedback" (Lyrebird). ■

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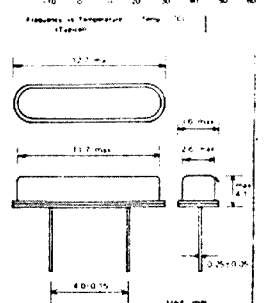
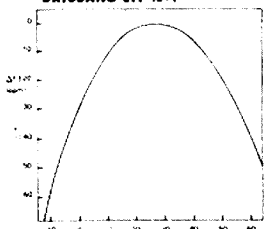
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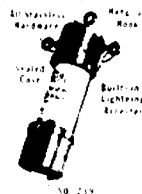
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Field Day 1981

Paul VK5CGR
(formerly VK3CGR)



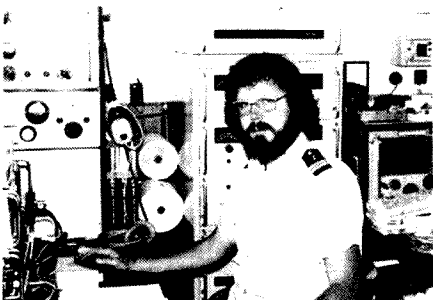
This photo and front cover was taken by Bob VK3VJD, who assisted me by check logging during the John Moyle Memorial Field Day 1981.

Using the beam for a Field Day may seem a little extravagant for a single operator station, however it blew down in a storm about two months before the Field Day. After having just rebuilt the beam the opportunity was too good to miss. The site was near Longford in East Gippsland,

Victoria, and work on the site commenced well within the prescribed time period.

After antenna erection, 24 hours operating, and dismantling everything, I certainly slept well. Station details were a Wilson System II antenna, a 15 and a 20m vertical, a 40 and 80m dipole on a common feeder, a 2m vertical on top of the beam, a TS520S, an FT7, IC22 2m FM, SB200 linear and a 5 kVA generator. ■

Close-Up



Joergen Christensen OZ8AE/VK0JC in the radio office of the Antarctic supply ship MV "Nellan Dan". With the transfer of ANARE headquarters from Melbourne to Hobart, mainland amateurs no longer have the opportunity of meeting "Joe" in person, but remember with pleasure the many contacts he made with them on phone and CW.

VK3SV ■

MAGAZINE REVIEW

Roy Hartkopf VK3AOH

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

ORBIT June 1981

Moonbounce (G). Helical Antennas (P).

QST July 1981

Microwave circuit construction (P). Towers (G). 2 Metre Direction Finder (P). Phase and Frequency Modulation (G).

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Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138

Spasmodic and erratic openings on all bands over the Christmas and New Year period made it very hard to work into certain areas at usual times although for those who were dedicated and could operate at irregular hours, the inconvenience was worthwhile, particularly on ten metres as signals at times were well over the nine from all continents.

In writing this column one thinks twice about forecasting DXpeditions in advance, such as Bouvet in January AR, but this was presented in good faith on letters received from Dieter DK9KD. The trip did not eventuate due to shipping problems which would have enabled the party to stay ashore for two or three days. The expense involved did not justify this and it has been put forward to 1983 and definite bookings are being negotiated, allowing a period of two to three weeks operating. It is believed that they have taken a sensible approach to give everyone a chance at a much wanted country.

The amateur who has just achieved his licence or the "old timer" who has just found the time to get down to DXing has my sympathy as the very rare, much wanted countries could become a thing of the past due to plain economics.

The escalation in shipping costs, fuel, food and the reluctance of some equipment manufacturers to loan equipment anymore because they have had their fingers burnt in the past, coupled with the fact that the market is pretty good anyway, so why advertise further? Also some DX foundations have withdrawn support as some operators in the past just have not done the right thing in the way of returning equipment lent and QSLed as they were expected to.

The amateur fraternity just cannot support a multi-thousand dollar venture and more enterprising organisers are turning it into a commercial venture by selling TV, radio and media rights.

Whether this is a good thing or bad, I am not going to debate and the days of "transceiver in hand, transformtr in one pocket and a spare 807 in the other pocket" have long since gone with this

changing scene which we will all have to live with and no amateur should lose sight of the fact that it is a hobby. How much he wishes to subscribe to get a much wanted card is his business, but spare a thought for many brother amateurs who beg, borrow and steal just to have a "home brew" receiver, but are just as keen to build up his or her DX listings.

When the XZs hit the band, one well known "W" was heard to say to the QSL manager, Jin JA8BMK, that he had sent a fifty dollar note with his card. This proved to be an expensive donation due to the fact that Newington do not recognise either station for DXCC credit. Whether the cash expedited the despatch of the card we will never know.

HEARD ISLAND

Jim VK9NS advises that negotiations are still underway for a March visit. Jim has all the necessary permission and co-operation from the Australian Government Departments concerned, even to the approval of Kirsti VK9NL, accompanying the expedition, also the use of the accommodation and use of the diesel generator (if it can be started).

Rumour has it that a Stateside expedition could raise the necessary "gretn stamps", equipment and experienced operators to launch a successful onslaught on the much wanted area and tie up to QSLing with a minimum of fuss. However, the critical weather period may put paid to their thoughts for this year.

It would be a pity if Jim's group, who have done their homework for over two years were beaten to the punch.

DXCC UPDATE

To update your DXCC countries list in the WIA Call Book so that it is correct as from the start of the year, insert 1A above 1S and name it the SOVEREIGN MILITARY ORDER OF MALTA. VP1 becomes V3 and VP2A is V2. There are no deletions to make, making the current countries list 319.

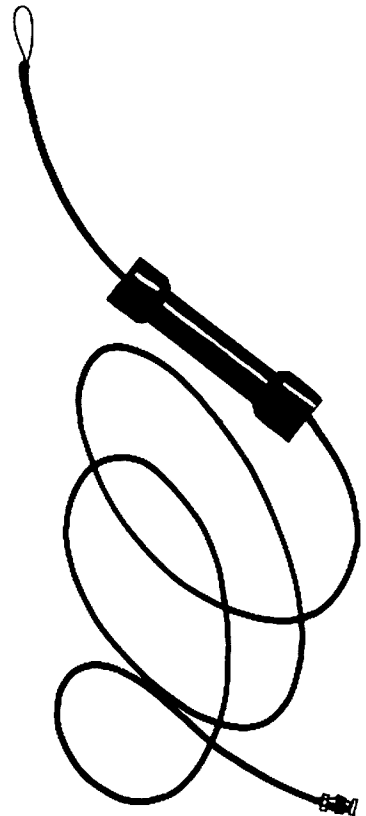
STAMPS AND ALL THAT

A friendly discussion with another VK3 about how to get a letter into certain parts of the world without the stamps being confiscated (invariably with the letter and contents still attached). My policy of "accidentally" tearing the stamps before franking led another amateur to join in the QSO. He explained that International Postal Regulations state that a mutilated stamp could bring a penalty of double postage to the recipient even though postage had been paid and it had been officially franked. Sure enough, a quick check with Australia Post confirmed it.

Well! You cannot tear the stamps, you cannot get a letter franked without stamps unless you had fifty items (and who is going to save these special cards for a year and post them?). There must be a way and I would be interested as would all DXers as to a surefire route to get the envelope untouched to the intended person.

*NEW!

2 METRE "STOCKWHIP"



Communicate with SCALAR

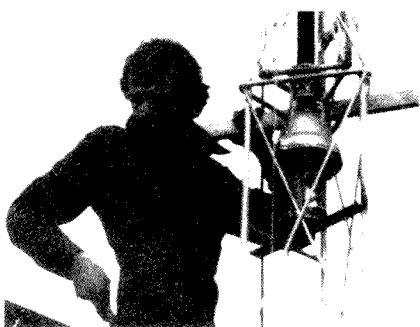
A fold away, flexible dipole antenna. Enables you to extend the range of your 2 meter hand held transceiver...
At home, in the office, camping, caravanning, - all sorts of places!

You replace the transceiver stubby with the Scalar "Stockwhip" - hang it up by the convenient nylon loop - and listen to the improvement.



SCALAR GROUP

20 Shelley Ave.
Kilsyth 3137
VIC. 725 9677
N.S.W. 502 2888
QLD 44 8024
W.A. 446 9177



Luigi IV30SH

Luigi IV30SH owns a company which specialises in radio installations. The company sought and gained a contract for installation of equipment in various parts of the Malagasy Republic for communications back to the parent companies in Italy.

Too good an opportunity to miss for Luigi, as it could be combined as a "working DX-pedition" and after a discussion with his friend, Sergio IV3MUC, "why not?" was the unanimous answer and Sergio would do the QSLing for this much wanted country.

The equipment, an ICOM 720 and a Kenwood linear were gathered. The antenna would not pose a problem as Luigi would use the 15-element log yagi periodic which was already erected at Diego Suarez on the northern most tip of the Republic where he would be based during his stay.

Customs at Tananarive proved no problem to him when he arrived on September 15 en route to his temporary QTH and it wasn't too long before "the pile-ups" had to be heard to be believed. However, some 2800 QSOs were made in eleven days, which was extra good considering they were made in Luigi's spare time and when openings existed and overall being governed by a fluctuating line voltage.

This was quite an experience for the 29-year-old company owner who has held an amateur licence since 1970. But the "hamming/business" trip was to be marred by the customs officials at Venice airport on the return trip as they confiscated the baggage which included the "valuable logs" and it took over a month to get them cleared from "officialdom".

Sergio IV3MUC's work was now to commence with the QSLing which he had to combine with his business of manufacturing TV parts and the duties of being president of the radio club of Pordenone, a club which he helped inaugurate when first licensed in 1959.

The photograph shown is of Luigi putting the finishing touches to the rotator after mounting a six element yagi onto a 54 ft. boom (you have read right) for an exhibition staged by the radio club of Pordenone recently.

It is believed that Luigi is welcome back in the Republic at any time for operating which is very comforting to the amateur fraternity considering some islands have

closed the shutters on incoming amateurs, especially those who have upset the environment on previous occasions.

PREFIX HUNTERS

A rare one, EX. Twenty-five of these prefixes have been issued by the USSR to celebrate the city of Kiev's 1500th anniversary.

Special cards will be struck for the event and all paperwork will be via Box 88, Moscow and preferably via your local bureau.

The prefix will be current for three months, commencing March 1982, and both CW and SSB enthusiasts will be catered for.

QRM

No wonder we have our share of "tuner uppers" on the bands. A very sparse owner's manual for an exclusive transceiver, in its lists for SSB operation, includes, "Select an unused frequency near desired operating frequency, key transmitter and speak into the microphone while adjusting mic/carrier to power output desired".

Pity the same company does not manufacture a dummyload otherwise the wording would probably be quite different.

C, N & C

Christmas, Norfolk and Cocos-Keeling Islands have their own administrations and of course their own stamps which are usually beautifully designed and coloured. Although the islands are Australian possessions, mainland stamps are of no use.

If you are determined to put a stamp on the return envelope the Philately Sales Centre at some major Post Offices in each State can gladly oblige with the correct stamp at cost. Also, some centres carry stamps for P29, 5W1 and VR6.

Your local post office can supply the QTH of the one nearest to your locale or you may also deal by mail.

AP

The log books of some VKs have been swelled by some APs leaving their beloved fishing hole of between 14.201 and 14.210 MHz and chasing VKs for a change.

Simple explanation, just want to know the cricket scores, but it is one way of getting a 5 x 9 report. However, the card could be elusive looking back on past tours when the same thing happened.

YACHTING

Hats off to the dedicated small group of amateurs who have been keeping Paul G4PEN/MM company on his round the world cruise in this 17m schooner, the "Spirit of Pentax".

These guys keep tabs on Paul, getting updates on conditions and weather conditions, helping where possible with advice and keeping him abreast with the latest events of the world. Also with idle chatter that helps to while away the lonely hours of such a long journey. The trip is being sponsored by the Pentax Camera Company, as the vessel's name indicates.

QSL ROUTES

Never knowing where to draw the line of printing who wants what with the space

available, the offer of assistance with difficult QTHs is open. With current QSL lists from America and hopefully, by the time you read this, the acquisition of 1982 Foreign and American call books, we will do our utmost to find the route for you.

An SASE with relevant call sign, mode and band to QTH(R) will bring a prompt response for the rare QTH or route you desire. A copy of any QSL routes you may know would be appreciated for updating the records.

QSL CHANGES

Dave VK3DHF ex VK9ZD wishes to advise that he is handling his own cards and guarantees 100% return either direct to 9 Milton Street, Heathmont, 3135, or via the bureau. Dave has never allowed the logs out of his possession and an SASE will guarantee a quick return.

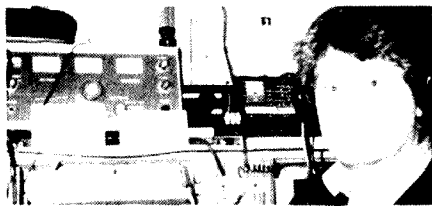
Jill VK6YL is handling Tony VK9ZH's paperwork and exchanging the log on 20 Mx. Also, either direct or via the bureau will gain a prompt return.

Tony VK9ZH is very active and is particularly looking for contacts on 6 Mx.

Although not exactly a QSL manager change, Jim and Kirsti VK9NS and NL have been given a larger P.O. box, so please QSL to Box 90, Norfolk Island, 2899, Australia.

Jim VK9NS is manager for VK0AN and requests one card, one envelope to aid a quicker turn around.

SWLING WITH BRS 47513



Peter BRS 47513

Peter BRS47513 has been SWLING for a number of years and can still recollect the thrill of hearing VK2UK in 1972 when he was using a "home brew" modified wartime receiver.

Peter's QSL report has got to be seen to be believed, it is accurate to the minute, types of equipment used and the main topics of conversation. To decorate the foolscap page report there is an excellent cartoon which is hand drawn. On this performance he SHOULD have a 100% return.

Best time for the VKs according to Peter is in the mornings in "G" land and he prefers 21.150 to 21.200 MHz where the QRM from Europe is at a minimum but at other times it becomes impossible with the long wire antenna which is 150 feet long, but bent around a "few" corners and 18 feet high.

The "home brew" ATU is a good QRM sorter according to Peter and this is fed into a FRG7 or a Trio 9R59DS receiver. The other interest is 1.8 MHz and an "old" navy type receiver, which was donated by a friendly amateur, does a very fine job on this band and a number of European stations have been logged.

Peter is 23, works in a carpet warehouse and also enjoys fishing and shooting.

In May, he will sit for his licence so that he may speak to some of the exotic call signs he has logged as an SWLer including JY1 whose card is proudly displayed in his shack.

Good luck, Peter Norris and may we have the pleasure of having you in the log this year after the celebrations at the "Crown and Anchor" with the YL.

30 Mx

10.1-10.15 MHz was christened on New Years morning firstly by the ZLs where Roly ZL1BQD and Tony ZL1AZV/M had a OSO at 2 seconds after midnight, their time. A SWL report from this QTH would have been 5 x 9 to both stations but it was a pity that the QSO was in the CW segment which is by gentlemen's agreement.

Eric VK3AX and myself would have been one of the first in VK with good signals on 10.125 MHz. Many stations were heard and reports of DL, G, GI, P29 on CW have been passed on.

This could become a very reliable mobile band and would be great for experimentation.

Ron LU5ZR is looking for DX contacts on 24 MHz which they acquired at the start of the year. So when it is released here a lot of interest will also be shown if the solar activity is still high.

VE POSTAGE

As from the 1st January 1982 VE postage took a hike from 35c to 60c for external airmail, 17c to 30c for internal mail and 17c to 35c to the USA.

With IRCs being redeemable at 30c value, two should suffice.

SOUTH PACIFIC DXING

Dick VK3VU and Ernie VK3DET advise that they will be mounting a DXpedition to the following call areas on the dates shown.

- Western Samoa: 2 March-10 March 1982.
- 5W1DV (VK3VU) and 5W1DW (VK3DET).
- Nuie: 11 March-25 March 1982.
- Tonga: 26 March-15 April 1982.
- Fiji: 16 April-20 April 1982.

They will be particularly looking for VK stations and catering for the Novice operators on phone and slow CW. Also they hope to check into the ANZA net, 21.204 at 05.00 UTC, daily and also the Carribean net on 14.175 at 10.30 UTC.

Please QSL to the operators home call and the QTH is Box 600, Ballarat, 3350, Australia, with SASE or equivalent postage.

Oscar and 80 Mx will be operated as time and conditions permit so all bands should be covered.

Dick VK3VU has offered to forward advice for anyone wishing to obtain an amateur licence in any of these exotic areas, so if you are thinking of a "hamming holiday" it is suggested you contact Dick at the QTH listed.

Good luck guys, a happy holiday, good DXing and we look forward to hearing you.

My appreciation for the assistance with these notes must go to VK3UX, 3YL, 3DWD, 4KA, 4AIX, 6HD, 6IH, 6XI and SWL Eric L30042.

73s, Ken.

160 Mx CW OX WORKED IN VK6

4X4NJ, 9V1TK, DL, E8AK, E18H, EZ3UAV, F, G, GI30QR, GM, JA, KP4KK/DU, LZ2KTS, LZ2RF, OE1KM, OZ1LO, SP5INQ, UB5QBO, UL7TBM, UP2BAS.

80 Mx CW DX WORKED IN VK6

4S7MX, 9KZDX, HK0BKX, SV0AA, TI2PZ, VP9BK, VQ9AB, XT2AW, YJ8RW.

40 Mx CW DX WORKED IN VK6

3B7CF, 9K2DX, HS1ALF, UKOYAA (Zone 23).

FROM THE LOG OF VK6IH

CALL SIGN	TL7YS	TWENTY Mx
A71AD	TR8DK	A71AD
CSADS (YL)	UK8MKF	A71AU
CN8EA	Y11AS	C6AWU
CR9AN	YS9RVE	EA9JV
EL2AK	ZC4NB	HH2SD
EP2TY	ZD7BW	OY5NS
GD3KHA	FIFTEEN Mx	OY9S
H5AK	A71AD	PJ7ARI
HH2SD	C5ACJ	VK9XW
J28DC	CR9AN	VP2KT
J3AH	FM0GA	W6QC/8R1
JA1BAT/M.T	HZ1AB	FORTY Mx
JX5AA	PJ8UQ	PJ9EE
KA2MZS/V9	W6QL/8R1	UD2KF
OY9R	ZB3GW	

THE CW BANDS WITH ERIC L30042

80 Mx

DF3FI, G3PDL, GI3IVJ, HA9RC, JA5XDX/MM, LZ1VO, OZ1LO, SM6CPY, SP7KTE, U5D, UA0UJ, UB5DBC, YU2FVW, YU3TIA, YU4FRS, YU7DX.

40 Mx

CO2OM, DF0AFZ, EA8QJ, FO0WA, GI3 OQR, HC7CM, HK3YH, HK0BKX, H44DX, DE3JPK, OH1QU, ON7LE, UD6D, MV, UK2 BBB, UQ2GLR, VK9NL, VP2VGC, VQAB, VQ9MM, VU2JC, ZB2EO, ZL3AFH/A, W6 YB/3D6, 5WIDT.

20 Mx

A4XJP, EA6EA, EA8QO, FM7CF, FG0BKZ/FS7, HZ1AB, HH2JL, J28DP, TF5TP, T30AT, TI2BGA/5, VP2MM, VP8ANT, YJ8TT, ZK2 AD, ZS5GM, 4X4WF, 3B2DO, 9K2DX, 9Y4KG.

15 Mx

CX1DZ, CN8CY, C31LM, W4BPD/C6A, EC9CQ, HC8MD, HK1QQ, HT1CTJ, KV4BQ, PY2ZEB, TG4NX, VP9CB, VQ9AB, VS5PM, XE1GPR, YJ8RW, ZK2RU, ZS2U, 4S7MX, 5B4JK.

10 Mx

HG3KGC, HL9RC, HZ1HZ, JD1BAR, KX6QC LU9CV, DE3SE, OH0DXG, P29NPL, SP9 CAV, U2R, UD6DLK, UF6CR, VS6CF, VU2 UGI, YC0BVO, YJ8RW, 4X4FA, 9H1CH, 9V1UQ.

QSLers OF THE MONTH

CM8SC, N7ET/DU6, EA6DI, KH3AB, KP2A, M11PA, SV0AA/5, T12FA, TI2VVR, UL7FP, VS6CF, VU2VTM, ZL0AES, ZK1AC, 5W1DG, 5W1DK, 9H3BI.

Call — Manager
 5N9ACO/8 — IV3ACP
 5W1DT — AA6AD
 601ED — W6HS
 8P6IB — WA4WTG
 9U5WR — SP6FIR
 9V1UQ — K5BLV
 A6XJA — PA0LP
 A71AU — DJ9ZB
 AP2ZR — JA6DGG
 AU7CD — VU2CD
 CN8ED — N9BSB*
 EI0WPO — EI2CZ
 EP2TY — JR3WRG

Call — Manager
 OY9R — K21JL
 P41C — N4RV
 SU1AA — OH2MM
 T30AT — G3XZF
 TE1C — TI2CF
 TG4NX — WD8MOV
 TL8RC — F6EZV
 TN8AJ — DM2XLA*
 TN8AJ — Y25LA*
 TR8GM — F6ESH
 USD — UK5DAK
 VP8QI — G4CHD
 VS6GZ — OE1HGC

FG0BKZ/FS7 — F6BBJ
 HL1AEK — JH7VEH
 J87BD — BG2SM
 JY8RL — ZL1BMU
 KV4AA — K6PBT
 OX3BX — OZ8KW
 VU2PP — K8ZBY
 XE2SD — WD6DRM
 Y1AS — DK2OC
 YZ9HDE — YUHDE
 ZB2EO — K3MNV

DX WORKED IN VK4

SEQUENCED IN BAND/MODE/CALL SIGN
 10/SSB AH8A, CR9D, JG1ZUY, JG6RE, KH2AP, KX6ZY, P41C, VP2QAC, VS5DD, ZK1CC, ZK1CG, 15/CW FM0FO, FM7AQ, ZK2TA, FK8CE, 20/CW FK8AD, 30/SSB VK3AH, 80/CW FK8DD.

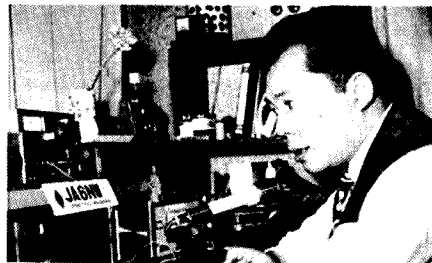
DX WORKED IN VK3

10/CW HZ1HZ, KX6QC, SP9ACV, U2R, 10/SSB 9U5WR, DK2OC, G3NBC, YH1AS, 15/SSB 7Q7LW, TN8AJ, Z21BP, Z55DC, 20/SSB 5T5Z, A6ZJA, A71AO, C31SD, D68AM, JY1, VK0AN, ZD7HH.

QSL ADDRESSES

YK1AD — Box 35, Damascus, Syria.
 V3ME — Box 367, Belize.
 N9BSD — 1307 Widgegreen Dr., Rockford, Ill. 61108, U.S.A.
 KP4GN — Box 532, Guyama, Puerto Rico, 0065, U.S.A.
 KC6MM — Box "D", Ponape, East Carolines, 96941.
 JA1BAE — Box 2, Ogasawara Island, Japan.
 HC8MD — Box 665, Cuenca, Ecuador.
 FO8HL — Box 5872, Papeete, French Polynesia.
 FO3DF — Box 5225, Tahiti, French Polynesia.
 FK8AL — Box 3994, Noumea, New Caledonia.
 CR9AN — Box 568, Macau.
 A9XP — Box 14, Marana, Bahrain.
 A71AD — Box 4747, Doha, Qatar.
 A4XRU — Box 981, Muscat, Sultanate of Oman.
 A4XHI — Box 18530, Salalah, Oman.
 4X4NDT — Box 3078, Beersheva, Israel.

Faces Behind the Key and Microphone



Masa JA5NW



OE1MTA with SWL Barbara



Uli DK2OC, Lynn DA1GF and OM Bob DA1GR.

The Saga of VK3ATN

Ray Naughton VK3ATN

Here are the facts of the events which occurred during a severe storm as related by Ray himself.

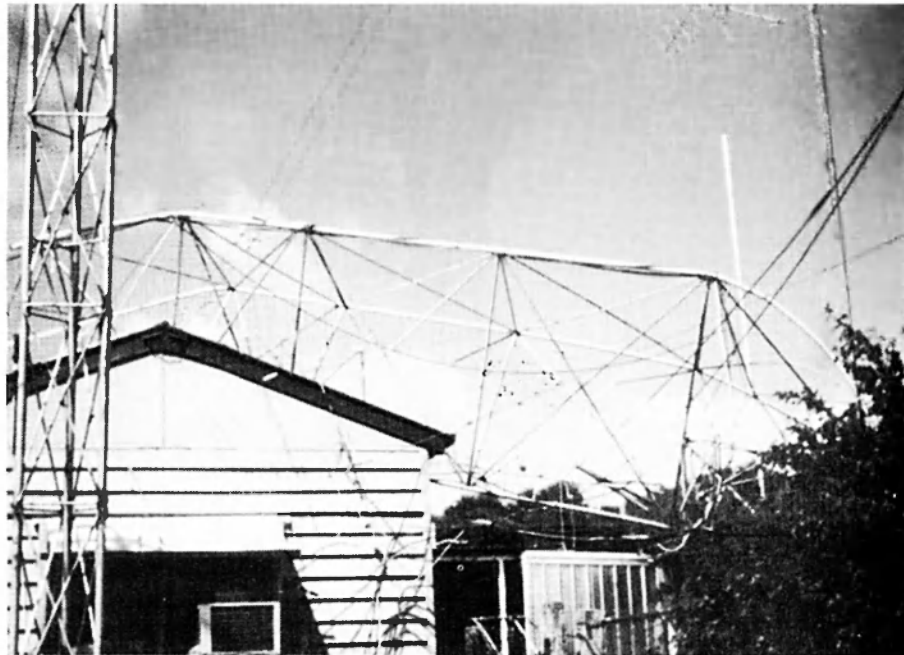
An unusual storm hit Birchip at approx. 5.45 p.m. on Tuesday the 27th October and caused an estimated (conservatively) \$3 million worth of damage by wind and hail from Birchip to Bendigo. The peak wind gusts I had previously experienced in Birchip were 100 kph. This one I estimate was closer to 200 kph. My VHF tower was a very solidly built 100 footer with triangular base, 10 foot on a side and had stood majestically for the previous 23 years. During that time it had a variety of antennas on it and due to the high top wind loadings, steel cable guys with a breaking strain of 4 tonnes were originally installed at the 70' and 95' levels in three equally spaced directions.

On the eventful day the top loading consisted of a 20-el. collinear for 144 MHz with $\frac{3}{4}$ wave spacing at the 90' level. A stack of four 20' long yagis stacked 14' high and 14' wide and centred at 110 ft. A 30' long 6m yagi (11 elements) at 100' and a $\frac{5}{8}$ collinear for 2m, the top of which was 140' above the ground. The prop pitch drive motor was at 50' up the tower and the estimated weight of drive tube masting and antennas above this (pressing on bearings on top of tower) was 150 kg.

At approx. 5.30 p.m. a discussion with my XYL indicated that a storm and rain looked like blowing up and I was talked out of mowing the lawn. I then realised that due to visitors at the weekend, the waterproof cover which had been slid up from the p.p. motor had not been replaced. Not wanting water in the top of the motor, I told the XYL I was going up the tower to replace it — will be back in 15 minutes. I found my safety belt and necessary tools and climbed to the 50' level. On later examination I now realise that I had re-positioned the cover partially, therefore I must have been at the 50' level. After that I am afraid I can't remember what happened, however, the following is a reconstruction of what probably happened.

I was on the access ladder on the south side of the tower. The wind came from just north of west with such force as to break the west guy at the 70' level followed by the guy at the 95' level. Unguyed the tower could not have withstood this force and began to topple towards the east. It ended up over the shack (ht. 16'), across trees and a 240V power line and the top of the tower ended up half-way across the side street. On later inspection it was found that the prop pitch motor bracket and frame (of 2" x $\frac{1}{4}$ " angle iron) had been bent upwards about 4" due to angular velocity of tower when it hit the ground (at top) and combined weight of rotatable antennas and drive tubes etc.

Also, I believe I was standing on ladder on the south side of the tower and although



100 ft. tower which Roy rode down, lying across shack.

I had a safety belt on, I was *not* attached to the tower — thus preventing a possible broken back. I am sure I was still grasping the ladder when it went across the shack roof, and the place I was standing on ended up 10 to 12 feet above ground. I was thrown off the tower like a missile and ended up approx. 20' further along the ground.

I praise and thank God that I am still alive.

I ended up with three crushed vertebrae, four fractured ribs on the right side, fractured right ankle and badly fractured left wrist which has been reconstructed three times.

At this stage may I thank the medical officers, police and hospital staff at Birchip, also staff at Horsham and Royal Melbourne Hospitals. I was overwhelmed at the number of cards and the number of amateur operators who showed concern or visited me in Horsham or Melbourne. I also appre-



Looking through collapsed tower towards dish.



The forces of nature.

ciated the radio equipment which was set up for my use while I was in Melbourne. Thank you all. I apologise for not making the Western Zone convention, but was otherwise engaged. Thank you for the "Scrolls".

Thank you again to all who have shown so much concern and may I conclude by saying the amateur fraternity really provided therapy I required and still do.

Some 25 ft. away from the 100 ft. tower was a 16 ft. dia. dish used for 432 and 1296 work including successful moon bounce, on a very much strengthened 43 ft. high wind light tower. This tower was bent over like a hairpin at the top and the dish instead of pointing straight up (parked position) was looking down at the ground. The dish itself was not damaged.

I am very limited physically at the moment, but will try to get things back up and operate as soon as possible. ■

1981 Novice Contest



Medallions awarded for last year's Commonwealth Contest. This year's will be similar.

Photo: Lloyd Hull

Following are the results of the 1981 Contest. Firstly a few words to the contestants.

Thank you for the very high quality of the submissions and their presentation. Quite a lot of effort has been put into the clarity and the security of the logs, which greatly helped. From the results it is obvious that there was not a lot of activity — especially in the CW segments. I must agree with some of the comments made on this lack of interest and I will try to devise some method of generating interest for the 1982 Contest.

Some checking of the logs showed an undue amount of duplicate contacts. Although it was obvious that the logs had been checked, in some cases the number of duplicates were numerous. This increased my work load considerably.

Now for the results and congratulations to all participants.

NOVICE PHONE

Call	Points	Call	Points
VH4VHW	153	VK4VJK	464
VK7NBC	157	VK6NLD	509
VK1NAM	194	VK5NWS	557
VK7NNV	206	VK2NHV	603
VK4VCE	224	VK3NLO	638
VK4NIK	302	VK7NWR	677
VK4NVV	352	VK2KCB	820
VK5NOD	413	VK3PGG	888

NOVICE CW

VK3NZO 96

RADIO CLUB PHONE

VK2NWG*	70	VK2AUX/	
VK7NW	208	NCM	681
VK5SR	410	VK3DOA	818
VK2DXS	533		

RADIO CLUB CW

VK2NWG* 30

FULL CALL PHONE

VK2BID	198	VK3XB*	595
VK2BQS	236	VK3DAK	606

FULL CALL CW

VK5GZ* 10 VK3XB* 105

LISTENER PHONE

L60036 377 L30042 26

NEW ZEALAND PHONE

ZL11M 106

Those calls marked with an asterisk have participated in both Phone and CW sections.

COMMONWEALTH CONTEST 1982

WHEN

1200 GMT Saturday, 13th March, to 1200 GMT Sunday, 14th March, 1982.

MODE

CW (A1) only in the 3.5, 7, 14, 21 and 28 MHz bands. Call is CQ BERU. The Commonwealth Contest is a single operator, single transmitter event.

Eligible entrants are radio amateurs licensed to operate in British Commonwealth call areas as listed below.

Note that G, GW, GD, etc., are counted as one area.

SCORING

5 points for contest exchange (RST 001, etc.), 20 points for each of first, second and third contact in each call area on each band. Contacts with one's own area do not count at all.

LOGS

Separate logs are required for each band showing columns:—

1. Date and time GMT.
2. Station worked.
3. RST/serial number sent.
4. RST/serial number received.
5. Band.
6. Leave blank (for checking).
7. Contact points claimed.
8. Bonus points claimed.

Each band log should be separately totalled and should include at the end a check list showing areas worked and number of contacts per area. Separate band totals should be added together and the total claimed score entered on a cover sheet, giving particulars of station, QTH, equipment, power, antenna and a declaration that the rules and spirit of the contest have been observed.

It is important that logs are carefully checked for duplicate contacts. Unmarked duplicate contacts for which points have been claimed will be heavily penalized and logs containing in excess of five will be disqualified.

Entries may be single or multiple band. Single band entries should claim contacts on one band only, but details of contacts on other bands should be submitted for checking purposes only.

Entries should be addressed by AIR MAIL to:—

D. J. Andrews G3MXJ,
18 Downsview Crescent, Uckfield,
East Sussex, England, TN22 1UB.
Closing date: 17th May, 1982.

COMMONWEALTH CALL AREAS

The following call areas are recognised for the purposes of scoring in the 1982 Commonwealth Contest:—

A2 Botswana, A3 Tonga Is., A5 Bhutan.
C2 Nauru, C5 Gambia, C6 Bahamas.
G/GB/GD/GI/GJ/GM/GP/GW.
H4 Solomon Is.
J3 Grenada, J6 St. Lucia, J7 Dominica,
J8 St. Vincent.
P2 Papua New Guinea.
S2 Bangladesh, S7 Seychelles.
T2 Tuvalu, T3 Kiribati.
V2 Antigua and Barbuda.
VE1, VE2, VE, VE4, VE5, VE6, VE7,
VE8, VK1, VK2, VK2 Lord Howe Is., VK3,

VK4, VK5, VK6, VK7, VK8, VK9 Christmas Is., VK9 Cocos Is., VK9 Norfolk Is., VK9 Willis Is., VK0 Heard Is., VK0 Macquarie Is., VK0/VP8/ZL5 Antarctica*, V0, V3, VP2E Anguilla, VP2K St. Kitts Nevis, VP2M Montserrat, VP2V British Virgin Is., VP5 Turks and Caicos, P8 Falkland Is., VP8 S. Georgia, VP8 S. Orkney Is., VP8 S. Sandwich Is., VP8 S. Shetland Is., VP9, VQ9 Shagos, VR1 British Phoenix Is., VR6, VS5, VS6, VX9 Sable Is., VY1 Yukon, VYO St. Paul Is., VU India, VU Laccadive Is., VU Andaman and Nicobar Is.

YJ.

ZB2, ZC4/5B4, ZD7, ZD8, ZD9, ZE, ZF, ZK1 Cook Is., ZK1 Manihiki, ZK2 Niue, ZL1, ZL2, ZL3, ZL4, ZL Auckland and

Campbell Is., ZL Chatham Is., ZL Kermadec Is., ZM7.

3B6/3B7 Agalega and St. Brandon, 3B8 Mauritius, 3B9 Rodriguez Is., 3D2 Fiji, 3D6 Swaziland.

4S7.

5H3, 5N2, 5W Samoa, 5X5, 5Z4.

6Y5.

7P8, 7Q7.

8P, 8R.

9G1, 9H Maltese Is., 9J2, 9L1, 9M2, W. Malaysia, 9M6/9M8 E. Malayasia, 91, 9Y4.

* All calls operated from Commonwealth controlled areas of the Antarctic (VK0, VP8, ZL5, etc.) count as one call area.

AUSTRALIAN AWARDS

1. An individual award to the highest VK scorer — a gold medallion.
2. A state team award — 4 silver medallions to the state team of 4 which achieves the highest aggregate score. If the "individual" winner is a member of this team, he will receive the gold medallion instead of the silver one.
3. An award, as before, to the middle placing among VK entrants, i.e. to say, the 22nd placing among 43 or 44 entrants — a bronze medallion.

It is hoped that there will be sufficient entries in this year's contest to make up full teams from each VK call area.

Results of the 1981 contest appeared in Amateur Radio of November 1981. ■

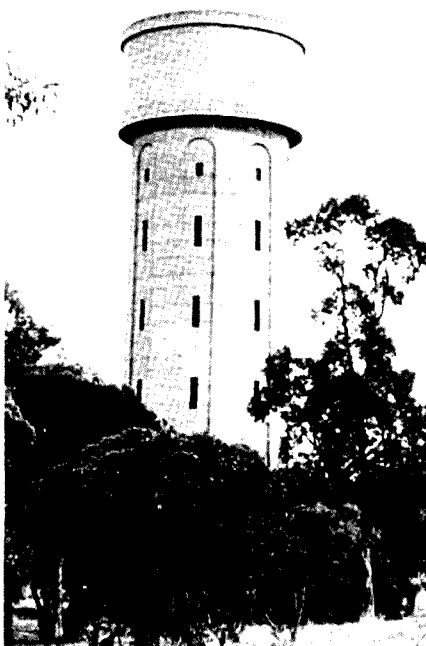
The Only Way to Go is Up

Eddie Cooling VK5ZE Hon. Secretary, Elizabeth ARC

One of the major problems that has faced the Elizabeth Amateur Radio Club in its 20 year history was the lack of permanent Club Rooms. It has always met in schools, church halls, Scout halls or whatever other venues it could obtain. Frequent moves and nowhere to store any equipment prevented the Club from getting involved in long term worthwhile projects. Now that has all changed. After successful negotiations with the South Australian Engineering and Water Supply Department the Club has signed an initial five year lease on a disused water tower in Elizabeth South with an option to renew. At last a permanent home to call our own.

Although the Club has only been in residence for a few months a great deal has already been accomplished. The ground floor has been painted (In part) and a kitchen, albeit somewhat primitive, has been set up and some furniture moved in. The floor is now being used as a general meeting hall. Two working bees are held almost every week and gradual improvements are being made. In addition to the meeting hall, a radio shack has been established on the top floor (some 120 feet up!). This rather elevated shack houses the Club's TS520, plus a number of items of borrowed equipment. Wire dipoles are strung from the windows of this floor and will suffice until the 3 element beam can be erected atop the water tank at the 160 foot level.

The tower is an enormous structure and comprises six separate floors. Ultimately each floor will have a specific function — it is planned to set up workshop facilities, lecture rooms, a library and an amateur television studio. A great deal of time and effort will be required to bring the project to fruition and many thousands of dollars (that we don't have at present) will have to be spent. However, the Committee and Club members are undaunted by the magnitude of the task and are confident that within a couple of years the Club rooms will be amongst the biggest and best in



Australia. One thing is certain — they will be unique!

Adapting a water tower for use as Club Rooms is not without its problems. Firstly, the shape of the rooms is far from ideal. The structure is built in the form of a gigantic outer cylinder with a smaller inner cylinder in order to support the massive water tank. As a result each room is in the shape of a king size doughnut. The rooms will therefore have to be divided into two or three segments to make best use of the floor space. Until this is done, not only do meetings have to be held on one side of the room, but we also have a problem with the acoustics, as each room behaves like a giant echo chamber. Conversation must be kept down to almost a whisper otherwise speech becomes unintelligible. This also creates some odd effects when the Club's radio station, VK5LZ, goes to air.

Transmissions sound like the operator is using a Good Buddy Power Mike wound flat out! Work is in progress to build soundproof cubicles to bring our audio back to normal. Access to the upper floors also presents some difficulties, particularly to older members or to those not accustomed to climbing vertical steel ladders. Each floor is connected to the one above by a 25 foot, somewhat flexible, steel ladder and entry to each upper level is via a small square manhole cut in the floor. Much of the furniture and fittings required on the upper floors will have to be knocked down and then re-assembled after the parts have been labouriously hauled aloft.

Currently progress is being restricted by lack of sufficient finance — the Club has never before had to think in terms of thousands of dollars. To overcome this limitation members are actively engaged in every type of fund raising imaginable, from bingo tickets to bring and buys. A recruiting campaign is currently under way and already showing results.

The Elizabeth Amateur Radio Club has had its ups and downs, but this new project gives us a mountain to climb and the only way to go is UP.

Enquiries about the Elizabeth Amateur Radio Club should be addressed to Box 8, Elizabeth 5112. Club meetings are held at the tower every Wednesday evening at 7.30 p.m. New members and visitors are always welcome. ■

QSP

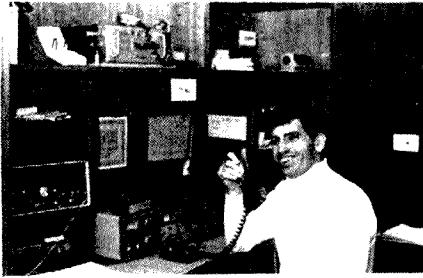
NEW BANDS — UK

November 1981 Radio Communication states that their licensing authority has authorised the use of the 10100 to 10150 kHz band for the amateur service on a secondary basis from 1st January, 1982. UK amateurs will be permitted the use of this band on a "non-interference" basis. The new bands at 18 and 24 MHz, they state, will remain allocated to the fixed and land mobile services until existing assignments have been transferred to new frequencies. ■

SPOTLIGHT ON SWLing

Robin Harwood VK7RH

5 Helen St., Launceston, Tasmania 7250



In the first paragraph of my January column I stated that the 40 metre amateur allocation had been increased as from January 1st. THIS IS INCORRECT, AN ERROR ON MY PART. NO SUCH ALLOCATION HAS BEEN MADE.

I sincerely apologise for any inconvenience caused to the WIA, Amateur Radio and its readers and the Department of Communication. I will certainly check my sources of information more thoroughly in future.

It has also come to my attention that several K calls have been operating on HF bands for which they are not entitled. They are only permitted to operate within the novice sub-band and on VHF and are not allowed to transmit outside their allocation.

As predicted in this column, events in Poland did dramatically alter early in December 1982. Radio has played a significant part in this conflict and it is being extensively utilized by all sides.

The first sign of trouble came at 2300 hours GMT on December 4th, when all transmitters, whether it be broadcasting or utility services, suddenly ceased. All external communications, telephone, telex, etc., from Poland were also severed from this hour. At 0500 GMT Radio Warsaw came back on with the now famous speech of General Jaruzelski, the Polish leader. Only one frequency was used, Warsaw's long-wave outlet on 227 kHz.

The external service was silent for 10 days, and *Radio Polonia* has been heard since December 15th, broadcasting in Polish, English, French and German. All their transmitters have been coupled to broadcast a common programme of two hours duration. The transmission starts from 1230 hours GMT until 2430 hours, consisting of 40 minutes in Polish and 20 minutes spots of the other languages. The best frequencies in Australia to observe R. Polonia would be their 41 and 49 metre band frequencies at 2030 GMT.

It was also reported on Media Network on Radio Netherlands that there have been several short transmissions from clandestine outlets from within Poland, using amateur radio equipment, on 40 and 20 metres, which have been heard in Denmark. However, it seems unlikely that

these could be observed in Australia, as they have been very weak in Scandinavia. Since the events in Poland there have been increases in Polish and other Eastern European languages broadcast by the BBC, Deutsche Welle, Radio Free Europe/RL, as well as very marked increase in jamming and other electro-magnetic counter-measures in Eastern Europe and Central Asia. This means others suffer from this electronic pollution.

This year marks two very significant anniversaries: the BBC's Overseas Services and the Voice of America. It is 50 years since the commencement of the BBC External Services in 1932, while the VOA will be celebrating its 40th year of operation.

On the 17th of December the USSR launched six amateur radio satellites. These have been observed very well in Australasia on their 29 MHz outlets. Three of the satellites are robot satellites — RS3, 5, 7 — while the remaining ones are transponders. It is not my intention to duplicate any information which will be available in the AMSAT column, so I would urge you to read the information in VK3ZBB's notes, as he has more precise data than I can provide.

However, on December 25th it was interesting at 1120 GMT to observe RS8 and Oscar 8 overhead at the same period, and to hear stations working through both transponders simultaneously. Fortunately the transponder outlets are different in frequency by approximately 100 kHz.

The prospect that these Russian satellites will give us a larger window will generate interest in more operation in amateur satellites than is presently available.

Recently I was reading the account of Clarence W. Jones and of his endeavours with the commencement of Radio HCJB in the early 1930s. From a 250 watt transmitter on 5936 kHz in 1931 to a vast transmitter of 500 kW today, capable of broadcasting on any nominated frequency, is certainly an accomplishment. Interestingly, HCJB has been going longer than the BBC External Services and the VOA, yet is only nine months behind Radio Vaticana. What is the oldest continuing shortwave broadcaster? If you have any ideas or comments I would like to hear from you.

Well, that seems to be all for this month. Remember if you have any news or suggestions, please feel free to communicate them to the address at the head of this column. Until next time, the best of 73 and good DXing!

CLUB PROGRAMME ORGANISERS

DON'T FORGET THE WIA VIDEOTAPE
LIBRARY IN PLANNING YOUR EVENT
CALENDAR.

See catalogue on page 44.

WICEN

R. G. HENDERSON VK1RH,
Federal WICEN Co-ordinator

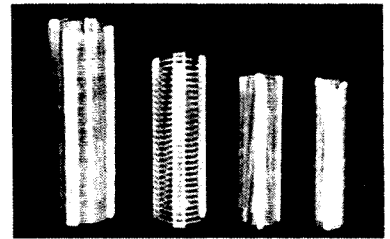
This month I wish to briefly outline a subject that up to now has had little attention devoted to it in this column — *First Aid*.

The St. John's Ambulance Brigade lists the following as topics for a general first aid course:—

- Blocked airways.
- Resuscitation.
- External cardiac compression.
- Haemorrhage (bleeding).
- Recovery position.
- Epilepsy.
- Diabetes.
- Snake and spider bites.
- Degree of consciousness.
- Clinical and biological death.
- Emergency childbirth.
- Multiple casualties—treatment priorities.
- Sporting injuries.

WICEN members have several options open to them regarding first aid training, they may attend St. John's or State Ambulance services courses, or arrange to attend SES, VRA or other courses, or they can negotiate with qualified instructors to conduct a course for them. It is useful also to get advice on the contents of a suitable first aid kit for mobile station carriage and use.

AIR-WOUND INDUCTANCES



No.	Diam.	Turns per Inch	Length	B. & W. Equiv.	Price
1-08	1/2"	8	3"	No. 3002	\$1.50
1-16	1/2"	16	3"	No. 3003	\$1.50
2-08	5/8"	8	3"	No. 3006	\$1.90
2-16	5/8"	16	3"	No. 3007	\$1.90
3-08	3/4"	8	3"	No. 3010	\$2.15
3-16	3/4"	16	3"	No. 3011	\$2.15
4-08	1"	8	3"	No. 3014	\$2.40
4-16	1"	16	3"	No. 3015	\$2.40
5-08	1 1/4"	8	4"	No. 3018	\$2.65
5-16	1 1/4"	16	4"	No. 3019	\$2.65
8-10	2"	10	4"	No. 3907	\$3.85

Special Antenna All-Band Tuner Inductance

(equivalent to B. & W. No. 3907-7")

7" length, 2" diameter, 10 turns per inch,
\$6.65

References: ARRL Handbook, 1961; "QST", March 1959; "Amateur Radio", December 1959.

Take the hard work out of Coil Winding —
use "WILLIS" AIR-WOUND INDUCTANCES

WILLIAM WILLIS & Co. Pty. Ltd.

98 Canterbury Road, Canterbury, Vic. 3126
PHONE: 836 0707

RAOTC

RADIO AMATEURS OLD TIMERS CLUB

1982 QSO PARTIES

The "get-together" QSO parties arranged last year in conjunction with the Old Timers' Club, New Zealand, got away to a rather slow start, but by the third one, on 14 MHz, support had built up to a reasonably solid level.

It has been agreed that two more will be held this year, with slight changes in the rules and a time limit of three hours.

RULES

Eligibility

The contest is open to members of RAOTC (Australia) and OTC (New Zealand).

Note: There are some members of the Australian Club in overseas countries, mainly USA, who took part in last year's QSO parties.

Contest Exchange

Members will exchange:—

1. Their Club membership numbers, VKs prefixed by "A", ZLs prefixed by "Z".
2. Year of first licence.
3. Name.
4. Age.

E.g.: Nr. A256 1951 Bill 49.
Nr. Z128 1923 Harry 78.

Scoring

One completed contact with a member on CW or SSB, but not both, will score 5 points.

Multiplier = the total of VK, ZL and overseas call areas contacted.

Final Score

Contact points x multiplier.

Dates and Times

Contest 1 — 20 metres:

Monday, 8th March, 1982, 0200Z to 0500Z.

Please spread out around centre frequencies — CW 14050 kHz, SSB 14150 kHz.

Contest 2 — 40 metres:

Monday, 9th August, 1982, 0880Z to 1100Z.

Centre frequencies — CW 7015 kHz, SSB 7075 kHz.

A reminder will be given later in the year regarding the date of this contest.

Entries

Claimed scores, showing mode (CW, SSB or CW/SSB), number of QSOs and multiplier, should be forwarded to John Tutton VK3ZC, 31 Denham Street, Hawthorn, Vic. 3122.

Lists will be exchanged between the VK and ZL Clubs for publication of results.

Keep these dates before you and please make an effort to participate.

All amateurs who have been licensed for a period of 25 years or more are eligible to join the Radio Amateur Old Timers' Club.

A self-addressed stamped envelope (9 x 4) to the Secretary, Harry Cliff VK3HC, PO Box 50, Point Lonsdale, Victoria 3225, will bring you a membership application form. ■

INTRUDER WATCH

Bob McKernan VK4LG
Federal IW Co-ordinator

December's Intruders of the Month Award was shared by two very troublesome stations which continue to attract the attention of Intruder Watch. UMS, reputed to be Russian Merchant Navy shore to ship, operates daily on 21032 kHz, and can often be heard on 14141 and 14171 kHz as well. UMS uses A1 CW and F1 RTTY, with a frequency shift of 250, 500 or 1000 Hz. CQ5 operates A1 CW on 21115 kHz at 0400, 0600, 0800 and 1000 GMT, Monday to Saturday.

YOU SHOULD COMPLAIN to your Division IW Co-ordinator, giving details of your observations on these intruders. As much as possible of the following information should be reported. Date, GMT, frequency, mode of transmission (if you're not sure, just describe the signal), strength, bearing, type of traffic, any call signs heard, and especially harmful interference details.

As these two intruders are outside novice segments, it will be difficult for novices to report harmful interference. Where this is possible, every effort should be made to describe interference. No government action is likely if multiple instances of harmful interference cannot be quoted.

Now for the difficult part. I request that as many stations as possible operate exactly on the CW frequency, or on one of the F1 frequencies of UMS, around 21032 kHz. You won't make many contacts, but the Russian Merchant Navy will be soon looking for another frequency, hopefully outside amateur bands. ZL1BAD and I have been trying to contact each other on this frequency for 1½ years. Much more effort by more amateurs is required. It is logical and necessary to operate on 21032 kHz for the following reasons:—

- (a) You have to be on the frequency to log the intruder anyway.
- (b) Other Australian and foreign amateurs will soon realise why you are on the frequency and similar action by others may result.
- (c) You will be discouraging Russian intruder activity on this frequency, and possibly discouraging further intrusions.
- (d) The harmful interference experienced from UMS will be an important part of your report.
- (e) If UMS interferences with your QSO with a USSR station, you will be justified in acquainting the station of the source of QRM. ■

BUYING OR SELLING GEAR?

HAMADS
MAKE IT HAPPEN FAST

AR AWARDS

The Publication Committee has pleasure in advising the names of recipients of awards for 1981.

HIGGINBOTHAM AWARD

Mr. DREW DIAMOND VK3XU, for articles over the period and general work for amateur radio (\$100).

TECHNICAL AWARD

Shared between Mr. HANS RUCKERT VK2AOU ("A More Complete Antenna Test — Beliefs and Facts" — June AR) and Mr. BOB SLUTZKIN VK3SK ("A Review of Antenna Noise Bridges" — March, April and May ARs). (\$100).

ASJA

(Al Shawsmith Journalistic Award)

Mr. CHRIS LONG ("Vale Gil Miles VK2KJ" ("Vale History") — April AR. (\$30, plus plaque) ■

BOOK REVIEW

INTO ELECTRONICS

Published by WIA (NSW) Education Service. This book contains 92 pages of text and updates the previous YRS publication "Elementary 1 Electronics Notes".

It is divided into 19 chapters starting from Basic Electric Circuits, which it fully covers, through to a discussion on test instruments, wave propagation, transistors and receivers.

The book assists the reader with many diagrams, and at the end of each chapter are revision questions.

Each chapter is basic and concise, and does not go into too much technical depth.

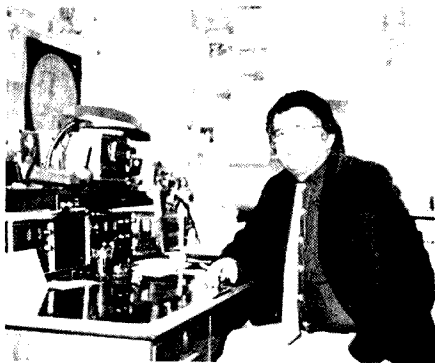
This book gives a newcomer a grasp of the fundamentals required for the further study of a novice and/or full amateur radio certificate.

As a test of its effectiveness, I allowed my 14-year-old 3rd form daughter Wendy to give me her impressions. She has had no previous direct involvement with electronics apart from her school studies. Wendy found it easy to read and understand, particularly the associated drawings, and stated that this has given her the information her teachers had difficulty in explaining, and would certainly assist prospective amateurs in their study.

It represents good value at \$3.00 (posted) and is available from the WIA (NSW) Education Service, 14 Atchison Street, Crows Nest, NSW 2065, or Magpubs.

Reviewed by VK3UV. ■

AWARDS COLUMN



Bill Verrall VK5WV
7 Lilac Avenue, Flinders Park, SA 5025

The concluding part of my "think piece" on DXCC is this description of the UN-DU Award of the Philippines.

THE UN-DU AWARD

The Philippine Amateur Radio Association hereby offers a permanent and continuing international award to be known as the "UN-DU Award of the Philippines" on the occasion of the 45th anniversary of its organization.

This award is to be given to any licensed amateur in any country who has obtained 100 or more confirmed QSL cards, for contacts with at least 100 member countries of the United Nations.

This award is given in commemoration of the formation of the United Nations in 1945, of which the Philippines is a charter member and an active supporter, having contributed many distinguished names to the service roster of the world organization. Among them are our current Secretary of Foreign Affairs, Carlos P. Romulo, who served as Philippine Ambassador to, and President of, the UN General Assembly; Hon. Rafael Salas, who has distinguished himself as the Executive Director of UN-FPA; as well as many Filipinos who are now serving the United Nations in various capacities.

We, in the Philippines, believe that this award, aside from the international interest that it may focus on our own country, will foster international goodwill and understanding through person-to-person contacts, and further enhance the image of the United Nations as the hope for One World community of nations and peoples.

COMPLEMENT TO THE DXCC AWARD

This award is also intended to complement the DXCC award and to correct the various deficiencies for which it has often been criticized:

1. The DXCC Award contains "grandfather clauses" that favour operators with years of experience, since deleted countries are still counted as far back as 20 years ago.

2. DXCC uses arbitrary definitions of countries based on past history, perhaps hundreds of years ago, such as Scotland, Wales, Northern Ireland.

3. DXCC uses arbitrary definitions of countries based on geography, for instance, Channel Islands which lie less than 250 miles from the English coast, while other countries must provide an island more than 250 miles from their coast to make a "new country".

4. DXCC recognition as a country, of uninhabited islands, reefs, etc., as well as former colonies reverting to the mother country (such as Goa in India) is a source of much dissension.

5. Further discrepancies show up. For instance, under DXCC rules, an island reef and/or sand bar above water level, less than 250 miles from the Philippines shoreline in the South China Sea, would be counted as a "country" if visited by any operating hams, except those from the Philippines, if it were closer to us than any other country, and if we claimed it but did not occupy it.

To correct these deficiencies, we propose for our countries list only countries who are regular members of the UN, the authorized UN agencies. Contacts with colonies will be not considered as contacts with the governing nation, nor will they be considered as contacts with a country.

The UN-DU Award, like the DXCC, is for 100 countries initially. However, due to geography and numbers concerned, it will be more difficult to get 100 UN-DU than 100 DXCC. However, completion of the UN Award (as regards nations which licenses hams) is much easier than DXCC, as the latter depends on rather chancy DXpeditions.

Actual completion of the entire UN countries listing of 149 countries is not possible at present due to non-licensing of hams by several UN nations.

RULES FOR THE UN-DU AWARD

1. To qualify for this award, one must be a licensed radio amateur, in any country whether or not such country is a member of the United Nations.

2. He must acquire 100 or more QSL cards for contacts after the formation of the United Nations, October 24, 1945, with at least 100 UN member nations, which may include one from his own country, if a UN member.

3. He must mail the above QSL cards, along with a fee of US\$12.00, to the Philippine Amateur Radio Association (PARA) at the Philcomen Building, Ortigas Avenue, Pasig, Metro Manila Philippines; he also must submit a photocopy of his valid amateur licence.

4. An initial application may be made for 100 countries. If additional countries are applied for, they shall be in group of 5 countries. No additional fee is charged for this.

5. Awards will be assigned a serial number according to the date of mailing. If this is not clear in the package, then the date stamped at the Philippine receiving post office will prevail.

6. No Philippine application will be acted upon until at least ten awards are made to amateurs of other countries.

7. All submitted cards will be returned after checking.

8. The UN-DU list of countries includes:

(1) All countries who are regular members of the United Nations. To be valid, contacts with any country must be made on or after the date of its admission to the UN.

(2) All UN agencies count as one country. Such include any UN station licensed to the UN or its agency by the host country (e.g. 4U1 ITU in Geneva), or any amateur station located in UN territory bearing a call sign not in the host country's sign block (e.g. 2U2 UN in New York), or any UN authorized amateur station in UN occupied territory (e.g. in Antarctica or in a country occupied by a UN peace keeping force).

(3) If for any reason a country loses its UN membership, or any UN agency ceases operation, such country or agency shall have to be deleted from the UN-DU Award certificate effective on the date the membership is lost.

(4) Contacts with colonies will not be considered as contacts with the governing nation, nor shall any colony qualify as a country under this Award.

9. The Awards may be granted for each of the single modes or mixed modes: SSB, CW, RTTY, SSTV, Mixed, or Satellite Relay (also mixed).

DESCRIPTION

This Award is rather large, approximately 500 mm x 400 mm, so you have difficulty in finding a suitable frame. It is printed in black and gold on good quality parchment. The surround contains illustrations of the 150 flags of UN member nations on which PARA has individually cut and glued a multi-colour print of each flag, a most laborious and time consuming task, but the resulting appearance is outstanding. However, my copy has about 30 flags missing because PARA must have run out of stocks of some flags when my Award No. 51 was prepared in July 1981. If you are keen, it is possible to purchase a world map containing the correct size flags from a good map shop, so you could complete the job yourself. My Award also contains 5 gold stars, one for each multiple of five countries over the initial 100 countries. This Award is a worthwhile addition to the shack wall, but I do not have a suitable frame. Here is a suggestion. If at any time you have wrecked an old B and W TV set, the type that had the hardened glass protection screen in front of the picture tube, put this on top of your operating desk or table and put your award underneath. The piece of glass can be stuck down around the edges with good quality tape which only needs to be replaced about every 18 months. I have two such pieces of glass which is also a protection against spills of coffee, beer, etc., during your frantic DX and contesting, and also protects the table surface against scratches through continually up-ending the rig to tweak the last ounce of power out of the thing.

Good hunting.

NOVICE NOTES



Edited by Ron Cook VK3AFW

Listening around the bands recently has convinced me that a number of operators need to polish up their procedures. The following hints have been found useful by amateurs around the world over many years.

Listen before calling. Ask whether the frequency is in use. The band conditions may prevent you hearing both sides of a QSO yet you may be the source of QRM.

Keep your calls brief. Speak clearly and slowly, don't gabble. Many overseas opera-

tors will not comprehend rapidly spoken English.

If using CW send at the speed you want the other station to use. Sending CQ at 25 w.p.m. when you can't cope with 10 w.p.m. is inviting trouble.

Use push-to-talk to enable rapid response to queries. Break for short queries.

Give honest reports. A 5 and 9 plus 20 report followed by a request to repeat your report and their name does nothing for your credibility.

Keep transmissions short. Many VHF repeaters have "time-out" systems. If there is a contest on, taking more than 30 seconds to exchange and acknowledge correct call signs and numbers is taking too long (on phone anyway). Slick operators can do this in 10 to 15 seconds. If there are four stations in a round table QSO and each talks for a reasonable three minutes then you can have five transmissions per hour. If you talk for four or five minutes you are probably a bore and certainly depriving the others of an opportunity to participate. Be concise and then you will be brief. Avoid saying the following as fillers:—

"Er, er, um, yeah", "Yeeeahh", "Like that", "You know".

In everyday speech these and similar terms are common and probably offend very few. They are great time wasters and reduce your QSO rate when used on air. Crudities and obscenities are offensive to most people regardless of what your friends might think.

Be courteous and sensible when pile-ups for DX develop. Transmitting when the DX station is calling doesn't help anyone. Calling when someone else is calling will nearly always prevent the DX station copying anyone.

After calling CQ on CW if there is no reply on the frequency tune plus and minus a kilohertz or so. Some rigs have offsets and not everybody nets as accurately as you.

Do your equipment tests with a dummy load. Don't radiate long test transmissions, especially if you are checking out some instability.

Keep the mike gain wound back and use a minimum of speech clipping. Modern rigs have more than enough gain. Turning the gain up will give impressive final current meter readings but can cause the final to be driven too hard. This causes distortion and generates harmonics and in-band splatter.

Because your signal is appearing on frequencies other than those in the pass-band of the receiving station you are wasting energy and may not be as strong as you could be.

A clean signal is admired. A signal that occupies 50 kHz will attract undesirable attention.

This is not an exhaustive list but if you stick to it you will infrequently be the object of complaint. Happy operating.

73 de VK3AFW. ■

INTERNATIONAL NEWS

10 MHz BAND

UK amateurs (Class A) are able to use the 10 MHz band (10100 to 10150 kHz) as a secondary service from 1/1/1982. The UK follows the IARU Region 1 band plan as using 10100 to 10140 kHz for CW only and 10140 to 10150 kHz for CW and RTTY.

The PNG Administration has allowed their amateurs to use this band on a secondary basis.

OTHER BANDS OVERSEAS

From 1/1/1982 the special UK 70 MHz allocation has been reduced by 200 kHz at the top end and the UK 1.9 GHz allocation has been changed to 1240-1325 MHz with earth to space amateur satellite service availability from 1260 to 1270 MHz. UK amateurs have *not* been allocated the new 18 and 24 MHz bands.—Rad. Comm., December 1981.

THAI AMATEURS

According to a report in "The Bangkok Post" of 3rd December Thai amateurs who pass their P. and T. exams will be licensed to operate "freely for the first time", including the 2m amateur band.

VHF/UHF BAND PLANS IN JAPAN

JARL recently announced modifications to their band plans for the 6 and 2m bands, 70 cm and 23 cm bands. In regard to 6 metres, 50.010 MHz is reserved for the JARL beacon, 50.1 to 51.0 MHz is for CW, RTTY, AM, SSB and SSTV, whilst 50 to

50.01 is reserved for EME, meteor and auroral scatter. 51 to 52 is set aside primarily for FM less than 16 kHz bandwidth with AM, SSB, SSTV, RTTY and CW permitted as "secondary". Above 52.0 all modes are permitted except FM being "secondary" (for replying to calls from overseas stations on 52 MHz) up to 52.5 MHz. EME, etc., is set down for the 144.0 to 144.1 MHz, 431.9 to 432.24 MHz and 1295.9 to 1296.1 MHz segments.

CANADIAN LICENCES — RECIPROCALITY

The address for communications is given as "Director-General, Telecommunication Regulatory Branch, DOC, 300 Slater Street, Ottawa, Canada K1A0C8", or apply in person to the nearest DOC Regional Office.

BANGLADESH AMATEUR RADIO LEAGUE

The BARL has applied for membership of the IARU. The main objective in forming and registering the Society in 1979 was to negotiate for the revival of amateur radio in Bangladesh. Applications for amateur licences are still held pending by the Wireless Board.

LIBERIAN MM STATIONS

According to the Liberian Radio Amateur Association, which maintains close liaison with their licensing authorities, a number of maritime mobile ELO call signs are in use by pirates.

AMATEUR POSTAGE STAMPS

An amateur radio stamp has been issued by the Government of Djibouti in the value of 250 Djibouti Fcs. ■

1982 CALL BOOKS NOW AVAILABLE

NOW IN STOCK —
U.S. AND FOREIGN
CALL BOOKS

Hurry — as only a limited
quantity available.

U.S. CALL BOOK — \$20.00
PLUS \$4 POST

FOREIGN CALL BOOK — \$19.00
PLUS \$4 POST

Also available —

DX GUIDE — \$3.50
PLUS \$2 POST

KIT OF MAPS — \$6.00
PLUS \$2 POST

G.F.S. ELECTRONIC IMPORTS

15 McKEON ROAD, MITCHAM 3132
or P.O. Box 97, Mitcham 3132

Phone (03) 873 3939

The WIA Videotape Library

John Ingham VK5KG
Federal Videotape Co-ordinator

The titles in the WIA videotape collection have been ordered into three groups as follows:—

Group A: Due to copyright restrictions, these programmes are available ONLY on loan. Borrowers may NOT make copies from tapes on loan.

Group B: Copyright clearances enable the WIA to copy these programmes on to a blank cassette provided by the user.

Group C: These are televised technical lectures available as a copy on to a blank cassette provided by the user. (Because these are not "formally" produced programmes, the WIA may withdraw any title to make tapes available for future lectures.)

AVAILABLE FORMATS

As of the date of this publication, the WIA Federal Videotape Service can provide programmes ONLY on the Umatic or Philips N1500 formats. VHS, Beta, etc., are regrettably NOT available.

NOTE: Many high schools, technical colleges, etc., may be willing to allow the use of their Umatic or Philips N1500 VCRs so that you might either copy WIA video programmes on to your own format (Group A programmes excluded) or replay directly to your club. However, you must STILL provide us with a blank Umatic or Philips N1500 videocassette to obtain a Group B or C programme.

HOW TO ORDER WIA VIDEOCASSETTES

Group A: With your request include sufficient stamps to allow postage to you of the number of cassettes requested, plus additional stamps to the value of a suitable padded mail bag(s).

Also include the following declaration signed by a responsible officer of your club: "I hereby undertake to prevent the copying or transmission of (name of programme) whilst it is in my care, and further, to return the same promptly upon use."

Group B and C: With your request include a blank cassette(s) of sufficient length and of either the Umatic or Philips N1500 formats. Also include sufficient stamps to cover the return postage to you. Your cassette will normally be re-addressed to you in the same wrapping you used. If you wish to use padded mail bags, here is a handy hint: Include with your blank cassette a stamped, self-addressed padded mail bag; your original padded mail bag will then be returned to you with your cassette for future re-use without having to re-address it!

COST OF POSTING VIDEOCASSETTES

It is not possible to give a flat rate for Surface Postage to and from the WIA Videotape Co-ordinator because the rates vary according to the distance involved. However, present Airmail Postage guides show that there is a minimum charge of \$6 from anywhere in Australia for up to

2 kg worst case (Qld., WA, NT), i.e., up to 2 x 60 min. videocassettes. But at the rate that postal charges are inflating, that figure will not stay stable for long!

As a guide then for estimating postage a 60 min. Umatic videocassette weighs approximately 900 gm, including box, while a 30 min. one weighs 750 gm. Either will fit into a 26 x 36 cm padded mail bag.

WHERE TO ORDER FROM

All requests for Group A, B and C programmes should be sent to:—

WIA Federal Videotape Co-ordinator
John Ingham VK5KG,
37 Second Avenue, Sefton Park,
SA5083.

Please allow 2-3 weeks for your request to be processed.

CATALOGUE OF TITLES

Group	Title	Approx. Duration	Colour or B. & W.	Availability
A	"G6CJ's Aerial Circus" (1 x 60 min. plus 1 x 30 min.)	90 min.	B. & W.	Loan
A	"7J1RL DXpedition"	60 min.	Colour	Loan
A	"Wireless Telegraphy" (circa 1910)	10 min.	B. & W.	Loan
B	"Official Opening of Burley-Griffen Building" (SA WIA HQ)	50 min.	Colour	Copy
B	"This is Amateur Radio" — ARRL (teenagers)	15 min.	Colour	Copy
B	"Moving Up To Amateur Radio" — ARRL (CBers)	15 min.	Colour	Copy
B	"This is Amateur Radio" — ARRL (obsolete)	30 min.	Colour	Copy
B	"The World of Amateur Radio" — ARRL (general)	30 min.	Colour	Copy
B	"This Week Has 7 Days Looks at Amat. Radio"	30 min.	Colour	Copy
B	"Amateur Radio — The National Resource of Every Nation" (general)	6 min.	Colour	Copy
B	"Low Definition Television" (the Baird Sys.)	30 min.	Colour	Copy
B	"The History of ATV in SA"	30 min.	Colour	Copy
B	"ATV in Australia, 1978" (made for British ATV Club)	30 min.	Colour	Copy
B	"ATV in United Kingdom, 1980"	30 min.	Colour	Copy
B	"ATV in Australia, 1980/81"	60 min.	Colour	Copy
B	"SSTV Pictures from Space" (from Voyager)	15 min.	Colour	Copy
C	Lecture — "Wire Antennas" (VK5RG)	40 min.	B. & W.	Copy
C	Lecture — "Loaded Wire Antennas" (VK5NN)	50 min.	Colour	Copy
C	Lecture — "RTTY" (VK5QX)	40 min.	B. & W.	Copy
C	Lecture — "Tracking Oscar" (VK5HI) (VK3ATY)	40 min. 45 min.	B. & W. Colour	Copy Copy
C	Lecture — "The Signal to Noise Story"			
C	Lecture — "An ATV Hamshack uComputer" (VK3AHJ)	10 min.	Colour	Copy
C	Lecture — "The Apollo 13 Disaster" (VK5JM) (2 x 60 min. cassettes preferred)	90 min.	Colour	Copy
C	Lecture — "History of uProcessors" (VK5ZFQ)	60 min.	Colour	Copy
C	Lecture — "Understanding uProcessors" (VK5PE)	60 min.	Colour	Copy
C	Lecture — "Winning Foxhunts" (VK5TV)	45 min.	Colour	Copy
C	Lecture — "An Auxiliary Battery Charger" (VK5NX)	25 min.	Colour	Copy

AROUND THE TRADE

TELESCOPIC 5/8 WAVE ANTENNA NOW AVAILABLE FOR 2m HAND-HELDS

GFS Electronic Imports of Mitcham, Victoria, announced the availability recently of a telescopic 5/8 wave gain antenna designed for use on 2 metre hand-held transceivers. The antenna, known as the G-58, is manufactured by VoCom in the United States. They claim a gain of 5.6 dB over a 1/4 wave whip and nearly 10 dB over the common "rubber duckie" antenna.

The G-58 makes use of a 10 section telescopic whip which extends to 47 inches and telescopes to a convenient 8 inches for storage, etc. Below the telescopic section is a loading coil/spring followed by a BNC connector. The spring loading coil gives the G-58 good flexibility for the time when your hand-held may fall over or when the antenna is knocked against something.

Tuned for correct resonance by VoCom while mounted on to a hand-held, the G-58 has a VSWR better than 1.5 : 1 from 144 to 148 MHz, giving good operation over the entire band.

The new antenna is priced at \$34 plus \$2 post. For further details contact GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. Phone: (03) 873 3939. Telex: 38053. ■

VICOM CELEBRATE 7th BIRTHDAY

Vicom International, Australia's leading supplier of amateur radio gear, has just celebrated its 7th birthday.

Founded by three of Australia's best known hams — Russell Kelly, Peter Williams and Michael Goode in 1974 — the company has grown dramatically in the past three years.

Russell Kelly VKANT and Peter Williams VK3IZ, are both past Presidents of the Victorian Division of the WIA, and Michael Goode VK3BDL, a former Treasurer, started the company to give amateurs better service and better equipment.

The company now has a staff of 20 and offices in every State, and is sole authorised distributor of leading brands Icom, Daiwa and Regency.

To mark its move to new premises in City Road, South Melbourne, Vicom is also embarking on a major advertising campaign to remind amateurs that Vicom is still the most professional in amateur radio, with a large number of its staff all still active in the amateur radio ranks.

The Vicom directors say that because of its success in the amateur radio market the company has had to grow dramatically to keep up with demand. However, this has not meant any slackening in the personal service the company offers.

"We have built the company on expert service and we intend to keep it that way," Mr. Kelly said.

"Our real strength has been in knowing not only what's happening here in Aus-

tralia, but knowing what's happening overseas in new developments as they happen."

Vicom believes that this has extended to the after-sales service area where the Company believes its back-up is the best in Australia.

Vicom has decided to launch its campaign with a series of advertisements introducing the members of their team who have helped make the company such a success. ■

TONO RELEASES NEW COMMUNICATIONS COMPUTER

Tono have released the new Theta-9000E which is an upgraded version of the popular Theta-7000E RTTY Communications Terminal.

The most attractive feature of the new 9000E is that a word processor is now built in to the unit.

Another feature is the graphic function to enable easy send/receive graphic patterns to be drawn by an accessory light pen on an optional video terminal.

The memory capacity has also been increased with the display now holding 16,416 characters with a battery backed up memory of 256 characters by 7 channels.

The distributors of Tono in Australia and New Zealand, Vicom International Pty. Ltd., claim that the Tono 9000E has many hundreds of features.

A brochure containing details of many of the features is available by writing to Vicom International Pty. Ltd., P.O. Box 366, South Melbourne, Vic., 3205. Vicom have indicated that their first supplies are expected around March 1982 and the retail price will be around \$1,259. An optional video monitor Model CRT1200G is available at \$329. ■

METEOR BURST COMMUNICATIONS

A highly reliable method of data telecommunications using reflections from ionized trails, or re-radiation of particles within the trail, caused by meteors entering the earth's atmosphere.

Billions of ionized meteor trails are produced daily on a global basis at heights ranging from 50 to 75 miles above the earth's surface. As amateurs know, these trails are very effective reflectors of radio communications. Although the ionized trails diffuse rapidly and usually disappear within a few seconds, the sheer world-wide volume of meteor trails permit an average communications data rate equivalent to about 100 words per minute, 24 hours per day. Maximum communications distance between any two stations is about 1,200; however, greater distances are possible by relaying. Only a single frequency, or pair of full duplex frequencies, normally between 40-50 MHz, is required for 24 hours point-to-point service, regardless of path length. Antennas can be dipoles but small 5-element yagis are preferable. Maximum power required is no more than 1,000 watts with many applications at 300 watts or less.

Consequently, a Meteor Burst Communications system is comparatively simple, uncomplicated, without moving parts, and lends itself to great mobility and transportability with minimal installation time required.

Because the meteor trail is bi-directional, it can be used for full duplex as well as half duplex operation. The station originating the communications enters the message in the Transmit Storage while the transmitter "probes" for a usable meteor trail. Within seconds the recipient station receives the probe, transmits receipt back from the same trail, and the stored information is "burst" over the link at a data transmission rate up to 9,600 bits per second. When the trail diminishes to an unusable level, as evidenced by fading of the return probe received at the originating station, the modulation is discontinued. Seconds later, when a new meteor trail path is established between the two stations, the process is automatically repeated until the entire message has been transmitted. For multiple station networks, each station can be configured as a functional station as well as a relay station, providing alternate transmission paths as well as extended ranges.

The US Government is a leader in the operational use of Meteor Burst Communications. The Alaska Meteor Burst Communications System (AMBCS) is shared by five US Government Agencies (Army Corps of Engineers, Bureau of Land Management, Department of Agriculture, Geological Service, and the National Weather Service) with data sites throughout Alaska, and a master or interrogating station in Anchorage, Alaska. The US Department of Agriculture SNOTEL system transmits snow pack data from 475 unmanned sites spread throughout 11 western states using solar panels for input power. The most of interrogating stations are at Boise, Idaho and Ogden, Utah.

Unauthorised interception of Meteor Burst Communications is minimised when directional antennas are used because of the small "footprint" of the received signal, approximately 5 miles by 30 miles, and the low probability of coincident meteor trails existing at the same "burst" incidence between the desired and undesired stations. The signal format also lends itself to easy encryption if additional security is desired. A Meteor Burst Communications system has inherent anti-jam protection for the same reasons.

Vicom can provide a total Meteor Burst Communications system whether a straightforward RTTY net or a complex data communications system for manned or unmanned sensors. Data from sensors (temperature, pressure, rate of flow, etc.) collected manually, by wire lines, or by RF lines of sight transmission can be centrally collected and stored, and then sent automatically or on command to final processing sites over a Meteor Burst Communications system. The Meteor Burst product line includes all elements and interface equipment for whatever the communications requirement.

A full line of portable support equipment is available for local data collection or on-the-air testing of transmitter performance, receiver performance or terminal performance with local or manual data 1/0 capability.

In all cases the equipment has been designed for minimal power drain for long battery life or solar cell operation. A universal battery charger provides battery serving, and test support, where solar capability is inadequate.

Equipment can be configured for airborne operation for data collection and storage for Meteor Burst Communications in-flight operation.

Vicom International Pty. Ltd.'s professional division represents a USA Company, Scientific Radio Systems, who provides this equipment. ■

FAST TUNE-UP ANTENNA TUNERS RELEASED

Two automatic antenna systems with a three-second tune-up time have just been released in Australia by distributors, Vicom International.

The result of extensive engineering research by maker Icom, the new equipment is the first of its kind anywhere in the world.

Icom has designed the equipment to match existing Icom stations. However, the manufacturer also says it can be matched to other brands.

Two models are available — the ICAT 100 and the ICAT 500, with continuous power of 100 watts and 500 watts respectively. With newly developed circuitry which detects the resistance and reactance of the load, the antenna tuners are able to achieve remarkably quick tune-up time. The tuner controls two motors which adjust the two major variable capacitors.

When used with the Icom station, band changing can be achieved automatically by the band switch on either the IC 730 or IC 720A transceivers. In addition, the ICAT 500 unit can be used in conjunction with the new Icom linear amplifier, the IC 2KL.

The antenna tuners also have a pre-setting capability so that the matching circuit can be used separately for each band which enables quick frequency changes with trouble-free operation.

In addition, the antenna tuners have four coaxial sockets for antennas and are able to select suitable antenna for each band automatically. When the power for the antenna tuner is turned off, the tuner can be used as an automatic antenna selector through these antenna ports. The power source is either 13.8 v DC or 230 volts AC, and naturally the timer covers all the current amateur bands and the new WARC frequencies.

The automatic antenna tuners have 35 transistors, 10 ICs and 54 diodes and come in two models of either 1 kW (PEP) or 200 kW (PEP). Automatic tune-up time is within 3 seconds with a matching precision of VSWR 1:1.2.

Vicom International and their authorised dealers throughout Australia now have stocks available. ■



The IC-AT100 coupled with the IC720A and the IC-PS15.

CONTESTS

Reg Dwyer VK1BR

PO Box 236, Jamison 2614

CONTEST CALENDAR

February

6/7 John Moyle Field Day AR 12/81
13/14 Dutch PACC Contest
26/28 CQ WW 160m Phone
27/28 French Phone AR 1/82
27/28 RSGB 7 MHz CW

March

13/14 QCWA Phone QSO Party
27/28 CQ WW WPX SSB

EXCHANGES AND RULES

RSGB 7 MHz CONTEST

Phone, February 6-7; CW, 27-28. Start 1200 Saturday, end 0900 Sunday. Only single operator stations will be recognized.

Bands

7.04-7.10 Phone, 7.00-7.04 CW.

Exchange

RST plus cypher from 001.

Scores

15 points for stations outside Europe in contact with British Isles stations.

Multiplier

One for each different British Isle prefix, a total of 42. No credit for GB prefix.

Total Score

Total QSO points x multipliers.

Awards

Certificate for first, second and third place. Scorers in Europe, British Isles and non-Europe.

SWL Section

Scoring is the same as above. Overseas stations log only British Isle stations and their QSO number. Not more than 20 QSOs by the same station may be logged. Unmarked duplicate contacts will be penalised at ten times the claimed value, more than five unmarked duplicates will disqualify the log.

Log Entries are to be received by

April 3 for Phone, April 24 for CW.

Send to

RSGB HF Contest Committee,
PO Box 73, Lichfield,
Staffs, WS13 6UJ, England.

WE GOOFED

You probably noticed in last month's AR that logs for the John Moyle Contest were to be sent to a PO Box in Orange.

This is incorrect, all logs should be sent to FCM, PO Box 236, Jamison, ACT 2614.

Sorry Wally.

ALARA

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

The members of ALARA would like to thank all who participated in their contest on 14th November. It was voted most successful, very friendly and informal by those who have already sent logs in to me. Remember, to be eligible for the contest logs must reach me by 14th February. We had a few teething problems but these will be overcome before our next contest. Please note the date — Saturday, November 13th, 1982. Details later.

Quite a few participants have indicated they will be applying to Mavis VK3KS for ALARA Awards as a bonus from the contest.

New call signs: Congratulations to Margaret VK2AHD (ex VK2KES), Vicki VK2EVM (ex VK2PFR), Irma VK3BBJ (ex VK3VCF) and Pat VK3NEG (Pat is the seventh YL in the Echuca area to obtain a call sign).

Congratulations to everyone who has passed exams recently and good luck to all who are sitting for exams this month; we look forward to hearing you on air soon.

If you are interested in joining ALARA please send for our new "Information Sheet" to Valda VK3DVT, C/- Brighton PO, Church Street, Brighton 3186. This gives details of ALARA activities, aims, fees, etc. Our main aim is to encourage and help YL involvement in our chosen hobby. Until the advent of the Novice licence the YL numbers were very small, but now our numbers are increasing rapidly.

ALARA has over 100 members and not all licensed YLs are aware of or are members of ALARA; one of our members, Austine VK3YL, has been licensed over 50 years; Mavis VK3KS over 40; others of us only months but everyone is welcome.

I am hoping to meet some of you at the Midland Zone Convention near Bendigo on 21st February; please make yourself known to me.

ALARA's next meeting on air will be Monday, 15th February. Please join in.

Remember, your subscription is now due. If you want to receive your newsletter, send off the money now. With postal costs, etc., as they are, we can only send to financial members.

Please send me any news of new call signs, etc., for inclusion in this column, so we can share in your achievement.

73/33 to all, Margaret VK3DML. ■

LETTERS TO THE EDITOR

1-2-108 Hotakubo, Kumamoto City,
Kumamoto Prefecture, 862 Japan
8th November, 1981

Mr. Bruce Bathols VK3UV
Editor 'AR' Magazine, WIA
Dear Mr. Bruce Bathols,

The other day, I visited your country to participate in the 11th Pan Pacific Congress of Real Estate Appraisers, Valuers and Counsellors.

I'm very happy to have had a chance to visit the office of WIA and observe your meeting. Thank you for presenting me with a WIA badge, two Call Books and a recent issue of Amateur Radio.

I hope to meet again on the air. I operate every Monday at 12.00-13.00 GMT (21.00-22.00 JST) on 21.250 kHz \pm 5 kHz.

Thank you for doing me such a great favour.

Very sincerely yours,

Yoshito Panaka JA6VVS

34 Toolangi Road, Aiphington 3078

The Editor,
Dear Sir,

I read with interest the comments of John VK3ACA on the transformer used in antenna noise bridges and shown in the diagrams in the March issue of AR. As far as the comments and diagrams go I would agree that they are valid, but I would suggest that anyone who uses the normal type of transformer in such equipment is asking for trouble.

What is not made clear by anyone, including the writer of the original Ham Radio article, is the fact that transformers and transmission line transformers, sometimes loosely called baluns, have nothing in common except the name. This is not the place to go into a lengthy discussion on the differences but here are a few basic ones. The core has nothing to do with the high frequency response, what it does is to extend the LOW FREQUENCY response. The number of turns have nothing to do with the impedance any more than the impedance of coaxial cable is changed by winding it into a coil. In any normally wound transmission line transformer the "inter winding capacity" simply does not exist.

The article in March AR refers to a bandwidth of 10 to 1. Way back in 1959 transmission line transformers were being made which were flat within 3 dB from 100 kHz to 900 MHz. Not 10 to 1, but 9000 to 1! Finally, if you study circuits involving genuine transmission line transformers you will occasionally come across diagrams of a "transformer" with BOTH ends of "secondary" grounded. Whoever heard of using a transformer with the secondary shorted?

I should add that I have seen at least four other articles — in commercial and amateur magazines and books of world repute — which show the same confusion. It seems most unfortunate that the same symbol is used for two totally different things, but we seem to be stuck with it.

For those who wish to know what a transmission line transformer really is, I suggest reading the original paper by C. L. Ruthroff, Proc. IRE, August 1959. Also a very simplified article by myself in the American magazine "Popular Electronics", April 1979.

Roy Hartkopf VK3AOH

9 Dorothy Street, Croydon 3136

The Editor,
Dear Sir,

I have recently received my Worked All Korea Award, which I am quite happy about as it is my first QY award, but when I opened the envelope I find I have also got at no extra charge a chain letter.

Although I had never seen a chain letter I had heard about them and I thought they had died out years ago. This particular letter originated from the USA and as usual suggests that you send it on but only to amateurs.

I don't know if the originators feel that amateurs have lower intelligence or what, but looking at the previous address it has been halfway around the world. Well it has stopped with me and I enclose the letter for your enlightenment.

I would be interested to know if this is the first copy to grace our shores.

Hopefully this may be of some interest to you.

73. Anthony K. Clark VK3VKK.

(This is a recurring evil unfortunately—the waste-paper basket is the best receptacle for this kind of letter.—Ed.)

2 Brenda Street, Nunawading 3131

5/11/81

The Editor,
Dear Sir,

I write in protest regarding the developing habit of some operators in using garbled versions of the "Q" code on phone and, in particular, two metres FM.

The "Q" code is an internationally recognised code with standard meanings, designed to ensure efficient and accurate communications on CW, but is generally quite unnecessary when using phone.

All amateurs are required to pass an examination in regulations, and several questions on this paper are devoted to ascertaining whether the aspiring ham knows this code. I wonder if some operators would gain a pass in regulations if asked to recite the examination?

Below are listed several of the more commonly used expressions. The translations are mine — what are yours?

"I have to go now, so will go QRX" (I have to go now, so will go, I will call you later).

"I am at home home QTH" (I am at my home, my location is . . .).

"I will go QRT" (I will go, stop sending).

And the most intriguing one of them all — "I am in my mobile QTHR" (I am in my mobile, I am correct in the current call book).

The mind boggles!

I suppose that it can be summed up in the words of a great Australian patriot — "So it has come to this, such is life".

Well I must go QRX and QSY to my mobile QTHR and head for the work QTH or the boss will give me RT.

73. John O'Rourke VK3XS.

Box 105, Yarra Glen 3775

2nd December, 1981

The Editor,
Dear Sir,

This is a request for some space in your magazine, please, to publicise the action being taken to enlarge and improve the Royal Australian Corps of Signals Museum and Library, which are located at the Watsonia Barracks, Melbourne.

At present a Royal Australian Signals Museum and Historic Society is being organised and it will co-operate with the Army to achieve the stated aims.

On present indications the draft constitution for the Society and legal formalities should be completed early in 1982, when conditions for membership will be publicised.

Unfortunately there are many items of signal equipment used by the Army during World Wars 1 and 2, and for training purposes prior to 1947, which the Museum does not contain. Most signals equipment of that era appears to have been sold through disposals stores. Consequently private collectors or the amateur radio fraternity are probably the only persons from whom this equipment might now be obtained. So if any reader would be willing to lend, donate or consider making a bequest of any line, radio or visual signalling instruments or test equipment, the Interim Museum Committee would be very pleased to hear about it. Any offer should be addressed to R.A. Sigs. Museum, C/- School of Signals, Watsonia Barracks, Macleod, Vic. 3085, or the Museum Supervising Officer phoned on (03) 450 7460 please.

The Library's collection of Signal Training Manuals, the first of which were published about 1905, is also incomplete and any such books or

pamphlets which could be loaned or donated would be greatly appreciated.

The Library does have a fairly comprehensive collection of circuit diagrams for military radio equipment and a photocopy of a circuit can be produced for a small fee. Requests should be directed to the address shown above.

The range of signalling equipment manufactured and used "on active service" prior to 1945 is quite amazing. Perhaps the most humble item is the earth pin. It suffered many indignities during efforts to dampen its surroundings. Among items at the other end of the scale is the "Portable Transmitting and Receiving Equipment, Type 3, Mk. II", manufactured during WW2 mainly for use in occupied Europe by resistance groups and the James Bonds of that era. It is a fine example of the "state of the art" of valve radio equipment at that time. It could function on any AC from 90 to 250 volts (40 to 60 Hz) or a 6 volt battery. The options for charging that battery included generators powered by petrol, wind, hand, pedal and steam. There was also a thermocouple charger consisting of 350 junctions of constantan and chromel built into a fire clay brazier which, when heated in a good fire, would charge the battery at about 1 amp. Although the Type 3 and some of the charging options were used by Australian troops, and after the war this small rig gave sterling service in many ham shacks, none of these items is currently in the Museum.

Of course, many of the exhibits are of much more modern origin, and in the future as signalling equipment becomes redundant, suitable examples will be added to the Museum's collection.

Finally, the Museum is open to visitors on request. Special arrangements can be made for visits by clubs.

Yours faithfully,

Jim Payne VK3AZT.

294 Middleton Road, Albany, WA 6330

November 17th, 1981

The Editor,
Dear Sir,

"JOURNALIZE"

I ask the Wireless Institute of Australia and its volunteer code practice operators to cease the use of the word "journalize" to indicate guessing or anticipating.

First, it's wrong in grammar — no dictionary I have found gives any other definition of the word than "to enter as in a journal (diary)" or "to make an entry in book-keeping".

Second, it seems (on inquiry) to reflect on the integrity of professional journalists, the implication being, it appears, that journalists "make it up as they go along".

I know of loco drivers and truck drivers who go on shift with more than a fair share of alcohol in their blood and get away with it. I know of other tradesmen who do the wrong thing occasionally; but I do not label all loco drivers, or truckies, or carpenters, or any other body of workers as irresponsible or drunks or liars.

One operator I tackled on this said he remembered the use of the word when he was learning code in the RAAF during the war; this may or may not be the origin of the usage but what matters to me is that it is uncalled for, unjust and a stain on the good work of the Institute and all those willing volunteers who spend their spare time teaching beginners the code. Please, gentlemen, say "guessing" or "anticipating" — perfectly good English words which say exactly what you mean and don't malign someone else's profession.

Yours faithfully,

Harry Atkinson VK6WZ.

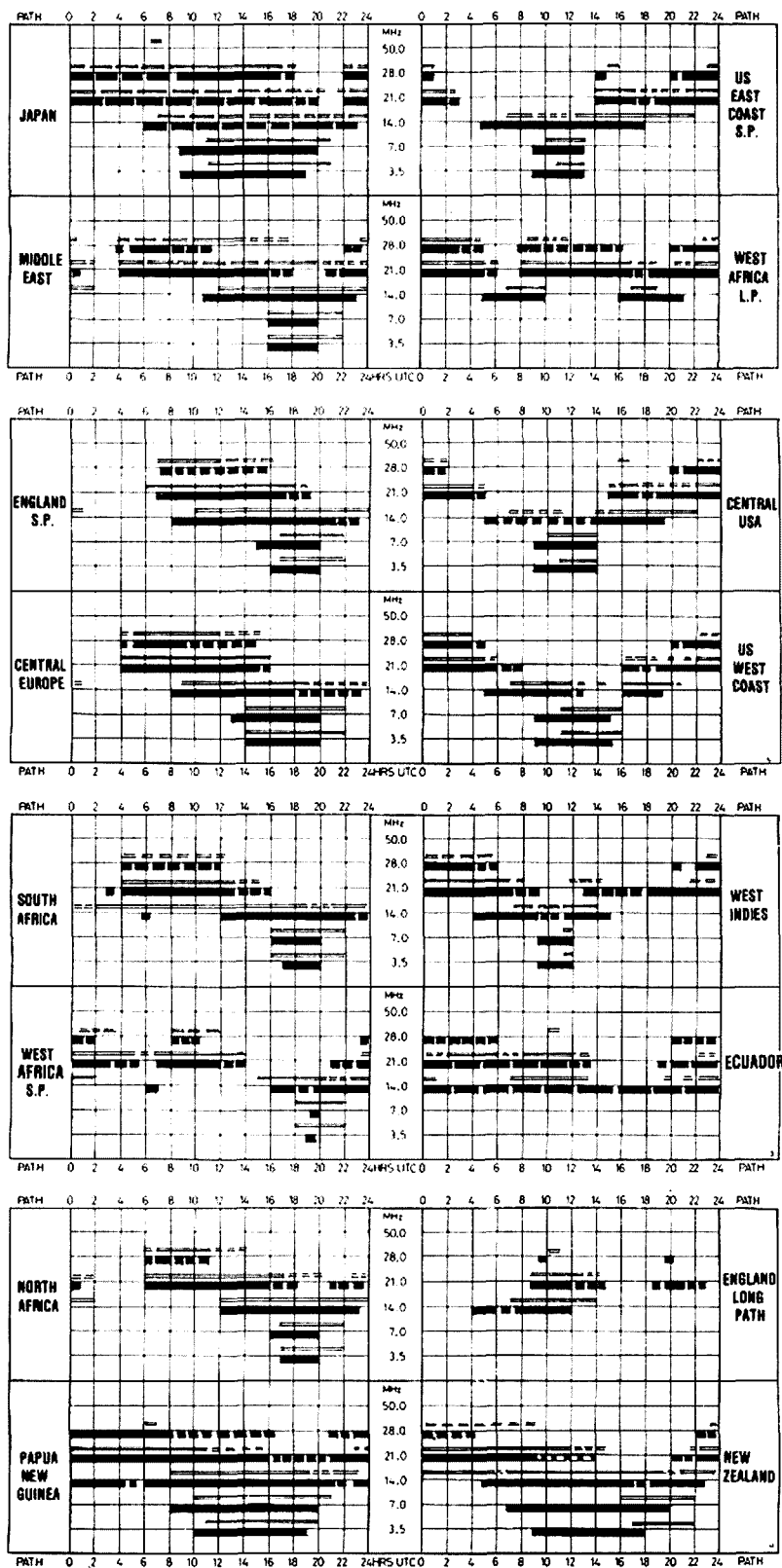
(Retired member of the Australian Journalists' Association and a ham since 1937.)

QSP

LICENCE DELAYS

According to an FCC report the average routine processing time for an amateur radio licence in July 1981 was 51 days.—QST October 1981.

Len Poynter VK3BYE



LEGEND
 [Solid bar] FROM WESTERN AUSTRALIA.
 [Dotted bar] FROM EASTERN AUSTRALIA.
 [Horizontal lines] BETTER THAN 50% OF THE MONTH, BUT NOT EVERYDAY.
 [Vertical lines] LESS THAN 50% OF THE MONTH.

Predictions courtesy Department of Science and Environment IPS Sydney.
 All times universal UTC (GMT).

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OBITUARIES

MIKE CLAUGHTON VK2DKX
Michael (Mike) Cloughton VK2DKX, a well respected member of the Coffs Harbour and District ARC, passed on at the early age of 48 years on 13th June, 1981.

Mike was schooled at Newington College, matriculated and entered the RAAF at the age of 18. He served at Richmond (NSW) and Ballarat (Vic.), where he trained as a Signaller, then to Malaya (1957-58) and to Townsville as an Air Electronics Officer. In 1968, as Squadron Leader, Mike was in command of the Victorian Air Cadet Squadron and finally, before retiring in 1979, he was OIC Cadets at the Engineering Cadet Squadron, Camberwell (Vic.).

With this background Mike had little trouble in pursuing amateur radio as a hobby and obtained his Novice licence and his AOCIP early in 1980. He was an experimenter in the true sense of the word and his call sign was a familiar one on the bands until just a few days before his untimely passing.

Mike will be sadly missed by his family, his friends, members of CHADARC, the local community and a wide circle of amateurs.

Inserted by Rick Fletcher VK2BKV on behalf of the CHADARC. ■

TED CHARLES VK5YQ
Ted passed away peacefully at his home on Monday, 2nd November.

Ted held his amateur licence since 1935 and was able to remain on the air during WW II as he served as a Signals Officer in Australia, the Middle East, New Guinea, India and, after the war, in Malaya, where he operated as VS2BF during 1946. Returning to Australia he worked with the ABC as a radio technician before becoming involved with Anglo-Australian weapons projects at Salisbury and Woomera.

In 1952 he put his home brew equipment to one side to concentrate on family and home building. It was his children's interest in CB (??) that decided him to become active again in 1977, and his enthusiasm was so infectious that XYL Joy (VK5YJ), son Kim (VK5KIM), daughter Joyanne (VK5KJH) and her husband Graeme (VK5ZGE) all gained their call signs since.

Ever cheerful, Ted will be sadly missed by all who knew him on and off the air. To Joy, his son and four daughters, deepest sympathy from all ham friends.

Rufus Salaman VK5YO. ■

RUSSELL BRADSHAW VK3SX
Russell Bradshaw VK3SX passed away at St. Andrew's Hospital, East Melbourne, on Thursday, 10th December, 1981, following two years of declining health. He was 79 years old and would have celebrated his 80th birthday on December 26th.

Born in Kew (Melbourne) in 1902, Russell was destined to enter the family business of soft furnishing wholesalers (Bradshaw & Allan) at the age of 16 years and remain with the Company all his life until his retirement in the early 1970s when the business was closed down. His primary education was at a school in Kew and his secondary education at Scotch College. Russell took a great interest in everything he undertook and applied himself with great zeal and tenacity of purpose. It was not unexpected, therefore, when he commenced learning about amateur radio at the age of 52 that he was successful in obtaining his AOCIP.

During the following years of ardent activity on the amateur bands Russell earned the WBE (Worked British Empire Award), the WAC (Worked All Continents Award by the IARU), the WAC/YL (Worked All Continents

SILENT KEYS

It is with deep regret that we record the passing of—

Mr. B. T. KELLY	VK4VI
Mr. E. ROBSON	5Z4ERR
Mr. A. W. TAYLOR	VK5AT
Mr. W. A. JONES	VK5ZWJ
Mr. M. CHAFER	VK3MH
Mr. E. A. CHARLES	VK5YQ
Mr. J. A. SCRIVEN	L50711
Mr. M. VAN OYK	VK4NQW
Mr. R. TURNER	VK5ART
Mr. L. R. B. BRADSHAW	VK3SX
Mr. K. SMITH	VK6KV
Mr. S. K. HOWARD	VK4BB
Mr. M. B. HARRIS	VK8H
Mr. R. P. MONK	L20082
Mr. R. C. PAGE	VK2KCF
Mr. M. D. S. CLAUGHTON	VK2DKX
Mr. J. A. BATES	VK2DZB
Mr. H. D. WARD	VK3HD

Award from the Young Ladies' Radio League), the WAZ (Worked 40 Zones on the official CO Magazine DX Zone Map), the WAS (Worked All States of the USA Award), and the Cook Bicentenary Award issued by the WIA for working 100 Australian amateur stations during 1970. No mean effort for a man who started so late in the field of amateur radio. In addition to these he also earned an ARRL "Certificate of Performance" in the Phone Section of the 27th ARRL DX Competition (1961), and the Australian DX Century Club Award for working amateur stations in 100 countries.

He was a member of the Victorian Division of the Wireless Institute of Australia and served on the Council of the Division from December 1951 to May 1953 and for a short term in the latter year as Federal Councillor. He served on the Disposals Committee of the WIA from April 1955 to late in 1957, during which time he made a substantial area of his business warehouse available to the Institute at no cost for the storage of the many tonnes of disposals equipment then being handled by the Division.

He achieved 25 years of being licensed in the amateur service and became eligible for membership in the Radio Amateurs Old Timers' Club (RAOTC), of which he was member No. 185.

A gentle man by nature "Russ", as he was affectionately known as by most of his friends, will be sadly missed on the airwaves. Sympathy is extended to his wife, Olga, and daughters Jane and Judith.

G. Maxwell Hull VK3ZS. ■

MART CHAFFER VK3MH
A FINAL FINAL WITH OUR OLE PAL
"THREE MOTHER HUBBARD"

Mart Chaffer VK3MH had been a very sick man since someone in a motel let down his tyres supposedly because Mart could have been causing TVI.

He was on his way to his beloved Palm Beach in VK4 to escape the winter cold of Doncaster. This was a few years ago. He suffered a stroke almost immediately after this incident.

The following year he no longer felt up to driving all the way up any more, so he and Ev put their brand new car on the train.

A water tower collapsed and fell on the train wiping off Marty's car along with four others! The railways admitted no liability. Fortunately the rig which was in the car escaped harm.

Marty's stroke did neither dim that fine business CW fist nor that rich deep voice which always came through loud and clear.

He was, however, no longer able to write, so committed all QSOs to memory and

OBITUARIES

rarely overlooked a comment even when working in a net. Whenever that did happen, he would make it good next time around.

Mart was an instructor at the Marconi School of Wireless back in those days when ships were still using spark transmitters. This wasn't really all that long after Marconi invented wireless.

Mart was born in 1905 and had been on air since 1921. He was a radio engineer with commercial stations in VK3 and VK6. In fact he built them.

In 1924 he operated experimental station 3XF. (There was then no VK prefix.)

Marty was awarded a prize that year at an exhibition in the Melbourne Town Hall for his work on the 200 metre band. (Broadcast radio) In those days the Amateur Radio Service, which was the forerunner of commercial radio — let it never be forgotten — transmitted on the broadcast band late at night and on Sunday mornings when the commercial stations were closed down. So Marty was a broadcast announcer after all.

He was then in his teens and using aerials with plenty of wire. The term "antennas" had not been invented in those days. Mart believed that the more wire you got up in the air, the better. Marconi would have agreed! It still holds today if you can do it.

No station in the Amateur Service has ever offered more to those coming up.

Marty was a member of the Light Car Club in earlier years and knew as much about cars as about wireless. He was no mean tennis player either in his youth. His first love, of course, was his family. His lovely wife Ev and kids Marcia and Ken will carry on his famous image and Ken will perpetuate that well known call sign VK3MH — Mother Hubbard.

Marty was 76 when his key became silent (November 6th, 1981). Let's say "73 OM, 78 and 88 too" and hope those "Views" you always spoke of here are just as good up There!

CUL Mate!

VK3MH de VK3CD, 3FC, 3AM, 3QM, 3TC, 3VLA, 3UE, net, 5DW, 5DS, 5RH, 5AI, 2BC, 2MH, 2BEN, 2NZ, 3YD, 6ZO, L3-0042 (Eric.) 3BYK (Barbara), W8EGB. ■

HAMADS

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Yaesu FT227B 2m Txcvr., In as new cond., warranty and service manuals, also linear amp. 50Q, units are currently in use and may be subjected to test. B. Wilton VK3NXX, OTHR. Ph. (03) 527 4029.

Icom 720A Full Range Txcvr., with AM and CW filters, Icom PS20, 240V/12V, 20 amp. power supply, Fritzel type GPA 30 vertical antenna for 10, 15 and 20m bands, a! brand new, unused in original cartons, new price \$1700, sell \$1250. Steve Shanasy. Ph. (03) 699 5483 or (03) 25 6758.

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Mosley TA-33 Triband 3E trapped, 12 ft. boom, \$100; medium duty rotator, little use, \$80. M. A. Marlin VK3VSM, 19a Mason Street, Regent 3073. Ph. 478 1256 8 a.m.-7 p.m., ask for Max.

Sony ICF 2001 Communicator Rx, 150 kHz/30 MHz, 76-108 MHz, SSB AM, FM, memory, auto scan, digital display, keyboard entry, unwanted gift to amateur, box and manual, all brand new, \$250. David VK2PKW, Box 38, Glenfield 2167, N.S.W. Ph. (02) 607 5813 after 4 p.m.

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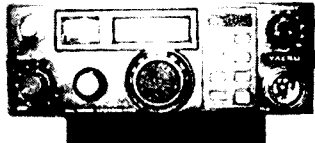


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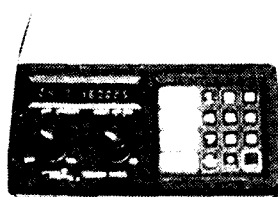
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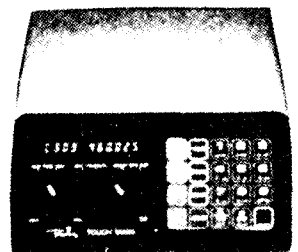
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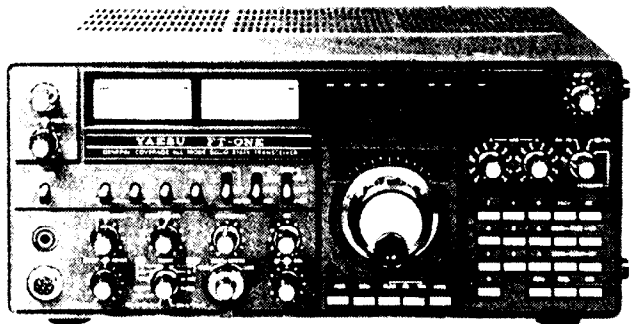
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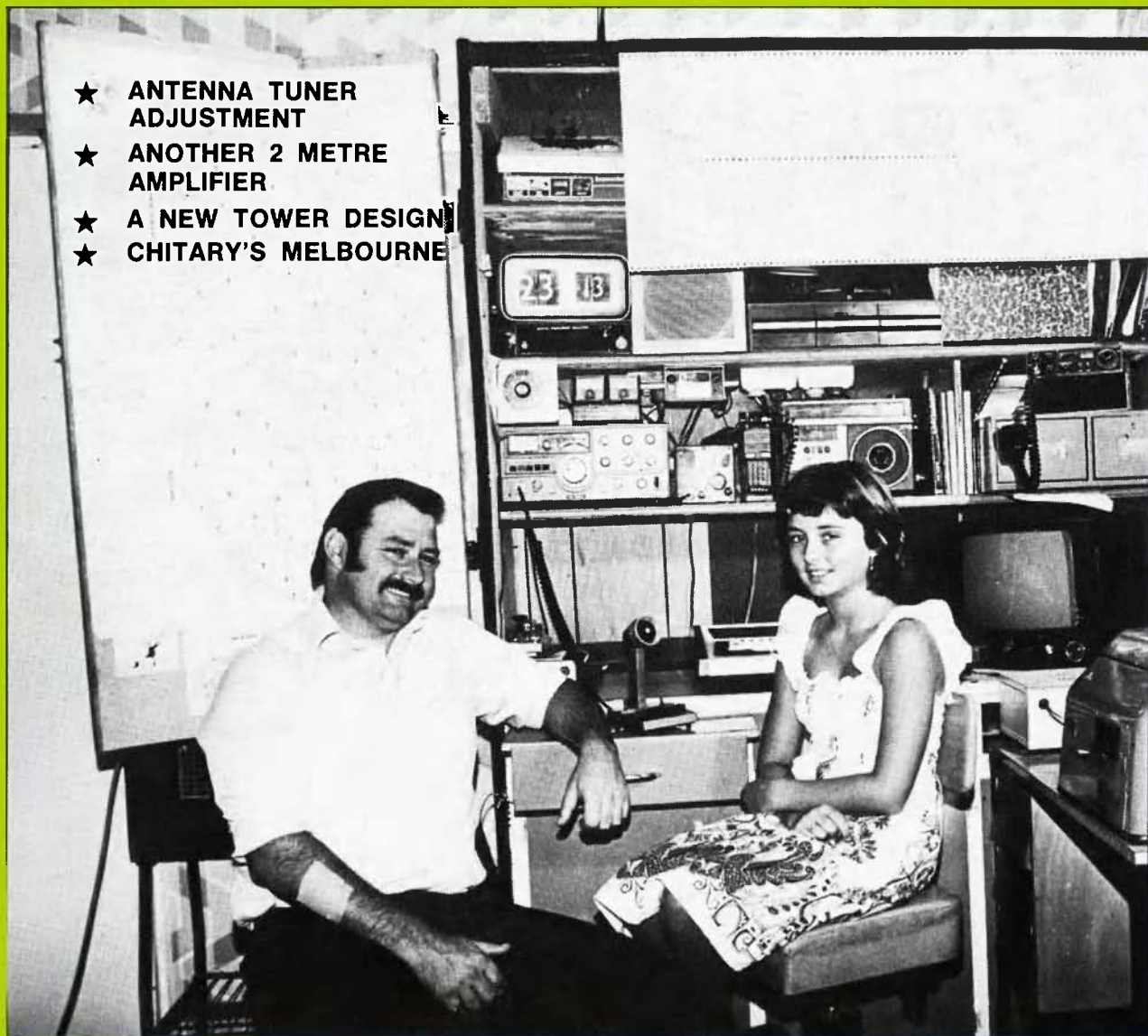
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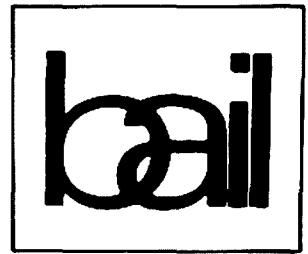
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Cover Photo



Reg VK1BR and Charlene VK1NEJ
(See story "Forward Bias", page 35)
Photo: J. JORDAN, Canberra.

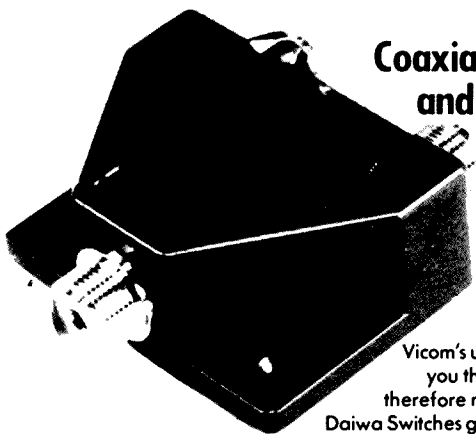
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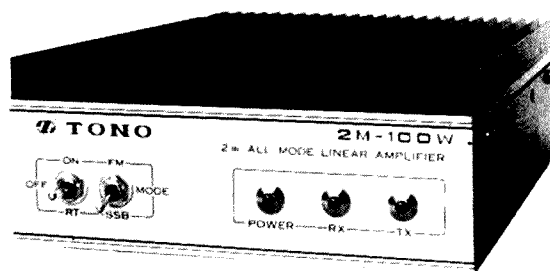


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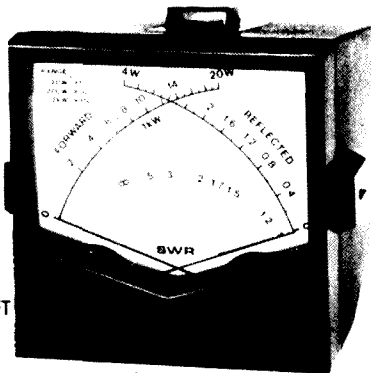
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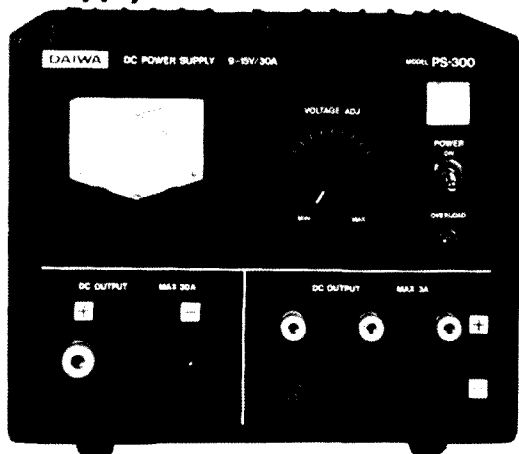


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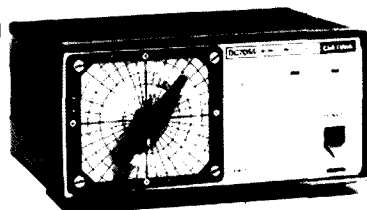
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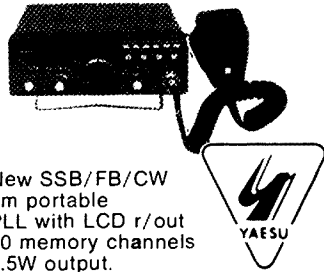
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WIA NEWS

AWARDS

The Federal Awards Manager's work will have changed hands by the time you read this. Bill Verrall VK5WV, took over these duties from Brian Austin VK5CA, three years ago and believes it is time for somebody else to carry on. Fortunately a volunteer came forward in the person of Mike Bazeley VK6HD. Many will remember the excellent DX column in AR by Mike around two years ago. All good wishes, Mike.

BADGES

The WIA NSW Division has arranged the production of "car badges". A sample has been seen and the quality is excellent—probably so good that many members might wish to have one for display in the shack. The design is the traditional map of Australia and 'wings'. Write to the VK2 Division for details.

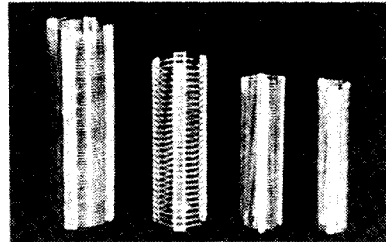
WIA BOOK

Work on the WIA Book is running behind schedule due to pressures of work at this time of the year. The contents are ready in draft and should go to the typesetters very soon.

QSL CARDS

Whilst discovering problems of the costs incurred by the Federal QSL Manager concerning the disposal of inwards QSL cards to non-WIA members, the Executive resolved to follow the IARU Miscellaneous Rule on the subject which reads: "Member societies shall agree to accept QSL cards addressed to non-members of the national society, provided that such non-members collect or pay for the reforwarding of the cards to them".

AIR-WOUND INDUCTANCES



No.	Diam.	Turns per Inch	Length	B. & W. Equiv.	Price
1-08	1/2"	8	3"	No. 3002	\$1.50
1-16	1/2"	16	3"	No. 3003	\$1.50
2-08	5/8"	8	3"	No. 3006	\$1.90
2-16	5/8"	16	3"	No. 3007	\$1.90
3-08	3/4"	8	3"	No. 3010	\$2.15
3-16	3/4"	16	3"	No. 3011	\$2.15
4-08	1"	8	3"	No. 3014	\$2.40
4-16	1"	16	3"	No. 3015	\$2.40
5-08	1 1/4"	8	4"	No. 3018	\$2.65
5-16	1 1/4"	16	4"	No. 3019	\$2.65
8-10	2"	10	4"	No. 3907	\$3.85

Special Antenna All-Band Tuner Inductance

(equivalent to B. & W. No. 3907-7")

7" length, 2" diameter, 10 turns per inch, \$6.65

References: ARRL Handbook, 1961; "QST", March 1959; "Amateur Radio", December 1959.

Take the hard work out of Coil Winding — use "WILLIS" AIR-WOUND INDUCTANCES

WILLIAM WILLIS & Co. Pty. Ltd.

98 Canterbury Road, Canterbury, Vic. 3126
PHONE: 836 0707

Federal Income and Expenditure Budget

Income Expenditure

Finance — most of us shudder at the word. You and I don't get enough. Everybody else gets too much.

Each annual convention the Federal Finance Committee presents in the form of a budget the estimates of income and expenditure of the Executive office for the following year.

The budget is revised in August and the figures provide the basis of setting Federal dues receivable from Divisions for the next year and in turn enables Divisions to decide on their subscription rates for their members.

It is readily appreciated that the major expenditure of the Executive office is the publication of "Amateur Radio".

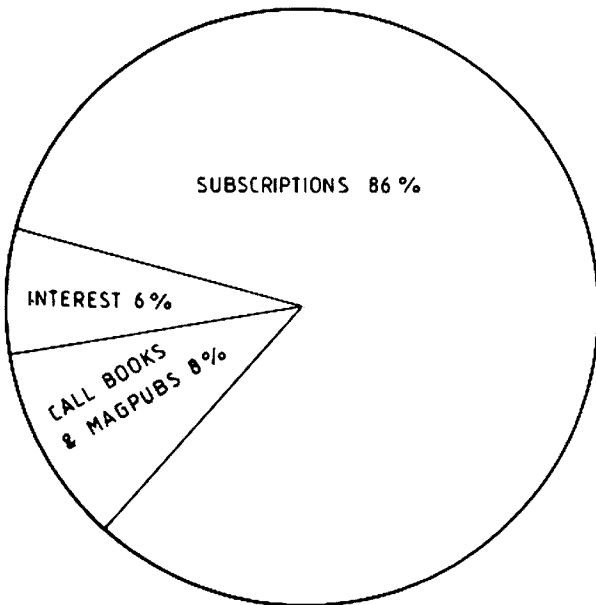
But this is not the only factor.

Our members know that without a central office, professionally administered, to co-ordinate and deal with Federal matters and major issues with one voice then our hobby facilities would soon degenerate in this day and age.

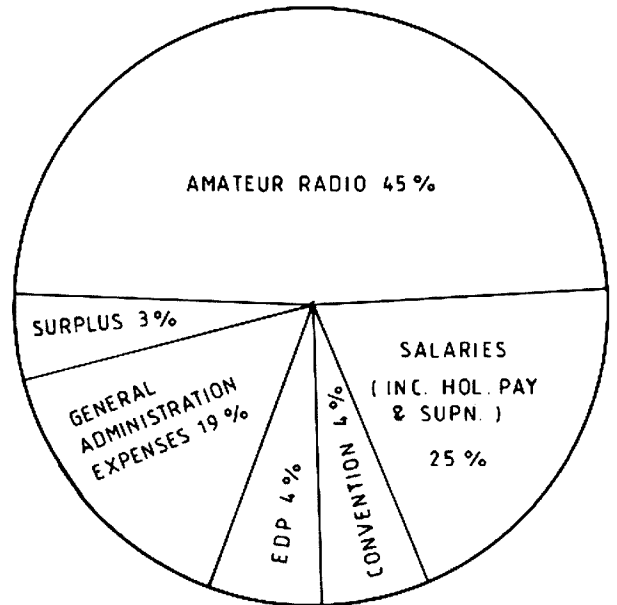
We wish that more non-member amateurs would share the cost with us.

Courtney Scott VK3BNF,
Federal Treasurer. ■

INCOME



EXPENDITURE



FEDERAL INCOME AND EXPENDITURE BUDGET
FOR 1982

Another 2 Metre Amplifier

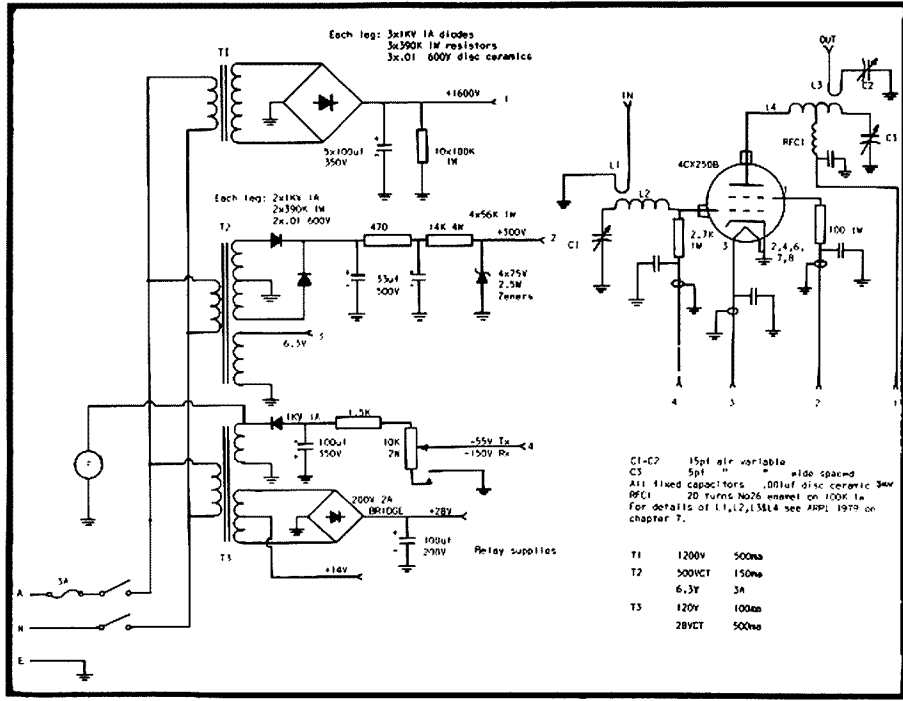
Rod Pym VK2DNP

21 Gilmore Avenue, Wagga Wagga 2650

Having been bitten by the 2 metre SSB bug, thoughts were directed towards constructing an amplifier capable of providing worthwhile gain over the trusty 6/40 amp. The 4CX250B tetrode seemed the obvious way to go, especially as I had managed to acquire one, along with an Eimac SK600 socket, both in mint condition. The resulting amplifier works very well and this article is presented as an example of one way to go for those contemplating something along similar lines.

There are many circuits about using the 4CX250B and its relatives on 2 metres and no originality is claimed for this one, the bulk of it being from the ARRL Handbook 1979 on, chapter 7, albeit modified to suit the contents of the junk box. This circuit was chosen for its seeming ease of construction of both the grid and tank circuits. These are about as simple as you can get and if, like me, you don't have access to someone who has already built an amplifier using this tube with a more exotic tank circuit, ease of debugging the finished product becomes important. In any event, the amp worked from initial switch-on and, with minor adjustment of the output coupling link, produces 200+ watts output when driven by an IC202. It is completely stable, very cool running, tunes very easily and exhibits no nasty traits whatsoever.

The early type SK600 socket used here required some work to make it suitable. It has the built-in low-inductance screen bypass capacitor but lacks niceties such as a screen shielding ring and the cathode, tabs 2, 5, 6 and 8, has to be comprehensively earthed. This was accomplished by passing a small brass bolt through the hole in each tab and a corresponding hole drilled in the socket skirt. The area around the holes drilled in the skirt, the tabs, and the underside of the head and nut of each brass bolt were tinned prior to assembly. After tightening each nut and bolt they were then sweated to the tabs and skirt. Tab 7, one side of the heater, was also treated this way. The screen shielding ring was made from a strip of flashing copper formed into a ring slightly smaller than the outside diameter of the socket and about 17 mm high. Soldered to it are three tabs that locate under the socket hold-down clamps. A chimney, essential for proper cooling, was not available so one had to be improvised. The top of a tomato juice bottle looked like the real thing so with the glass cutting skills of Alan VK2KAW, a



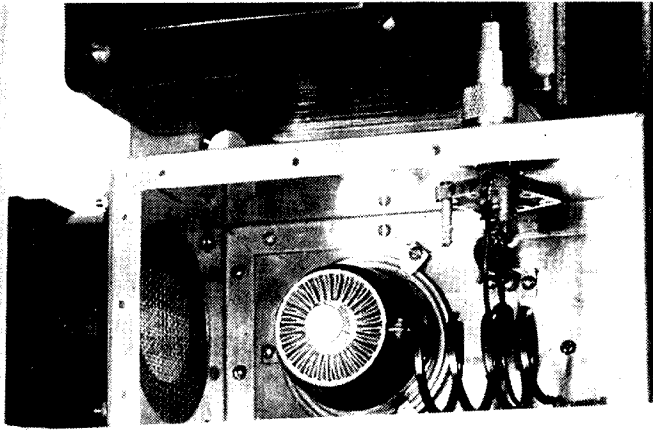
Circuit and Power Supply

suitable chimney was soon fashioned. A small (3 in. diameter blades) computer cooling fan drawing air from the underside of the socket through the chimney and the anode fins has proved quite adequate for the low duty cycle of SS Band CW. As the amplifier is not contemplated for use on FM this system of cooling has worked out very well with none of the noise associated with a blower.

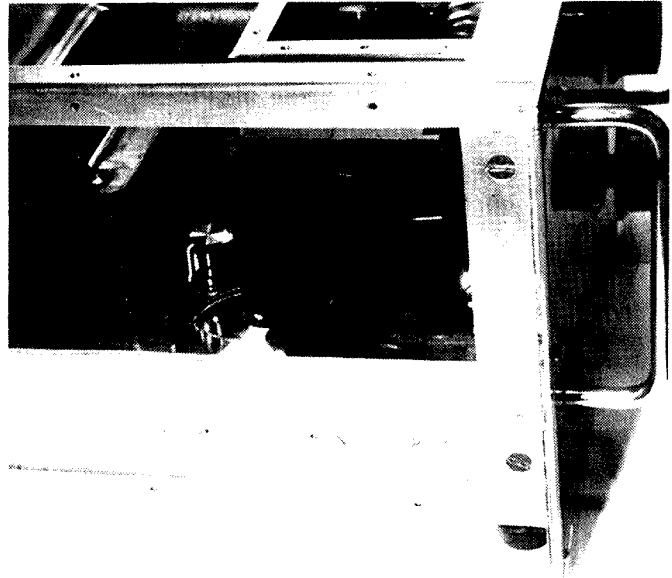
The power supply components were all assembled on printed circuit boards drawn up with a resist pen. No details of the layout are given as this will depend very much on what you have at hand and space available. Where possible, shielded wiring is used for connections throughout. The bias supply pot has one end earthed via a relay on transmit and should be set to give approximately -50V at the tube grid. On receive the full bias of -150V is applied to the tube, completely shutting it off. There is no detectable tube noise in the receive mode. The 4 x 75V zeners hold the screen at a constant 300V and the 14K series resistor ensures that the diodes are operating well within their ratings when no screen current is being drawn. The relay supply was devised to suit the relays on hand.

Each section of the power supply was checked for correct operation before final connections were made. With the output of the amplifier connected to a dummy load and a SWR meter in the input line, drive was applied and the input circuit adjusted for minimum VSWR by adjusting the series capacitor C1 and the spacing of the grid lines. Then the amplifier was switched on and carefully watched for any signs of stress. There being nothing untoward after about five minutes of warm-up, drive was applied for about five seconds at a time and the plate and loading controls adjusted for maximum power out. The screen current was monitored continuously so as not to exceed its ratings. This amplifier runs about 5 to 7 mA negative screen current and although this was a bit off-putting at first, is apparently not uncommon with these tubes in linear service.

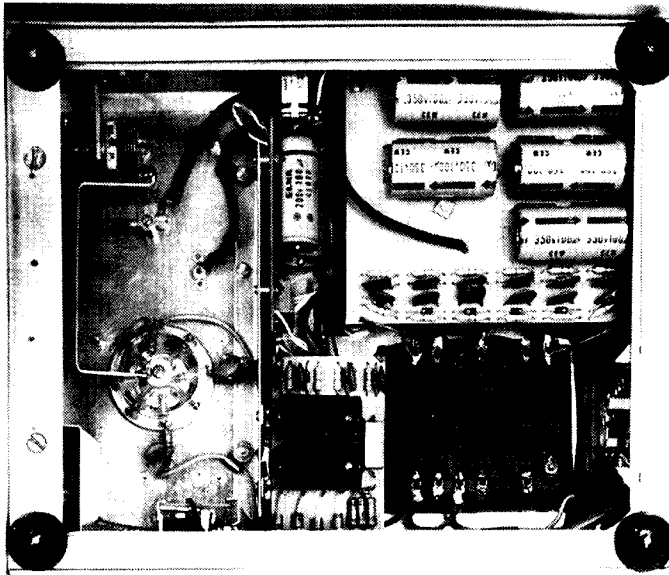
The output from the amp is fed via 17 metres of UR67 coax to 4 x 9 element yagis on 4.5 metre booms in a 4 metre square box configuration. Performance thus far would seem to indicate that the hoped for gain over the 6/40 amp has been quite handily achieved. Now if someone has a circuit for a good receive preamp. . . ■



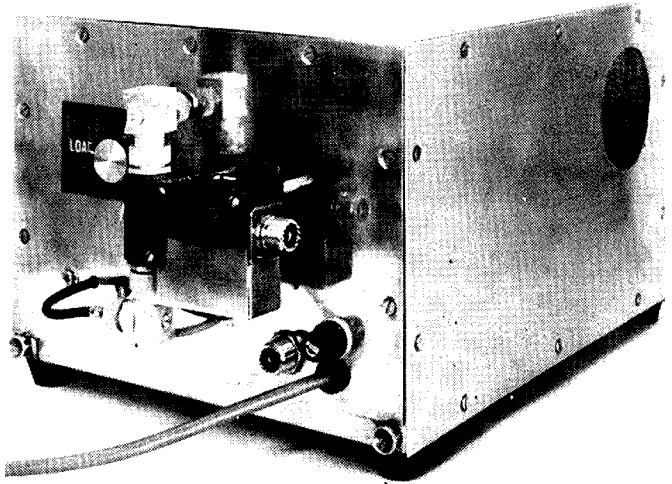
RF Compartment. Note: Screening on fan.



Cooling Fan Outlet. Note: Knob to left of fan for bias pot.



Underneath view of Chassis.



Rear view showing C/O relay and load control.



(Propagator, Nov. 1981)

A New Tower Design

J. Vogel L60052

Living in a suburban area presents some problems for amateurs and SWLs wishing to install an effective antenna system. This article describes the problems encountered with a tower and the final solution devised.

THE PROBLEM

After purchasing a 90 ft. commercial tower the problem of erecting it was tackled. It was realised that a 45 ft. tower would be possible and as the commercial tower was made from 15 ft. sections bolted together this seemed a good compromise.

To erect the tower two "spare" 15 ft. sections were bolted together and spaced 6 ft. behind the site of the tower. Two pulley blocks, 150 ft. of rope and a little assistance enabled the tower to be put into place.

A TH3Jr and a rotator were mounted on the tower. All was well until the time came to do further work on the aerial system. Although the tower would lie flat on the roof with the beam pointing north, the author had to call on his son and four other strong men plus a vehicle with a tow bar to lower the tower. And every time this was done a few tiles on the roof were damaged. Of course this damage was not discovered until it rained. Clearly something had to be done — my wife was getting fed up with using pots and pans to catch the water.

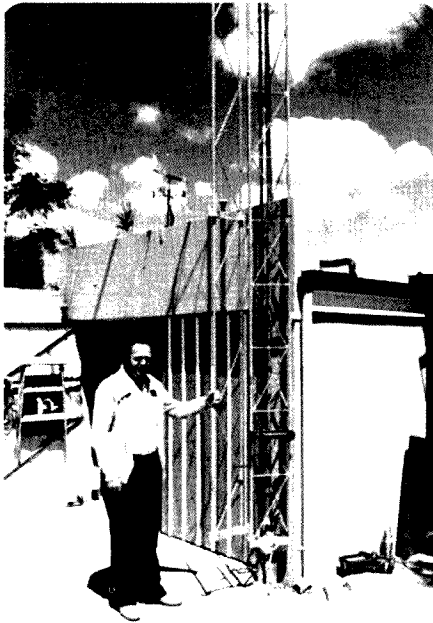
Another problem was that I had bought a 90 ft. tower and could only use half of it. The other half could not be sold as it was needed to raise and lower the tower.

So I had to consider a new telescopic tower or devise a modification to the tower that would allow additions and adjustments to the antenna system at or near ground level. The solution was to combine the best features of the commercial guyed tower and the telescopic types.

THE SOLUTION

A new base section of the tower was built. It was large enough for the 9 in. by 15 ft. sections to fit inside and one side was built like a door. The base was fitted with a ½ in. pipe to fit the original tower stand, which allows the tower to hinge on a ¾ in. x 6 in. bolt. The stand is bolted to the concrete driveway and brackets for the new base section were fixed to the garage wall.

With the new "door base" section secured it is a simple matter to raise or lower the tower. The top 15 ft. section is put inside the base and the door closed. The top section is then hauled up by means of a winch so that it projects out of the bottom section a short distance. A 12 in. x 15 in. platform is fitted near the top of the new bottom section to allow fitting of the rotator, antenna and top guys. Then the top section is winched up until the next section can be fitted beneath it. The door is opened and this next section bolted to



John Vogel and tower. The door is open and the winch and steps are clearly visible. The platform and open door are clearly shown. Note the vertical on an extension arm.

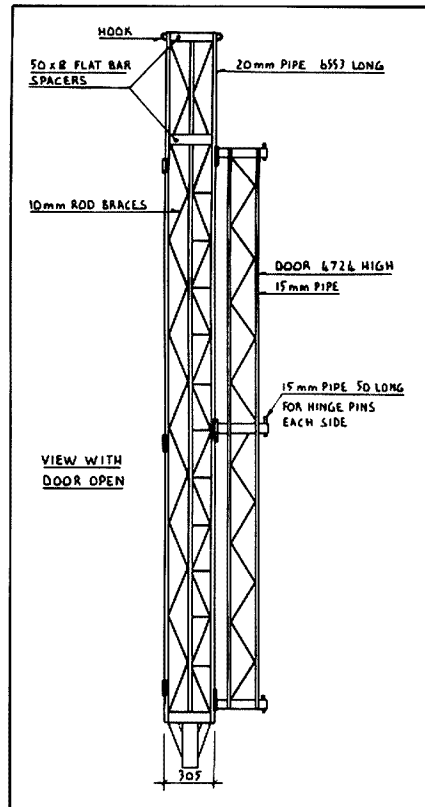


FIG. 1

the top. After the door is closed the second section can be raised and the bolts properly tightened before raising further. Additional sections are added in a similar manner and the process is reversed when lowering the tower.

CONSTRUCTION DETAILS

Figs. 1 and 2 show the general details of the new bottom section. Table 1 lists the parts required.

Put two full lengths (21 ft. 6 in.) of black ungalvanised) ¾ in. pipe on the floor and use a plank of 3/8 in. timber to space the pipes 10 in. apart. Using 12 gauge general purpose welding rods at 90A or 10 gauge general purpose rods at 100 to 120A tack weld a 2 in. x 5/16 in. x 10 in. long flat bar between the pipes at each end. Fit the 19 in. x 3/8 in. bracing rods, using tack welds, starting in the left-hand corner, in a zig-zag fashion up to the 16 ft. mark. Weld in another 2 in. x 5/16 in. x 10 in. flat bar. Continue to use tack welds. Add the bracing rods all the way to the top.

When this is done weld another 2 in. x 5/16 in. x 10 in. flat bar on top of the pipe at a 60 degree angle to the first. Add a second bar to the other pipe (see Fig. 3). Add two bars at the 16 ft. mark and at the bottom and lay the third ¾ in. pipe on top. Tack the pipe in position, gently turn over, replace the 3/8 in. board and weld the pipe in place, welding on the inside only. Add 3/8 in. bracing to one side as before.

Turn the tower over so that the open face is down and slide in the 3/8 in. timber plank. Slide in the tow 16 ft. long ½ in. pipes. Weld the tow ½ in. pipes to another 10 in. flat plate at the bottom, middle and the top. This forms the door, to which must be added hinges, etc. (see Fig. 4). Weld in the 3/8 in. braces as before. The hinges for the door are made from 2 in. lengths of ½ in. water pipe; a ½ in. or 5/8 in. bolt passes through two of these short lengths of pipe, one of which is welded to a ¾ in. pipe on the base and one to the door via a small bracket. Weld two hinges at the top, centre and bottom of the door. By removing three bolts from one side the door can be made to open and swing out. Keep the 6 in. hinge pipe clear of the door frame so that it opens freely.

Now fix a plate to take the winch. Fit two 2 in. x 5/18 in. x 6 in. long bars at the top to take a pulley sheave as in Fig. 5. Weld extra 10 in. x 3/8 in. bars on to the door to act as steps (see Fig. 6).

Weld in three 5/8 in. x 2 in. x 5/16 in. flat bars and the 12 in. length of 1 ½ in. pipe as in Fig. 7. To allow the base section to hinge over (a handy feature for tuning aerials as well as assisting erection) a ¾ in. hole is drilled 2 in. from the bottom of the 1 ½ in. pipe. Keep in mind the direction the tower is to hinge over. The stand which I had purchased with the tower is

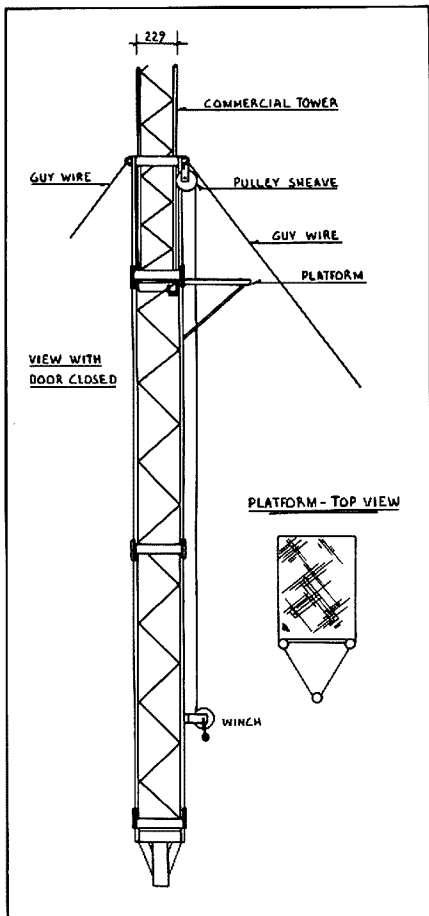


FIG. 2

shown in Fig. 8; it is made from 4 in. x 1 1/4 in. channel.

Carefully lift the tower on to trestles and weld it securely. As long as the door is bolted in place no problems will be experienced with buckling. Clean all the welds.

At this stage the 12 in. x 18 in. x 1 in. braced platform can be added.

The new base section is now complete and should be given several protective coatings of paint before erection.

Alternatively galvanised material could be used or the assembly could be commercially galvanised. Galvanised material can be welded with zinc enriched rods.

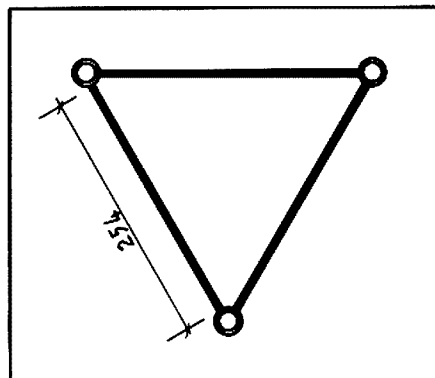


FIG. 3

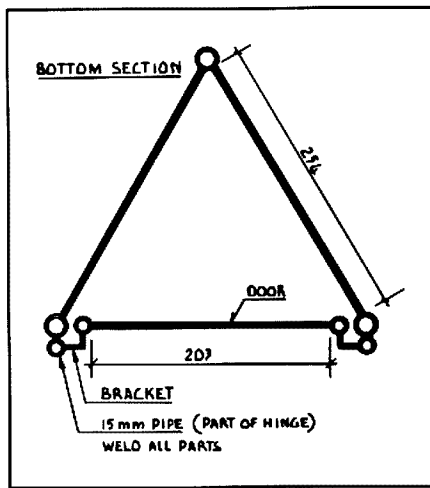


FIG. 4

If a mixture of galvanised pipe and 3/8 in. black rod is used hold the welding rod two-thirds on the galvanised pipe and one-third on the 3/8 in. rod. A note of caution: The fumes generated by welding galvanised material are poisonous. Do your welding in a well ventilated area (wear a suitable mask as well.—Tech. Ed.) and drink plenty of milk (not beer).

Don't forget to wear the proper protective gloves and screen. (Apart from burns caused by hot metal or hot sparks a form of sunburn is caused by exposure to UV light from electric arc welders. So don't wear shorts and a singlet — cover up.—Tech. Ed.)

If you are unfortunate enough to get "welding flash" (caused by exposing the eyes to the naked arc) and if the shops are shut, the author suggests the following "cure". Obtain two used tea bags. Make sure they are wet and place one over each eye. Squeeze some of the cold tea out of the bags and let it under the eyelids by opening the eyes slightly and then closing them. This will provide some relief.

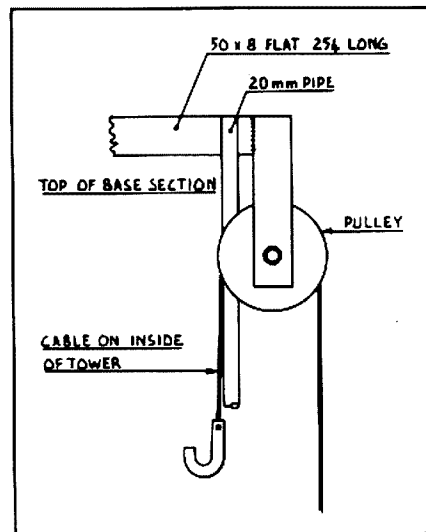


FIG. 5

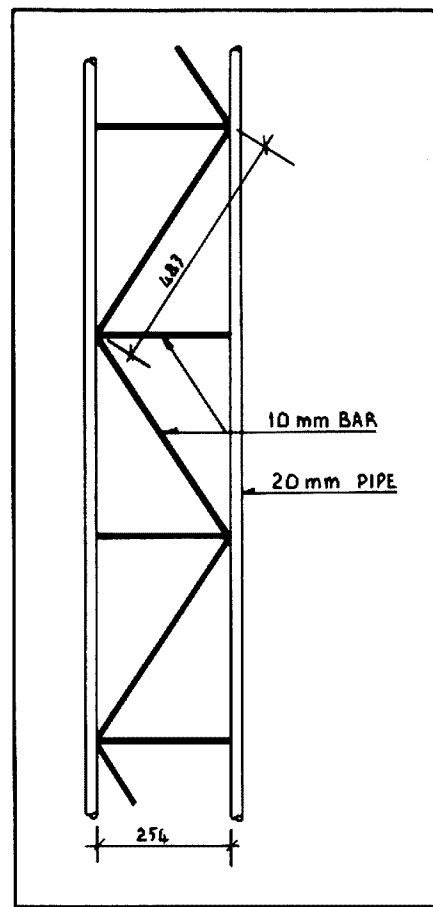


FIG. 6

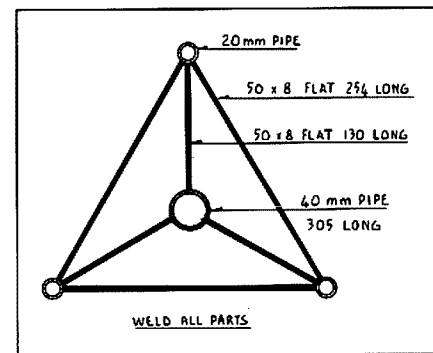


FIG. 7

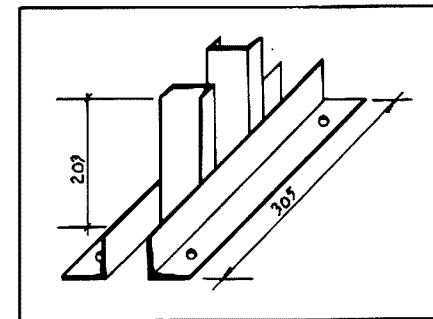


FIG. 8

REFINEMENTS

To attach the guy wires I fitted hooks made from 1/2 in. chain. This allows the guys to be quickly attached or removed while standing on the platform.

To make the hooks I cut 1 in. out of one straight side of the links and drilled 1/8 in. holes in each end as in Fig. 9. The link was fitted over the tube at the tip of the tower where the guy wire would normally go. A strand of guy wire was used to loop through the 1/8 in. hole and around the link to secure it in position.

I had a little problem with the tower section joining bolts catching on the top of the "door" base. On the newer commercial towers a small plate has been added to each corner to take the bolts and plastic locating pins fitted. So I did the same, as shown in Fig. 10.

Several weeks after erection the guy wires became slack. Instead of tightening them one at a time, I placed a small screw-up type car jack under the bottom tower section inside the door section. By operating the jack all wires were tightened at once. This led to another modification. The bottom section was removed and replaced with a 1 1/2 in. pipe with a heavy thread on the bottom end to act as a jack.

REGULATIONS

It may be necessary to have your installation approved by the local council. In my original set-up the system is stronger than the original commercial tower. My system was inspected by the Shire Inspector and Shire Engineer. Their comments were most complementary.

The photographs taken by VK6LY show the finished tower. If readers have any queries the author will be pleased to discuss these, but please send a SAE.

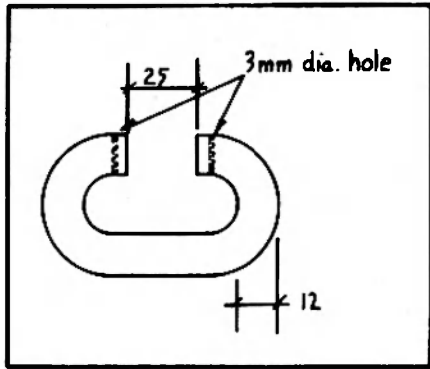


FIG. 9



John Vogel, back in the shack, makes sure that the system works.

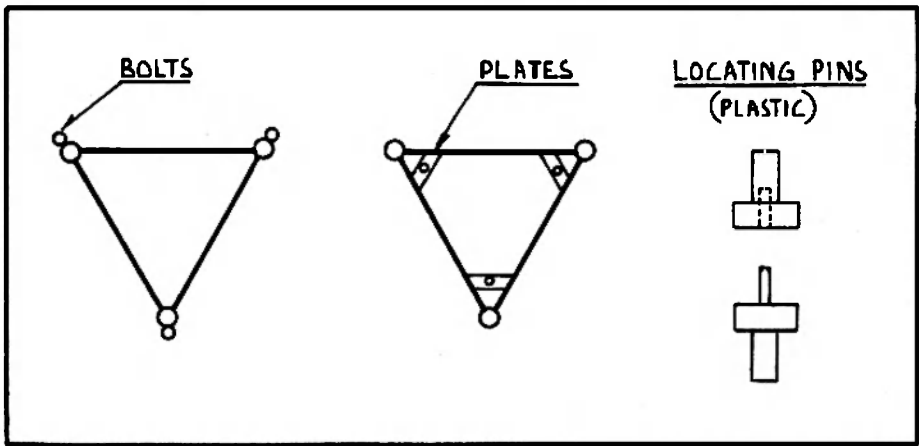


FIG. 10

TABLE 1: Parts List.

Material	Size	No. reqd.	Used for
3/8" rod	19"	28	Side bracing
3/8" rod	18"	14	Door bracing
1/2" pipe	2"	12	Hinges
1/2" bolts with nuts and washers	5"	6	Hinges
3/8" rod	10"	13	Steps
1/2" bolt	2"	1	Sheave
5/16" x 2" flat	10"	9	Spacing
3/4" pipe	22'	3	Base section
1/2" pipe	16'	2	Door
5/16" x 2" flat	8"	3	Door
1 1/2" pipe	12"	1	Base
5/16" x 2" flat	5 1/8"	3	Base
5/16" x 2" flat	6"	2	Pulley sleeve
Plate for winch			
3/16" wire cable	50'		
3/8" pipe	2"	1	Sleeve
5/16" x 1" flat	8"	1	Flat for hook
L shape bracket		6	Hinges

Note: Pipe is ungalvanised (black) water pipe.



The top end. The TH3 is up where it works best!

CALL BOOK DATA REMINDER

The Editor is aware that there are still a small number of errors, duplications and omissions as well as uncorrected addresses in the current edition.

The data in the Call Book is only as accurate and complete as the information supplied to the Institute.

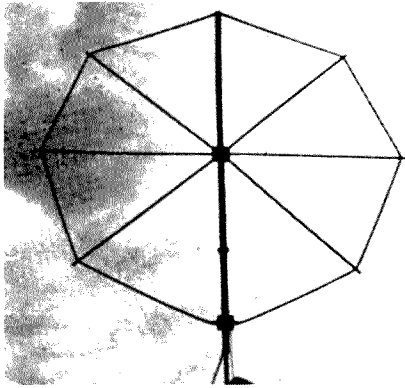
PLEASE tell us about any errors, etc., and please tell your amateur friends to tell us too. Write to —

WIA
Box 150, Toorak, Vic. 3142

BUYING OR SELLING GEAR?
HAMADS
MAKE IT HAPPEN FAST

A 10 ft. Diameter Receiving Loop on 1.8 MHz

C. H. Castle VK5KL
29 Turnbull Road, Enfield 5085

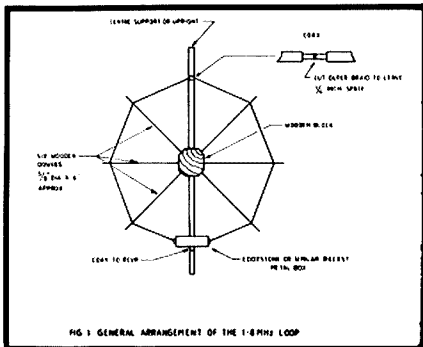


Like most operators on 160 metres, I also only have a small suburban block of land and no room to run out enough length for a Beverage antenna for receiving. For years I have been doing with a half-wave length around the fence and putting up with high noise level most of the time. Many hundreds of contacts throughout the world have been enjoyed, but I am always striving to improve reception. On recommendation from KOPP I decided to try a loop.

After acquiring a 30 foot length of RG8A/U coax, means had to be found to hold it up in the required shape.

A block of wood 6 x 5 x 1½ in. was cut as shown in Fig. 1, and six holes, to take the dowels, drilled with the aid of a dowel jig. The block was bolted to the centre upright 5 ft. 6 in. from the top.

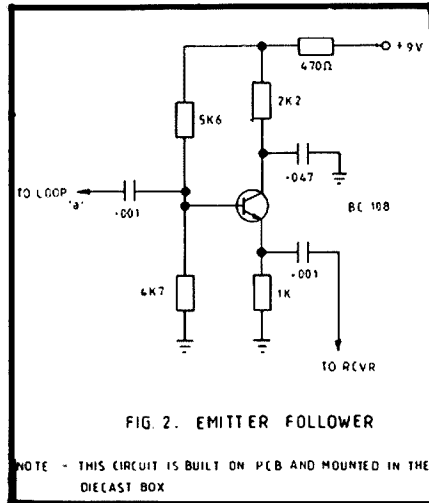
The Eddystone 6 x 4 x 2 in. metal box was drilled at each end and the bottom was fitted to take coax sockets and was then bolted to the centre upright 5 ft. from the centre. In the prototype ½ in. dowel was used but ⅝ or ¾ in. is suggested for more permanent construction. The dowels were inserted into the centre block, it was not found necessary to glue them. (Glueing and when dry, painting with external plastic paint is recommended.—Ed.) Coax plugs were fitted to each end of the 30ft. length of coax and at the centre of it the plastic



outer covering was cut away for about 1½ in., then the outer braid was cut and trimmed back for ¼ in. The removed covering was replaced and taped, then a further covering of Denso 510 waterproof tape (as used in the building of caravans) was wrapped around to cover the cut section and so weatherproof it.

The centre of the coax was screwed down to the upright using plastic saddles. The plugs on each end of the coax were screwed into the sockets on the metal box. The coax was then saddled down to the six dowels at equal distances from the centre piece so it became tight. The dowels were cut off about 2 in. past the coax. The framework with the coax is quite stable.

Inside the metal box I mounted a piece of PCB with the emitter follower circuitry, Fig. 2, on it and also the fixed capacitor to resonate the loop. See Fig. 3. The loop has to be resonated at 1810 MHz or wherever you choose.



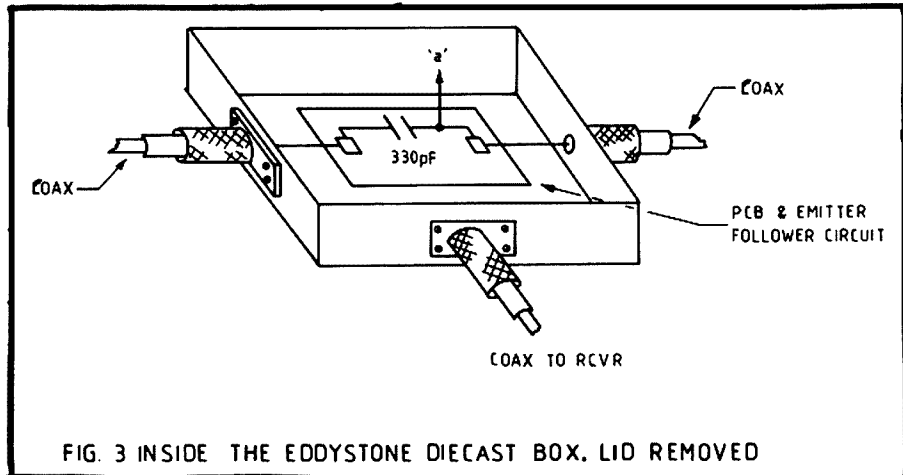
I used a variable condenser and, by listening to the receiver, resonated the loop by tuning for maximum noise. To obtain the same value of capacity I connected the condenser to an inductance, and grid dipped it and measured the dip frequency using a frequency counter. Then I substituted a fixed condenser for the variable one, selecting values until it resonated at the same frequency. The completed loop is shown in photo.

The loop performs well, cuts noise to half that of the half wave receiving aerial and has bi-directional properties. There is a big null between end on and broadside on. Tested on a signal about 10 miles away, it was able to null it from S9 to inaudibility.

You won't get quite the same effect on DX signals, possibly because of the signal having more skywave, but it does null down signals on the side and you can peak signals end on. The next project is to install a rotator so it can be operated from the shack position and not by manual means. Note it is only necessary to rotate through 180 degrees. The reason for rotating it is because it has been noticed in the short time of using it that on some nights DX signals from the USA will vary in their bearing according to the prevailing propagation path. It is not necessary to install it very high, fence height is adequate; in fact before completion with the coax lying on the shack floor I was able to copy two American SSB stations on 1815 MHz.

So if you have a noise problem, are frustrated at not being able to run out a beverage, and keen to improve your reception on top band, may I suggest you try a loop, you will be more than surprised at the result.

Postscript: For the metricated 1 in. equals 25.4 mm, 1 ft. equals 304.8 mm. ■



Antenna Tuner Adjustment — Aurally and without Radiating a Carrier

The following article may interest:—

- Amateurs with visual handicaps who need to use an ATU.
- Maritime Mobile Yachties who use backstay as radiator (with ATU).
- Short Wave Listeners using a random length antenna.
- Anyone who uses an ATU who wishes to fully adjust it without dropping a carrier on air.
- People who worry about their finals during ATU adjustment.

Tom VK2DTB and I worked together on this little project, so the use of the word "we" is *not* an instance of the "Royal Plural" so often heard on the bands.

One particular amateur friend of ours is totally blind and he had mentioned that "the thing he needed most was an ATU which he could tune aurally". It seems there are sliding tone SWR meters used by some blind operators, but they are sometimes not too easy to use with accuracy.

Another friend, Brian VK2KTQ, wondered aloud one day "If a noise bridge could be embodied in an ATU so that people could tune up in receive mode, thus eliminating the need for all those unending carriers we hear". When his message sank in as a possible aid to blind operators, Tom and I decided to give it a try.

As an experiment we used a Palomar RX noise bridge, with "R" setting pre-adjusted to read 50 ohms and neutral "X", between transceiver and ATU, adjusting the ATU to achieve a deep null on receiver noise at the chosen frequency. The noise bridge was then removed from the transmission line and a joiner inserted to apply a signal to test for SWR. We invariably achieved readings of 1.2:1 or less, on a non-resonant dipole, which *untuned*, had up to 7:1 SWR on some frequencies tested.

The idea, it seemed, was workable. We now wanted a good noise bridge circuit which we could modify with a fixed 50 ohm resistor in the known leg of the bridge, in lieu of the variable resistor. Xc and Xl were ignored because our objective was to balance these in the antenna system by adjustment of the ATU, thus presenting the transmitter with a 50 ohm resistive load. This allowed FT7s and TS120 series, etc., to develop full output.

I wrote to Bob VK3SK, and sought his advice on a suitable noise bridge and mentioned our other consideration about isolating the bridge from RF when in transmit mode. (Readers will recall Bob's three very complete noise bridge articles in AR recently.) His advice was quickly to hand and much appreciated.

A prototype bridge, using the circuit presented in Bob's third article (AR May 1981), was built on to veroboard. We re-

placed the variable resistor with two 100 ohm ¼W 1 per cent resistors in parallel and deleted the fixed and variable capacitors in the bridge. It worked well.

Then Tom discovered a new bridge circuit in the 1981 ARRL Handbook, which uses a 555 timer to produce a 100 Hz square wave. This note modulates the zener-produced RF noise and is said to "enhance" the null-finding ability of the bridge. Moreover, a PSB layout is presented, so we tried it. The one kHz note is resolved on AM mode and is very useful, but on CW and SSB mode, the "white noise" is merely "slightly coloured". It is, however, a worthwhile difference, so we have standardised on this modified board.

The device has to have a switched "through" position so that on transmit, the noise bridge is isolated and shielded from RF. A simple system of two BNC plugs which plug into two pairs of BNC sockets was chosen as a quick, positive method of isolation switching for the first two production models. (See photo 1.) The lower pair of sockets connect the bridge into the transmission line for tuning on receiving, the upper two sockets are bridged with a short length of RG58U, thus bypassing the noise bridge for transmitting.

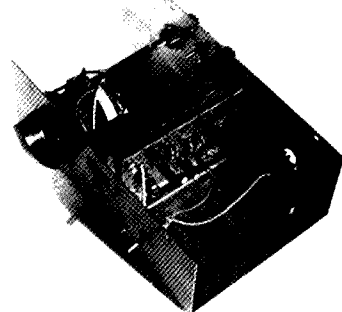


1. A completed installation. Mark 1 and 2 models were stripped at AT120/AT130 tuners.

The noise bridge requires a 9 volt battery or alternatively a 9 volt plugback can be used. On models 1 and 2 a central on/off switch is used with shielded wiring and is bypassed to the case on the "hard-wired" side to guard against RF being induced into the positive rail of the bridge when in transmit mode. Both plugs and the switch are *down* for TUNE and in *up* position for OPERATE.

The third unit has been fitted with a ceramic switch to handle the transmission line switching but the separate 9 volt DC power switch was retained — the newer layout deleting the need to use shielded wire or a bypass capacitor. (See photo 2.) So far, No. 3 seems to perform as well as No. 1 and 2 but we are anxious to see if the ceramic wafer switch proves reliable and able to handle 100W adequately. (These contacts are usually rated to 2A DC, so for power up to 50W they should be satisfactory. Two in parallel should be quite

B. I. Henderson VK2DFH
7 The Glen, Beecroft 2119



2. Inside the Mark 3 model. A ceramic switch replaces BNC plugs and sockets arrangement. Two So 239s and the 9V input socket can be seen. PCB is mounted on screening baffle.

adequate for 200 watts. At the 100 watt level a single contact may be satisfactory for ICAS.—Ed.)

By now the reader will have noted that both types of device are exposed to Murphy's Law in regard to accidental transmission while the bridge is in circuit. Even a cough while VOX is selected will, of course, damage the bridge. We just rely on our users remembering the tuning drill. However, it would be fine if we could find a simple, inexpensive way to inhibit transmit function with the device in TUNE mode. The rigs in common use with blind operators are the FT7 series, the TS120/130 series and the like. (Any suggestions please, re disabling transmit function, with RXR operative for tuning the ATU — using the above type transceivers?) (See Fig. 1.—Ed.)

Incidentally, both these type rigs have no switch to select AVC or AGC "off", as we have in most larger rigs. Hence with full RF gain, the initial slight null is hard to find before the AGC fills it in. The AGC is so swift and efficient that it completely hides the first (partial) null. Rather than modify sets to allow AGC to be switched "off", we have asked our users to reduce RF gain to the point where AGC becomes sufficiently ineffective to allow the initial null to be recognised. From here R and X are alternatively tuned to produce a very deep and usually very sharp null. This sharp, deep null invariably gives SWR readings of 1.2:1 or less. The trick is in finding best RF gain setting to catch that first null. If you have ability to switch AGC off, it is a piece of cake and very quick.

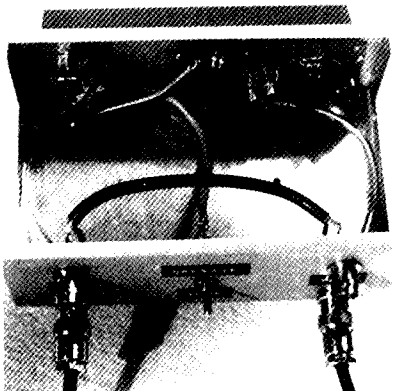
Anticipating the reader's next question — we found there was only *one* null position obtainable. This produces a low SWR reading with high power output, but perhaps I should be more explicit. When we used an AT120 tuner and kept R and X tune knob indices between the graduations zero to ten, we have been unable to find

any ambiguity of null positions. Whether this would apply to all ATUs or transmatches, at this stage, we have no idea. (Reader findings invited please.)

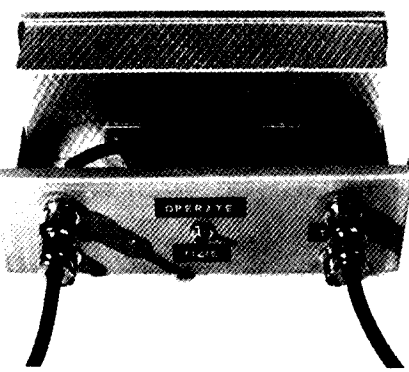
MORE ON CONSTRUCTION

The AT120/AT130 was used not only because we had one to work with but, more importantly, it is uncomplicated for use by blind operators, it is rugged and compact, it handles FT7B and TS130S type powers and is reasonably priced. Also the little built-in SWR meter is useful for someone looking over a blind operator's shoulder during the initial period. The blind operator needs to develop confidence in a good deep null resulting in a near 1:1 SWR. (We have two XYLs and one harmonic "trained" to confirm SWR read-out for the OM.) There may be other brands of antenna tuner which are equally suitable — we just haven't got round to trying them. The AT120 type, to us, fills the bill perfectly.

The box chosen for the device closely matches the width of the AT120 and can be strapped atop the ATU, using the mobile mount screws and two aluminium plates, thus giving some body to the device to facilitate plug position changing. (See photo 1.) Internal shielding can be seen (compare photo 3 and 4).



3. Completed Mark 1 and 2 before shielding is fitted.

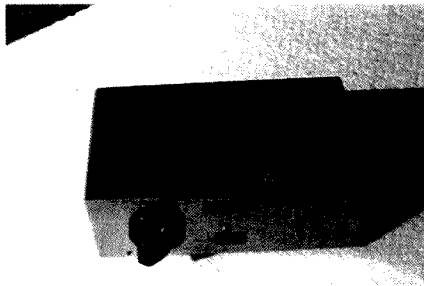


4. Completed Mark 1 and 2 with shielding in place, awaiting cover.

Mark 3 unit uses two type SO239 connectors on the rear panel, the switching as mentioned above, is performed by a

ceramic wafer switch. The switch for 9 volt supply and wiring lie within the bridge circuit shielded section, so shielded wire and bypassing were not used. Both types of unit have a suitable polarised socket for 9 volt DC battery or plugback on the rear face. (See photo 2.) Miniature 50 ohm Teflon coax was used internally into and out of the noise bridge board for ease of connection and assembly.

Photo 5 shows completed Mark 3 unit.



5. Finished Mark 3. Switching still points Up for operate and Down for tune.

The PCB for the ARRL bridge is double sided, the component side being used as a form of ground pad. We made provision for mounting the two 100 ohm fixed resistors on the board, so that the board we use can also be used for the standard ARRL 1981 version of RX bridge. (See "notes" for local availability of PCB, toroid, etc.)

PERFORMANCE NOTED TO DATE

SWRs achieved by use of noise bridge are generally 1.1:1 or less, on all bands except 10 metres. On this band we suspect X1 or Xc develops within the bridge circuit to the degree that 1.2:1 or less is the figure we found. However, this is still a practical figure for our purposes and compensation within the bridge circuit would doubtless affect all other band figures.

The three units are at present being used by three visually handicapped amateurs, two of whom are totally blind. Tom and I are looking forward to their feedback in case we need to make some modifications.

All three have quickly achieved the knack of reducing RF gain to detect that first null so it appears that we do not need to fit an "AGC off" switch to their rigs. So far, the rigs and ATUs are unmodified except for the provision of some kind of protrusion to indicate the lubber line on tuning knobs.

To time of writing all three testers have expressed general approval of the devices. Our longest user writes: "We have a real goer with this unit" and other gratifying comments. In all, it looks as if the project has some usefulness.

SHORT WAVE LISTENERS

SWLs could try the bridge idea with an ATU to peak up their random length antenna. I have seen ATUs advertised specifically for the purpose of SW listening. In this case the noise bridge could be left in circuit and merely switched off with no fear of damage to the bridge.

MARITIME MOBILES

Maritime mobiles often use an ATU in conjunction with the permanent backstay of their craft. The device outlined above could permit them to tune up their backstay while conserving battery power in receive mode. It may even be advantageous for copying weather broadcasts on a general coverage receiver on frequencies outside the amateur bands.

GENERALLY

One US manufacturer is already advertising such a product. I hope they sell a bundle!

FINALLY

I plan to make a fixed noise bridge for my own use, because I find it fascinating to tune-up my (deliberately) non-resonant dipole right on top of a certain net without them hearing one "dit" from me, until I check in. I do not like committing carriers needlessly.

ACKNOWLEDGEMENTS

Our sincere thanks to the many amateurs who have assisted us with advice and know-how.

We wish to acknowledge, with thanks, the donation of an AT120 antenna tuner by Trio Kenwood Australia, specifically to enable continued testing and development of the device for those visually handicapped — a fine contribution.

We also acknowledge kind permission from Laird Campbell W1CUT, of the ARRL to utilise material printed in the 1981 ARRL Handbook in this article.

NOTES

1. For full details and instructions of noise bridge circuitry used, see the 1981 issue of ARRL Handbook, page 16-31, and on.
2. PCB for the above, modified as in text, drilled and plated, is available from Ian Pearce, PO Box 92, Round Corner 2158, NSW. Price \$5.00.
3. Ferrite toroid specified, Amidon FT37-43, is available from R.J. and U.S. Imports, PO Box 157, Mortdale 2253, NSW (\$1.10 plus 80c p. and p.).
4. For those wishing to buy a built-up adjustable RX noise bridge, I understand we now have one designed and built locally. For details write to Kit Bits (Aust.), 110 Rosemead Road, Hornsby 1077, NSW.

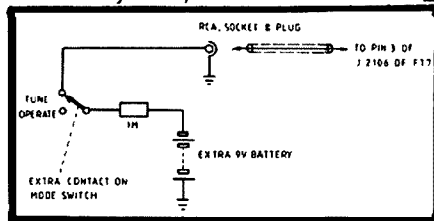


FIG. 1: FT7 Transmitter Killer.

This is a suggested circuit from VK3AFW for "killing" the output from an FT7 if it is accidentally keyed during tune-up of the ATU when using the system described in the text. The transmitter output will be less than 1 watt; a few seconds at this level should do no harm. A similar circuit may be effective with other transceivers.

Chitary's Melbourne

Earl Russell VK3BER

On the 3rd of November, 1981, Chitary Moriyama (JH6THP/VK2DWX) departed from Japan on his dream trip to Australia. (For details about Chitary and the purpose of his visit see AR October 1981, pages 18-19.) After spending some enjoyable days in Sydney and Canberra, Chitary and his brother, Mashio, arrived at Melbourne Airport at 6 p.m. on Tuesday, 17th November. Disembarking from the plane had to be achieved with the aid of a forklift — an unnerving experience — before Chitary was able to meet the group of amateurs and friends who were at the airport to welcome him. After the airport welcome we made the 1½ hour journey to Frankston, where the owner of the Beach Flag Hotel had offered free accommodation to Chitary and Mashio.

The first official function the following day was an afternoon visit to the Japanese Consulate to meet His Excellency Mr. K. Kaneko, the Consul General of Japan. The Consul General congratulated Chitary on his courage and determination not to allow his disability to confine him to a hospital. Chitary explained the benefits of amateur radio in creating and maintaining international goodwill and friendships, as well as the therapeutic value to a person suffering from various handicaps and disabilities. While Chitary was visiting the Consul General a news team from the Nagasaki Broadcasting Company arrived in Melbourne to make a 55 minute documentary of his visit. The news team caused much amusement with their activities. The producer, Mr. Kunikatsu Mori, and the camera man, Mr. Ichiro Ishiguka, were on their first major assignment out of Japan. Their equipment would have made the ATV boys' mouths water — Sony ENG camera, 2 VCRs using cassettes the same size and timing as a C60 audio cassette, and a monitor for viewing tapes — all powered by Nicad battery packs. I hope to be able to obtain a copy of the documentary they made. At the last count they had "exposed" more than 10 hours of tape. They were very professional, with a minimum of intrusion consistent with their filming commitments and great ambassadors for their country.

Wednesday evening Chitary was guest of honour at a reception organised by the Victorian Disabled Citizens' Association (VDCA), with the support of Doncaster Rotary, Apex and Jaycee Service Clubs. The meeting was chaired by Mr. George Taylor, President of the VDCA. Earl Russell VK3BER introduced Chitary, who spoke about facilities for the disabled in Japan, as well as the benefits of amateur radio, particularly as an interest for disabled persons. After his speech, Chitary presented an IC730 HF transceiver and power supply and an IC2A hand-held 2 metre

FM transceiver donated by ROAR (Rotary Amateur Radio) of Japan to Mr. David East, President of Doncaster Rotary Club. Mr. East then presented the equipment to the president of the VDCA for use by disabled amateurs. It was interesting to learn that the Doncaster Rotary Club was the founder of the Victorian Muscular Dystrophy Association. Among the other guest speakers during the evening were the Japanese Consul General, the Mayor of Doncaster and Bill Yates VK3SB. Bill presented Chitary with the Moorabbin Radio Club Award and made his presentation speech in both Japanese and English. Among the many guests present were some 20 amateurs, including three who had met Chitary in Japan. They were Bill VK3SB, Des VK3CO and Alan VK3AL. It was a great pleasure for Chitary to "eyeball" these friends in their own country.

The following day (Thursday) was a busy one for Chitary. The first activity was a visit to the WIA Victorian Division Centre. This was followed by lunch with the THUGS (Thursday Group). There were approximately 25 amateurs there, and the ever present TV crew got some good footage of amateurs relaxing. Chitary was made an honorary THUG and presented with his certificate of membership.

In the early afternoon a visit was made to the Yooralla Special School at Doncaster, where Chitary was welcomed by the Principal, Mr. Tony McNamara, and the President of the Muscular Dystrophy Association, Mrs. L. Price. Chitary spoke to the older pupils about life in Japan and how amateur radio broadened his horizons. A boy suffering from the same disease as Chitary was particularly interested in learning more about amateur radio, and the Principal would be prepared to establish a station for them. If anybody in the area has time to spare to instruct these boys so they can obtain licences it would be greatly appreciated.

The final item on the day's agenda was a visit to the Radio Australia Studios in Melbourne, where Chitary recorded a 20 minute interview for subsequent replay on Radio Australia.

On Friday morning the Mayor of Frankston, Cr. Rogan Ward, held a morning tea reception for Chitary. The Mayor wore his full regalia, which greatly interested the Japanese, as their civic leaders have no special robes of office. The Mayor explained each item of his regalia and the functions of local government. At the end of the reception the Mayor presented Chitary with a set of cuff links bearing the Frankston Coat-of-Arms. Chitary's visit to the Frankston Civic Centre highlighted the lack of suitable wheelchair access, and plans are now under way to rectify this situation.

Friday evening was the amateur radio highlight of Chitary's visit. He was guest of the Eastern and Mountain District Radio Club. The Club organised a combined meeting with the Moorabbin and District Radio Club via amateur television through the Melbourne ATV repeater. The combined attendance at the two venues was around 250, and many more watched proceedings via the repeater. WIA Federal and Victorian Division executives, and Department of Communications were represented at the EMDRC. I won't attempt to mention any names and call signs of those present, as it would be a dis-service to any I unwittingly omitted — suffice to say that it would read like a who's who in Victorian amateur radio. I will mention three people who did an outstanding job — Peter Cossins VK3BFG and Niel Muscatt VK3BCU, who organised the ATV at EMDRC and MDRC, and John O'Rorke VK3XS, Vice-President of EMDRC, who chaired the meeting.

The telecast commenced with the Mayors of Nunawading and Moorabbin exchanging greetings and friendly insults over ATV. Chitary was introduced by an old friend, Des VK3CO, and addressed the combined meeting. The Mayor of Nunawading presented Chitary with a beautiful plaque on behalf of the EMDRC for his services to amateur radio and international friendship.

On Saturday afternoon a helicopter flight was organised in the Peninsula rescue helicopter. During the drive from Frankston to Mt. Martha, where the helicopter is based, there was an excited babble of Japanese from the back seat and a request to stop the car. We were passing a paddock full of sheep, and to the average Japanese, Australia is sheep (and kangaroos and koalas). There was no way the TV crew was going to miss this footage! Eventually we got them reluctantly back in the car (after pointing out the danger of snakes in the long grass in which they were standing). Chitary really enjoyed the helicopter flight over the southern end of Port Phillip Bay. He had been looking forward to it with great anticipation and some trepidation ever since I first mentioned the possibility to him some months earlier. The weather was fine and clear with no turbulence. The flight had to be shortened by a couple of minutes as there was a rescue call for the helicopter, and whereas it took about ten minutes to get Chitary settled comfortably in the helicopter, it only took 30 seconds to get him out again.

Saturday evening there was an "open house" barbecue and evening at my QTH, where a good number of people dropped in for a friendly chat with Chitary, quite a few who had spoken to him on air. The ubiquitous TV crew were "on duty" during the evening, filming everybody and every-

thing. Altogether they filmed three meals at my QTH. Each occasion the Melbourne weather was fine and warm and we had our meal outside on the balcony. I am sure Japanese TV viewers will get the impression that Australians always dine out-of-doors.

Regular skeds were maintained back to Nagasaki to keep the medical staff at the hospital informed of Chitary's progress. Coincidentally the station taking the sked on Saturday night was an engineer from Nagasaki Broadcasting Company. The TV crew had been having trouble with their VCRs (they were trying out a lightweight domestic model) and were able to discuss the problem direct with their boss. They were amazed at the clarity of reception. The QSO was filmed and I hope it makes it into the final documentary.

Sunday was a rest day, as Chitary was starting to feel the strain of his rather busy schedule. A "Japanese" evening was organised for him, Yasuo VK3KYT with two other Japanese amateurs living in Melbourne, Hiro and Yoshi, and their families attended.

The remainder of Chitary's visit was a leisurely sightseeing few days and an overnight visit with Alan VK3AL.

The farewell at the airport on Friday evening was a sad occasion for the amateurs and their families, and members of the VDCA who were there. It was difficult to say farewell to these people who had become such good friends in the



Welcome Chitary to the ATV broadcast at the EMDRC. Chitary Moriyama JH6THP/VK2DWX, Peter Wolfenden VK3KAU, WIA Federal President, and Dr. David Wardlaw VK3ADW. Photo by John VK3KCA.

short time they were here — the TV crew, two very hard-working, interesting and amusing people when they relaxed — Mashio, Chitary's young brother, who stayed in the background watching over Chitary, instantly alert to his every need —

and finally Chitary, that tough little guy with a cheeky grin who quickly gained a very special place in our hearts.

Chitary has now coined new phonetics for his call sign — JH6 Tremendously Happy Person. ■

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 1.8125 — Ncle relay, 1.825 — Sydney relay, 3.595 (7.146), 28.32, 52.12, 52.525, 144.12 MHz. Repeater Ch. 6650 Oberon (6700 Orange), 6750 Gosford (6800 Lismore), 6850 Wollongong, 7000 Sydney, 8525 Sydney.

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 Gen. Mtg. — 2nd Wed., 20.00.

QLD.:

President — Mr. D. Laurie VK4DT
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 Broadcasts— 1.825, 3.580, 7.120, 14.342, 21.175, 28.400, Rpt. Ch. 6700 and 7000 Sundays from 0900Z (Sat. 2300 UTC).
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 Broadcasts— 1820, 3550, 7095, 14175 kHz: 21.195, 28.470 and 53.1 MHz, 2m (Ch. 8): 09.00 S.A.T.
 Gen. Mtg. — 4th Tuesday, 19.30.

WA:

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 Gen. Mtg. — 3rd Tuesday.

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Postal Information:

VK1 — P.O. Box 46, Canberra, 2600.
 VK2 — 14 Atchison St., Crows Nest, 2065 (Ph. (02) 43 5795 Mon, Tues & Thurs 9.45-13.45h).
 P.O. Box 123, St. Leonards, NSW 2065.
 VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03) 417 3535 Weekdays 10.00-15.00h).
 VK4 — G.P.O. Box 638, Brisbane, 4001.
 VK5 — G.P.O. Box 1234, Adelaide, 5001 — HQ at West Thabarton Rd., Thabarton.
 VK6 — G.P.O. Box 10, W. Perth, 6005.
 VK7 — P.O. Box 1010, Launceston, 7250.
 VK8 — (incl. with VK5), Darwin AR Club, P.O. Box 37317, Winnelie, N.T., 5789.

Slow morae transmissions — most week-day evenings about 09.30Z onwards around 3550 kHz.

VK QSL BUREAUX

The following is the official list of VK QSL Bureaux, all are inwards and outwards unless otherwise stated.

VK1 — QSL Officer, G.P.O. Box 46, Canberra, A.C.T. 2600.
 VK2 — QSL Bureau, P.O. Box 73, Teralba, 2284.
 VK3 — Inwards QSL Bureau, Mrs. B. Gray VK3BYK, 1 Amery Street, Ashburton, Vic. 3147.
 VK3 — Outwards QSL Bureau, Mr. D. J. Clarke VK3DES, C/o VK3 Rooms.
 VK4 — QSL Officer, G.P.O. Box 638, Brisbane, Qld., 4001
 VK5 — QSL Bureau, Mr. Ray Dobson VK5DI, 16 Howden Road, Fulham, S.A. 5024.
 VK6 — QSL Bureau, Mr. J. Rumble VK6RU, Q.P.O. Box F319, Perth, W.A. 6001.
 VK7 — QSL Bureau, G.P.O. Box 371D, Hobart, Tas. 7001.
 VK8 — QSL Bureau, C/- VK8HA, P.O. Box 1418, Darwin, N.T. 5794.
 VK9, 0 — Federal QSL Bureau, Mr. N. R. Penfold VK6NE, 388 Huntrills Rd., Woodlands, W.A. 6018.

National EMC Advisory Service

Tony Tregale VK3QQ
Federal EMC Co-ordinator
38 Wattie Drive, Watsonia 3087

RFI Directory of Assistance

This directory is presented to promote a better community understanding of Radio Frequency Interference and to assist all who are associated with the Electronics Industry.

SOURCES OF ASSISTANCE IN RESOLVING RFI PROBLEMS

If you have a RFI problem we recommend that in the first instance you forward concise details to the National EMC Advisory Service. However, the manufacturers listed have volunteered to provide information and assistance, where possible, in connection with RFI problems associated with their equipment.

You are advised to ensure that all regular RFI investigations have been completed and all regular RFI precautions taken before contacting these manufacturers. Please help them to help you by providing as much information as possible in connection with the problem.

AKAI

We advise that requests for technical assistance should be directed to:—

The National Service Manager,
Akai Marketing Services Aust. Pty. Ltd.,
PO Box 309,
North Ryde, NSW 2113.

AWA — THORN — MITSUBISHI

RFI complaints concerning consumer products should be referred to the nearest Service Department listed below:—

Adelaide:
101 Main North Road, Nailsworth 5083.
Phone: 269 1966.

Melbourne:
123 Bamfield Road, West Heidelberg 3081.
Phone: 459 1688.

Brisbane:
73 Jane Street, West End 4101.
Phone: 44 7211.

Hobart:
10 Chesterman Street, Moonah 7009.
Phone: 72 4366.

Perth:
11 Belmont Avenue, Belmont 6104.
Phone: 277 7788.

Townsville:
Cnr. Hamil and Schmid Streets, Townsville 4810. Phone: 79 6444.

Sydney:
348 Victoria Road, Rydalmere 2116.
Phone: 638 9022.

GENERAL ELECTRIC

Customer inquiries relating to RFI should be referred to the Rank Services and Dis-

tribution Centre located in each State, or in writing to the National Service Manager, Rank Service and Distribution, 296 Fern-tree Gully Road, Notting Hill, Victoria. Phone: (03) 541 5555.

HAGEMeyer (AUSTRALIA) B.V.

Customer problems involving RFI should be referred to the Service Manager in the respective capital cities for investigation. Inquiries may be directed to:—

The National Service Manager,
5-7 Garema Circuit,
Kingsgrove 2208.
Phone: (02) 750 3777.

HEALING

RFI complaints should be directed to the Rank Services and Distribution Centre located in each State. Further inquiries can be made in writing to:—

The National Service Manager,
Rank Services and Distribution,
296 Fern-tree Gully Road,
Notting Hill, Victoria.
Phone: (03) 541 5555.

HMV

Customer problems involving RFI should initially be referred to the Rank Services and Distribution Centre located in each State. If problems are not resolved at this level then complaints should be made in writing and directed to:—

The National Service Manager,
Rank Services and Distribution,
296 Fern-tree Gully Road,
Notting Hill, Victoria.
Phone: (03) 541 5555.

HITACHI

Any requests for technical information related to RFI should be directed to:—

The Technical Director,
Hitachi Sales Australia Pty. Ltd.,
153 Keys Road, Moorabbin 3189.
Phone: (03) 555 8722.

KLARION ENTERPRISES PTY. LTD.

Service information can be obtained through:—

Melbourne:
Service Manager, 63 Kingsway, South Melbourne 3205. Phone: (03) 61 3801.
PO Box 379, South Melbourne.

Sydney:
Service Manager, Unit 3, 3 Lanceley Place, Artarmon 2064. Phone: (02) 438 1388.

Brisbane:

Service Manager, 199 Elizabeth Street, Brisbane 4000. Phone: (07) 229 2077.

Adelaide:

Service Manager, 35-37 Halifax Street, Adelaide 5000. Phone: (08) 212 2217.

Perth:

A. M. Hill Pty. Ltd., Unit 5/66 Wellington Street East, Perth 6000.

LUXOR

In the event of an RFI problem with a Luxor television set the customer may write to:—

The Manager,
Skantic (TV-HI/FI) Services Pty. Ltd.,
PO Box 141,
Mitcham 3132.

PIONEER

Requests for technical assistance in connection with RFI problems associated with "Pioneer" brand high fidelity and car sound audio products should be directed to:—

The National Service Manager,
Pioneer Marketing Services Pty. Ltd.,
178-184 Boundary Road,
Braeside 3195.
Phone: (03) 580 9911.

PHILLIPS-TMC

Any information or advice for problems on EMC on our products (Telecommunications) should be directed as follows:—

Product Manager — Service,
Philips TMC Radio Division,
PO Box 105,
Clayton 3168.
Phone: (03) 544 0366.

PHILIPS TV AND HI/FI

Any information regarding EMC in relation to our Consumer Products and Domestic Entertainment Products should be directed as follows:—

Technical Manager,
Philips Service,
PO Box 10,
Concord West 2138.
Phone: (02) 736 3611.

PYE CONSUMER PRODUCTS

We maintain a service department in each capital city, plus Newcastle, Townsville and Canberra and initial contracts regarding RFI problems should be made with the

Service Manager at the appropriate branch office. The address and telephone number will be found in the local telephone directory.

RANK ARENA

Customer problems involving RFI should initially be referred to the Rank Services and Distribution Centre, attention Service Manager located in each State. If problems are not resolved at this level then complaints should be made in writing and directed to:—

The National Service Manager,
Rank Services and Distribution,
296 Ferntree Gully Road,
Notting Hill, Victoria.
Phone: (03) 541 5555.

RANK ELECTRONICS

Requests for technical assistance in connection with RFI problems associated with our products should be directed to:—

The Managing Director,
Rank Electronics,
14 SuakIn Street,
Pymble 2073.

RANK-NEC PTY. LTD.

Requests for technical assistance in connection with RFI problems associated with our products should be directed to:—

The Technical Manager,
Rank-NEC Pty. Limited,
25 Coombes Drive
Penrith 2750.

SHARP

All enquiries regarding RFI problems associated with our products should be directed to:—

The National Service Manager,
Sharp Corporation of Australia Pty. Ltd.,
PO Box 233,
Fairfield 2165.
Phone: (02) 728 9111.

SONY

Problems or enquiries relating to EMC in connection with Sony audio or video equipment should, in the first instance, be referred to the local Sony Australia office or authorised Sony Service Centre. If not satisfied, then the problems should be referred to:—

The Technical Services Division,
Sony Australia Pty. Ltd.,
453 Kent Street,
Sydney 2000.
Phone: (02) 20 221.

TEAC

All enquiries or complaints in regard to RFI associated with our products should be directed to:—

The Service Manager,
TEAC Australia Pty. Ltd.,
115 Whiteman Street,
South Melbourne 3205.
Phone: (03) 699 6000.

NATIONAL EMC ADVISORY SERVICE

Requests and information may be directed to:—

Federal EMC Co-ordinator,
Wireless Institute of Australia,
PO Box 150,
Toorak 3142.
Phone: (03) 528 5962.
Or home address VK3QQ, QTHR

RON WILKINSON ACHIEVEMENT AWARD 1981

The recipient of this highly prized Award for the year 1981 is Mr. Ray Jones VK3RJ in recognition of almost a lifetime devoted to the work of the Federal (and Victorian) QSL Bureaux.

The Executive resolved that two other nominations by the respective Divisions for this Award should receive honourable mention. These are the WIA Repeater Group with Gill Weaver VK6YL and Peter Smith VK1DS, of the ACT Repeater Section.

This Award was set up in March 1978 funded mainly from interest derived from the investment of \$1100 donated by Mrs. Mary Wilkinson, widow of the late Ron Wilkinson VK3AKC, in his memory. The qualifications for the Award are as follows:

The Award is for special achievement in any facet of amateur radio. The following examples illustrate the level of achievement which will be taken into consideration in making the Award:—

- Outstanding communication achievement.
- Article for Amateur Radio Magazine.
- Holder of Australian DXCC.
- Development of state of the art techniques.
- Involvement in Institute affairs.
- Microwave activity.
- Involvement in WICEN, Education Clubs or similar.
- Achievement in using amateur satellites.
- Notable Public Service.

These are only examples. As can be seen the Award is extended to cover the whole gamut of amateur radio activities.

(AR March 1978, page 17.) ■

EMC

(Electro Magnetic Compatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

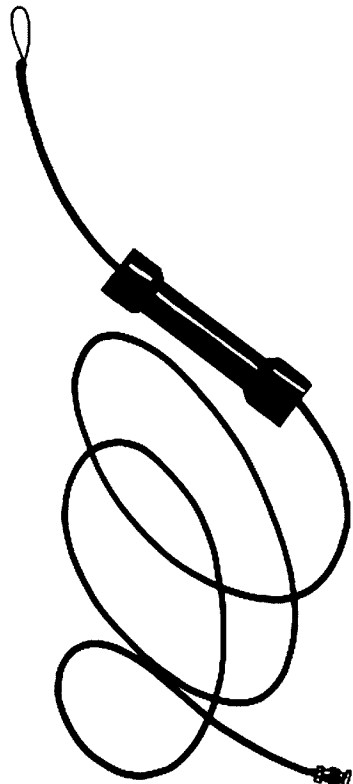
FORWARD DETAILS TO
VK3QO,
Federal EMC Co-ordinator, QTHR.

WANTED

Any good technical
articles for publication
in AR

*NEW!

2 METRE "STOCKWHIP"



Communicate with SCALAR

A fold away, flexible dipole antenna. Enables you to extend the range of your 2 meter hand held transceiver... At home, in the office, camping, caravanning, - all sorts of places!

You replace the transceiver stubby with the Scalar "Stockwhip" - hang it up by the convenient nylon loop - and listen to the improvement.



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Most popular communications receiver in the world!



20,000 KM RANGE YAESU FRG-7

More Yaesu FRG 7's are in use throughout the world than any other communications receiver. Check these outstanding features:

- Features the famous Wadley Loop for rock solid stability & minimal drift!
- Triple conversion superheterodyne circuit for extremely high sensitivity with excellent selectivity (better than 0.7uV, 6dB @ 3kHz & 50dB @ 7kHz)
- Operates from 100/120/220/240V AC or 13.5V DC
- Weighs only 2kg, size 34 X 15 X 29cm
- 2IC, 22 transistor & 16 diode circuitry

D 2850

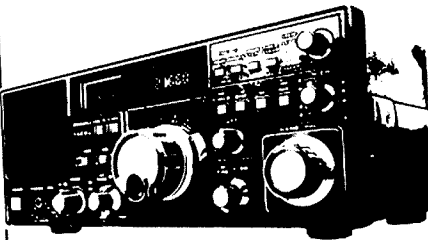
WAS \$495 LAST YEAR!

ONLY \$359⁰⁰
SAVE \$40

DICK SMITH Electronics

Australia's largest supplier and Yaesu factory approved distributor & service centre.

Yaesu's brilliant FRG 7700/SW



There's not much we need to say about this outstanding receiver - let the features speak for themselves

- 2MHz - 30MHz continuous!
- All mode - including FM (great with converters)
- Digital frequency readout, with digital clock
- Superbly easy to operate - set pre-selector, then tune!
- Timer for tuning receiver on/off, plus control of external equipment eg (tape recorder)

D 2841

EXCLUSIVE TO DICK SMITH

ONLY \$499⁰⁰

OPTIONAL MEMORY UNIT

Gives you single button recall of any of 12 chosen frequencies. Great for monitoring, skeys etc. Simple connection, instructions inc. **\$149⁵⁰**

D 2842

The FRG 7700 is an ultra compact antenna tuner. Designed to operate from 150kHz - 30MHz, it will provide the proper impedance for the receiver, rejecting unwanted signals. Also has a built in 60dB max attenuator plus a two section lowpass filter aid for rejection of strong signals above 2MHz.

Antenna Tuner \$81⁵⁰

D 2843

FRV 7700 VHF 2-6 metre converter

Increase the listening range of your FRG 7700 with this high performance frequency converter. You'll be able to listen to all the amateur activity up top, plus aircraft & land mobile stations, etc. Makes great VHF listening!

ONLY \$124⁵⁰

D 2844

MOBILE CHARGER

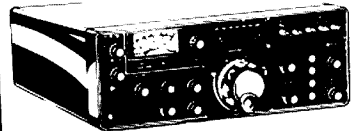
D 2894



The Yaesu PA-2 is a mobile charger, come pwr supply. Suited for the FT207R & FT208R. Uses the power from your 12V battery when mobile. Also recharges nicads in your battery pack.

ONLY \$29⁹⁵

TOP OF THE RANGE SSB/HF transceivers



FANTASTIC FT-107 DMS

This has to be Yaesu's finest transceiver. A masterpiece of solid state engineering - you only have to take the cover off to see the thought & care that has gone into its design. Full band coverage, of course, in all modes (FSK included). A massive 240W PEP input, with features like RF speech processor, variable bandwidth, superb noise blanker. PLUS 12 channel memory. The FT 107 is everything you want from a transceiver and a little bit more.

D 2871

ONLY \$1328

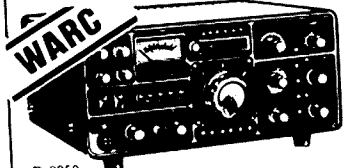
Antenna Coupler

FC 107

Problems with antenna mismatch on your FT-107? Not with this superb coupler. Designed to match the 107 styling, but just at home with any transceiver. Huge meters for power output and SWR. Superb quality!

ONLY \$205

FT-902D
our most popular HF transceiver



D 2853

The FT 902D has just about everything you've ever wanted in a transceiver. All modes (yes even FM, great with converters), & all bands from 160 to 10M (including WARC). You get digital readout, RF speech processor, rejection tuner, 180W PEP input etc. etc. So come in to one of our stores & check it out & ask for your free brochure.

ONLY \$1195

Antenna Coupler

FC 902

This coupler can feed anything from a random length of wire to a beam. Match the load perfectly so you can deliver more power up there where it's wanted! Suits all bands, has built-in SWR/pwr meter as well 50 or 75 ohm system, 500W rating.

ONLY \$265

D 2855

NEW! NEW! NEW!

VHF Handy FM Transceiver FT-208R

The FT 208R transceiver brings a new flexibility to today's active 2M operator. An easy to read LCD display is coupled with a 4 bit microprocessor, bringing 10 memories & a scanning function. Only with Yaesu can you get these features at such an economical price. Check it out NOW!

ONLY \$368



TEN MEMORIES & SCAN FACILITIES

INC. CHARGER

Cat D-2889

NEW! NEW

2 METRE PORTABLE

FT 290R



ALL MODE
FM/SSB/CW

The FT-290R is a highly sophisticated compact multi-mode transceiver for the 2M amateur band. Featuring PLL synthesis in 100Hz, 1KHz, 5KHz, or 10KHz steps. The FT-290R utilizes a Liquid Crystal Display for digital readout for the operating frequency, 10 memories, scanning of the band or memory channels, two VFOs, & receiver offset tuning makes the FT-290R a significant breakthrough in technology.

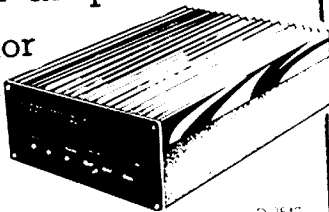
ONLY \$395⁰⁰

NEW! NEW

VHF Power boosted

linear amp FL-2050

Ideal for
all 2M
rigs

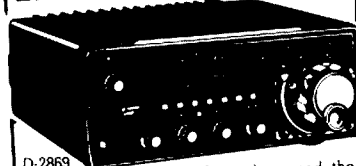


Add this to your hand held for real mobile power. Also suitable for SSB, CW, AM etc. Operates from 13.6V DC up to 15W input for maximum power. Includes 12dB receiver pre-amp, with automatic transmit receive control.

ONLY \$239⁰⁰

DICK SMITH WILL BEAT ANY
GENUINE PRICE ON
YAESU EQUIPMENT

Mobile or base



FT707 Yaesu has used the 'state of the art' technology & put it into such a tiny package. Yes, it's the brilliant FT-707. This little wonder contains all the outstanding features that most big rigs lack. It's a full power, all HF band (inc. WARC) multi-mode transceiver. You get digital readout, LED S/Power meter, push button operation, all the things the amateur needs for safe reliable operation. You've wanted a long time for a rig like this, so take the splurge now, it's well worth the money.

ONLY \$795

Antenna Coupler

Get the most from your FT-707 - use the Yaesu FC-707 antenna coupler & ensure your transceiver always delivers the power it should. Has all the features you need: power/SWR meter, in-built dummy load, all band coverage (including WARC), less than 0.5dB insertion loss.

ONLY \$149⁸⁰

Base operation?

Just add the FP-707 mains supply & you're away. You get fully regulated 13.5V at 20A. Has plug-in connections so you can't cause problems, plus you get an extra speaker for greater clarity.

ONLY \$175

Digital VFO



Long n slim - intended to sit under the 707. 12 memories, up/down scanning in 10Hz steps & receiver offset tuning. Power by FT-707.

ONLY \$299⁸⁰

Mobile bracket

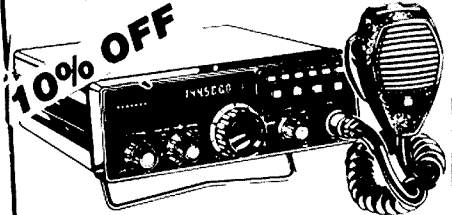
Don't let your valuable 707 jump all around the car. Fit it in this superb mounting bracket for safety & security. Also holds the digital VFO. A must for the serious mobile operator.

ONLY \$36

Yaesu's top 2 metre

FT 480R has

FM/CW & SSB



Yaesu call this their 'total performance VHF computerised transceiver'. And total performance it is! As the top of the line Yaesu 2M family you'd expect a lot. You get FM, SSB, CW over the full 2M band, with two VFO's, four memory channels, scanning, digital readout, hi/lo power switch & much, much more. To sum it up in one word, superb!

ONLY \$525

NEW!

FT 101Z FM

The famous FT101Z plus, FM at a bargain price! **\$888**

DC-DC Inverter

Want to go mobile? Add this superb DC/DC inverter to your car battery (13.5V nominal). Don't tie yourself to your shack - get out to where the DX is great!

ONLY \$77

FL-2100Z 1.2kW Linear Amp.

If you want a linear amp built like a power house that gives you a clean strong signal, try the new WARC FL 2100Z. Australian amateurs can be assured that at our maximum legal limit of 400W PEP the FL 2100Z is just bursting resulting in years of extra life. It features twin cooling fans for reliable operation & gives precise voltage VSWR & DC readings from its two large meters. Suits virtually all amateur transceivers on the market.

ONLY \$580

AMATEUR CALLBOOKS

Foreign Radio (Not incl. USA)

The Foreign Callbook contains over 300,000 licensed radio amateurs in countries all over the world, giving call letters, name and address. Ideal for DXers. **\$21.95** Cat B-2262

United States N, K & W

Listings Contains call letters, class name and address of over 300,000 licensed radio amateurs in the U.S. **only \$22.95** Cat B-2260

DICK SMITH ELECTRONICS



Order Value	Charges
\$5-\$9.99	\$1.20
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\$100 or more	\$6.00

These charges for goods sent by Post in Australia only - not Airmail, overseas or road freight

UHF Repeaters in Victoria

Peter Mill VK3ZPP

In 1980 Philips TMC, head office located at Clayton, donated a number of Pye Westminster W15U mobiles to the WIA. These were divided between the Divisions.

The Victorian Division was fortunate enough to be allocated three of these units. The task of finding a use for our three units was given to the Victorian Division's Melbourne based Repeater Group which was, at the time, responsible for the maintenance and updating of VK3RML, VK3RMM and the portable two metre WICEN repeater.

There were two things we could have done, one was to have decided that it was going to cost too much to develop these units and let them gather dust. The second, and the option we chose, was to approach the Council of the Division for funds to develop these units as mobile and/or WICEN repeaters for use by the amateurs of Victoria.

One antenna engineering diplexer model 4LD-450S was purchased for each repeater.

Each of these units were developed differently, so we will discuss each one separately.

VK3RCU — MT. MACEDON

It was decided that the first unit would be developed as a WICEN and general mobile repeater on Mt. Macedon as a support for the existing WICEN and general mobile repeater VK3RMM on two metre 6850.

The frequency allocated by the Victorian Division's Technical Advisory Committee was 434.275 MHz input and 439.275 MHz output. The unit was modified and installed on Mt. Macedon. The exciter of the W15U had to be modified to eliminate excessive noise being generated due to the W15U operating outside its frequency range.

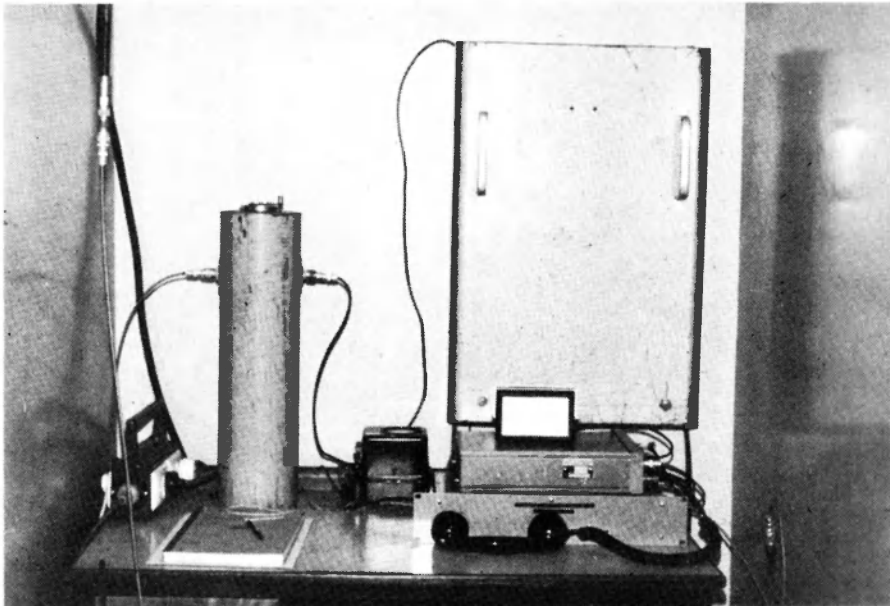
After being in operation for a few months we decided to try and increase the output power. Philips were again contacted and they donated an FM 828U power amplifier assembly. (828U is Phillips' current mobile.) This increased the power from five watts to 48 watts output.

The aerial used was a Scalar 6 dB GSA46. No experiments have been conducted with different antennas due to limited access to the tower.

VK3RNU — MT. STANLEY (Beechworth)

The frequency allocated was 433.525 MHz input and 438.525 MHz output. This unit was much easier to develop after finding out all the traps in VK3RCU. Once again we used a Scalar GSA46 antenna and a model 4LD-450S diplexer.

The repeater was modified in Melbourne. We enlisted the aid of Brian VK3AFN to help maintain the repeater. Brian also supplied and built a fifteen watt power amplifier for the repeater.



Inside the hut at Mt. Macedon. VK3RCU on the table and VK3RMM on the wall.



VK3RWI

VK3RWI — PORTABLE WICEN

The frequency allocated was 433.625 input and 438.625 output. This allocation is not one of the ten mobile repeater channels, as it was felt that an exclusive frequency was needed so that the repeater could be located anywhere in the State. As per the DOC guidelines, this repeater has no ident or timer. It delivers the standard five watts output.

It has been modified so that it may easily be interfaced with most sideband transceivers. This enables WICEN control to operate two 80 metre nets from the one headquarters. (One direct and the other remotely controlled using UHF via VK3RWI.)

Scalar Industries kindly donated a GSA46 antenna for use with VK3RWI.



Col VK3BLE accepting the Scalar antenna from Frank Welsh VK3BPV, Managing Director of Scalar.

CONCLUSION

This is just a brief outline of how the VK3 Division utilized their W15Us. The VK3 Division Repeater Group would again like to thank Philips and Scalar Industries for their assistance in making these repeaters possible.

Hope to hear you mobile on 70 cm FM.

WIA Victorian Division Melbourne Repeater Group. ■

AMSAT AUSTRALIA



R. C. Arnold VK3ZBB

and a number of contacts have been made via both the transponder and the robots. Reports from amateurs accessing the satellites would be appreciated. Orbital parameters as at 24th January are:—

Satellite	Time per Orbit Minutes	Long Increment °W
RS3	118.518838	29.756440
RS4	119.395006	29.975680
RS5	119.555111	30.015691
RS6	118.717730	29.806231
RS7	119.196669	29.926063
RS8	119.765374	30.068304

As mentioned last month, I received a most interesting letter from Colin Hirst VK5HI, which outlines some of the work he has done with data from UO9.

Colin has been interested in data decoding for many years, particularly to evaluate the spin and tumble rate of Oscars 6, 7, 8 and now 9 — that's almost a ten year period.

For UO9 Colin finds the magnetometer experiment provides the most useful data to evaluate the spin and tumble rate which at the time was significant. Unfortunately a long delay in mail due to the postal strike made his figures less meaningful, so I will not quote them at this late stage.

Colin runs a System 80 computer to print his data. He can store 2½ minutes worth of 1200 baud ASCII in RAM and he then uses a routine to dump in baudot at 45.45 baud and print out in 40 minutes. As he says, "Beggars can't be choosers".

There are some interesting comments on decoders. Colin's home brew decoder works extremely well up to the 1200 baud ASCII with only a small loss of information due to QSB (not necessarily your fault, Col). Graham VK5AGR is using the AMSAT-UK design which appears to be excellent up to 300 baud, but poor on 1200 baud. Colin and Graham are hoping to evaluate copies of the USA design decoder and I hope they will report their findings. Perhaps one of them could write an article on the best design, for publication in Amateur Radio.

Thank you, Colin, for your Initial report, I look forward to hearing from you and others again.

After the launch of an amateur satellite both Charlie VK3ACR and I receive a number of enquiries for further information, generally from amateurs who are interested in satellite communication. The launch of UO9 produced an even greater volume of enquiry but this time many calls came from a new source — the computer operator or one interested in the acquisition of the UO9 pictures. Many of the enquirers had no knowledge of radio, the Wireless Institute or the various AMSAT Groups.

In the past, specialist groups interested in receiving and transmitting data, e.g. RTTY have been entirely made up of licensed amateurs but now we note interest by a much broader group who see amateur radio only as an adjunct to developing technology.

Decoding of satellite data transmissions started with Oscar 1 over 20 years ago, but it is only recently that persons other than radio amateurs have joined the small group of satellite enthusiasts.

Perhaps it is timely that the WIA should consider the growing interest in data transmission and be in a position to respond to the inevitable lobby, seeking an allocation of the radio spectrum for this hobby.

We welcome the new enthusiasts and will give them every encouragement to assist them to become radio amateurs, thus giving them the facility to access the satellites.

We are aware that several tertiary students in Melbourne have presented theses on the mathematics of orbiting bodies using our amateur satellites as examples. They have also written quite sophisticated computer programmes as an adjunct to their studies. Congratulations to those students whose papers were accepted by the authorities.

AMSAT-AUSTRALIA

Co-ordinator: Chas Robinson VK3ACR.

AR Notes: Bob Arnold VK3ZBB.

Correspondents: VK2RX, VK3KF, VK3KW, VK3YQX, VK4PJ, VK5HI, VK5AGR, VK7PF.

INFORMATION NETS

CONTROL: VK3ACR.

1000Z Sunday, 3680 kHz winter, 7064 kHz summer.

AMSAT-PACIFIC

CONTROL: JA1ANG.

1100Z Sunday, 14305 kHz.

AMSAT-SW PACIFIC

CONTROL: W6CG.

2200Z Saturday, 28880 kHz.

PREDICTIONS

For updated predictions for March listen to the weekly informations nets.

A DXpedition for satellite operation has been arranged by Ernie VK3DET during March and April this year.

Ernie will have gear for use with both Modes A and J and will operate from the following exotic locations in the Pacific:—

Western Samoa: 5W1DW, 3rd-8th March, 1982.

Nieu: ZK2, 10th-24th March, 1982.

Tonga: A35, 26th March-16th April, 1982.

Ernie will also operate on HF bands. Listen to the AMSAT-Australia net for updated information.

AMSAT-Oscar 8 continues to operate satisfactorily with good contacts via Modes A and J. The satellite's temperature is now falling from the high levels experienced during the past few months. This will increase the longevity of the satellite.

UOSAT-Oscar 9, as at late January, was not fully operational. It is understood that there has been some difficulty with the command antenna and potential operators are asked to be patient. Meanwhile information via the 145.825 MHz telemetry channel is received consistently, and on occasions the 435.025 beacon has been heard transmitting CW.

The most recent Russian amateur satellites, RS3 to 8 inclusive, are operating well

A dog would make a much more satisfactory pet if, instead of whimpering when a thunderstorm breaks in the middle of the night, it would tiptoe in and close the windows.

STOP PRESS

A spectacular end-of-season 2 metre opening occurred on Sunday, 31st Jan., 1982, when at 1005Z Ross VK4RO in Ayr started a sequence which resulted in him working the following stations on 144.100 SSB: VK5ZMJ, VK5AIM, VK5RO, VK5LP, VK5ZDR, VK5ZRO, VK5ZPS, VK5KEN and "half a contact" with VK5AVQ. Signals varied from around S3 to S9+ and the opening continued until about 1113Z.

At the same time Lloyd VK4ZYA in Townsville worked VK5RO, VK5AIM, VK5KEN, VK5ZRO and VK5KK. The distance to VK5KK from VK4ZYA would have been about 1860 km (1155 miles) and probably represents one of the longest ever all-land contacts on 2 metres to emanate from SA.

It seems likely the contacts were via Es. Although the signals from the same stations on 6 metres at the same time were S9, they were not of the strength one has come to expect when the MUF goes so high. There was a complete absence of short-skip stations, e.g., VK5 to VK3, but this may have been more a function that at the time no one would be on 6 metres in Melbourne anyway.

It was a big thrill for all concerned and once again indicates the end of January/early February is often a rewarding time on 2 metres to somewhere. With the running down of Cycle 21 we can expect a slight increase in this type of propagation for the next 5 to 7 years.

Tests were carried out by a number of stations on 432.100 MHz at the time the 2 metre signals were available but nothing heard.

SERVICE MODULES

Power Systems (Dr. Karl Meinzer, Univ. Marburg AMSAT-DL, Germany, Jerzy Slowikowski, UOS/AMSAT-UK)

Four solar arrays each of 408 2 x 2 cms cells fabricated by SOLAREX Corp. (USA) provide 28 watts each at a nominal 32 volts when fully illuminated. The total average power available from the arrays, allowing for sun angle and eclipse periods, will be around 17 watts. One of two redundant Battery Charge Regulators (BCR) regulates the solar array power to the 14V 6AH 10-cell NiCd battery with an efficiency of approximately 90 per cent, whilst the Power Conditioning Module (PCM) delivers regulated power supplies of +10V (1 per cent), -10V (5 per cent), +5V (5 per cent) with a total capacity of 10 watts and with an overall efficiency of about 87 per cent. The average continuous power budget available to the spacecraft electronics from the battery bus and PCM is around 11.5 watts.

The spacecraft consumes around 9.8 watts from the PCM when all experiments are operational with a further 10.5 watts from the unregulated battery bus. Power is distributed around the spacecraft through a central Power Distribution Module which, under the control of the Command System, provides switched power supplies to the various experimental and service modules whilst also allowing central telemetry monitoring facilities. The power switches exhibit resettable current fold-back in the event of malfunction.

Telecommand System (Dr. Marlin Sweeting G3YJO, UOS/AMSAT-UK)

Two modes of control over the spacecraft are available, with a repertoire of 66 latched, two-state commands:

1. Direct, real-time control of the spacecraft's functions by Ground Command Stations using one of two redundant VHF/UHF command receivers.
2. Indirect, stored-programme control executed by one of the two on-board microcomputers according to a "diary" loaded in advance from a Ground Command Station via the telecommand uplink.

Any valid command data emanating from the Ground Stations have an overriding precedence with any command data simultaneously issued by the on-board microcomputers. The primary computer (RCA 1802) has precedence over the secondary computer (F100L), unless otherwise instructed from the ground. The Telecommand uplinks also carry high-speed data to enable programme software and data to be loaded into the on-board microcomputers.

Antenna Systems (Tony Brown, UOS/AMSAT-UK, Dr. Mike Underhill, PRL, UK)

7-13-21-28 MHz Beacons Expt.: Centre-fed, "V" dipole of 2.5 metres each arm. Fed via a narrow-band matching network. Linear polarisation.

145 MHz General Data Beacon: 1/4 canted turnstile fed via 1/4 semi-rigid coaxial hybrid, l.h.c.p., + 3 dBi gain.

435 MHz Engineering Data Beacon: Same antenna system and hybrid feed as above operating on harmonic overtone. l.h.c.p., + 5 dBi gain.

2.4 GHz Beacon Expt.: 3.5 turn helix, l.h.c.p., + 6.5 dBi gain.

10.47 GHz Beacon Expt.: 4 turn slot helix, l.h.c.p., + 8 dBi gain.

All polarisations are given according to the IEEE definition. The circularity of the polarisation will tend towards elliptical at low elevation angles.

Navigation Magnetometer (Dr. Mario Acunia, AMSAT-USA, Christine Sweeting, G6APF, UOS/AMSAT-UK)

A three-axis, flux-gate magnetometer mounted on the upper (+z, +x) facet of the s/c wing will provide information on the orientation of the s/c in orbit by the comparison of measured earth magnetic field vectors with existing modes. It is anticipated that the navigation magnetometer will be able to determine the orientation of the s/c to within 2 degrees. Solar cells mounted on the top and bottom (+z and -z) facets of the s/c resolve the up/down ambiguity. The data from the magnetometer is available in real time through the telemetry system.

To be continued ■

960	JA7DY	994	G4AXD
961	JA7JULO	995	HM5LE
962	DJ7AT	996	VK6YL
963	KN6M	997	VK2HD
964	LA6OT	998	JA5PWW
965	A4XIH	999	G4BYK
966	JA1DSI	1000	VK5WV
967	JH6KXG	1001	UB5JR
968	JA4CTL	1002	UA6JAD
969	JA4AO	1003	UA1CY
970	JA8FBH	1004	UK2BAS
971	JA3GIY	1005	UD6CN
972	JH2QAY	1006	UKOFAD
973	DF4FO	1007	RA9CIU
974	JA2ALS	1008	UB5ZEL
975	DL3RK	1009	UA1DF
976	DJ2EA	1010	UK5IAZ
977	KB7SC	1011	UK3TBF
978	PA0EHL	1012	UB5HDX
979	JR1FYS	1013	UV9DT
980	PA0MA	1014	JA2CEJ
981	W7KTI	1015	JA1PS
982	K7CU	1016	OK2BUJ
983	PA0GT	1017	9V1TL
984	PA0TV	1018	K7SE
985	LU1SE	1019	WB6GFJ
986	YC1GJ	1020	ZS4CF
987	I2YBC	1021	GM3TDS
988	JH6SAK	1022	JH2RMU

WAS (VHF) AWARD

Cert.	
No.	Call Sign
144	VK3DU
145	VK2YSX
146	KG6JDX
78	VK3AKK (amendment) plus 17 additional countries

VHFCC AWARD

Cert.	
No.	Call Sign
108	VK3NM (52 MHz)
109	VK4ZSH (52 MHz)
110	VK5AN (52 MHz)
111	VK2BJC (52 MHz)

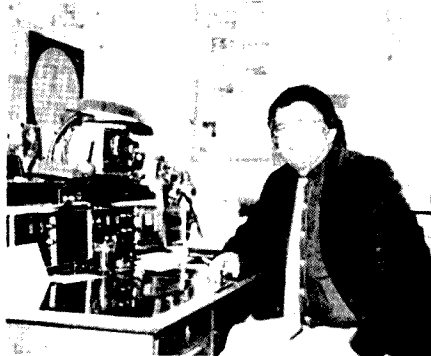
HAVKCA (SWL) AWARD

Cert.	
No.	Call Sign
54	W2-6893, Nathan Rosen.
55	L60036, Peter K. Dean.
56	L31345, Henry Wallis.
57	HE9OZH, Fri Zwingli.
58	UB5-073-389, Vlad N. Olejnik.
59	UA3-122-780, Kremnew Andrey.
60	UR2-083-913, Tahtla Hugo.
61	UA1-169-185, Victor I. Kotin.

DXCC — TOP LISTINGS (All at 275 and over)

PHONE			
Call Sign	Tally	Call Sign	Tally
VK5MS	318/360	VK6NE	297/304
VK6RU	317/362	VK3AKK	297/299
VK4KS	317/349	VK3AHO	294/326
VK5AB	315/345	VK2APK	293/313
VK6MK	313/350	VK4UC	293/306
VK3JF	308/320	VK6FS	292/294
VK6LK	307/321	VK3OT	292/293
VK4VC	307/318	VK5XN	289/302
VK4FJ	306/343	VK7AE	289/291
VK7LZ	306/323	VK3RF	283/285
VK7DK	304/319	VK6YL	283/284
VK4RF	304/314	VK7BC	280/283
VK3AMK	303/312	VK6IR	277/278

AWARDS COLUMN



Bill Verrall VK5VW
7 Lilac Avenue, Flinders Park, SA 5025

Here is a list of WIA Awards issued during the period 1st July, 1981, to 31st December, 1981, and the top DXCC tallies, new members and amendments as at 31st December, 1981.

WAVKCA AWARD

Cert.	No.	Call Sign	Cert.	No.	Call Sign
	955	K1BV		989	JA1ATF
	956	JA3HCN		990	DK7PX
	957	JA3MNP		991	LA2CQ
	958	JA2NYT		992	JH1NTG
	959	IT9YRE		993	OK1ABB

VK5WV	302/314	VK3DU	273/275
VK6HD	298/305	VK4BG	272/282
VK4PX	297/312	VK4DO	261/281
VK4AK	297/306		

CW

Call Sign	Tally	Call Sign	Tally
VK2QL	310/349	VK3YD	281/313
VK2EO	309/346	VK4RF	277/298
VK3YL	308/336	VK6RU	261/300
VK4FJ	302/345	VK3NC	261/297
VK3AHQ	299/331	VK3RJ	255/281
VK3XB	286/314	VK7LZ	253/283
VK2APK	283/304		

OPEN

Call Sign	Tally	Call Sign	Tally
VK6RU	317/362	VK4AK	297/307
VK4KS	317/353	VK7BC	297/301
VK4SD	317/348	VK3AKK	297/299
VK3YL	316/348	VK2SG	296/314
VK6MK	313/350	VK4UC	296/310
VK4FJ	312/356	VK3OT	295/296
VK4RF	312/336	VK3AHO	294/326
VK3JF	312/332	VK3XB	292/320
VK6HD	309/322	VK5WO	284/307
VK7LZ	307/339	VK5RX	282/313
VK7DK	305/320	VK2AHH	279/305
VK4PX	304/323	VK4BG	279/292
VK3AMK	303/312	VK4DP	278/287
VK2APK	301/329	VK4DO	269/296

DXCC — NEW MEMBERS

PHONE

Cert. No.	Call Sign	Tally
270	VK8NDN	100/101
271	VK6NE	297/304
272	VK3NXU	100
273	VK4FS	109
274	VK1MM	103
275	VK5ATA	141
276	VK2VRU	114
277	VK2DPN	201
278	VK3BDL	106/110
279	VK3DBV	100
280	VK5PS	107
281	VK5BW	106/110
282	VK5KOT	103
283	VK3BMA	108
284	VK2DPB	99/100

CW

117	VK3BLN	109
118	VK5ARA	102

OPEN

204	VK5MB	98/100
205	VK3QB	111
206	VK5UD	108

DXCC — AMENDMENTS

PHONE

Call Sign	Tally	Call Sign	Tally
VK2PY	173	VK5BO	151
VK3DS	201/207	VK5WO	254/272
VK3GB	211/229	VK5NVW	151
VK3BLN	253/254	VK6RO	209
VK3DFD	250/251	VK6AJW	239
VK3NLS	144/145	VK6NAT	204/205
VK4CZ	267/274		

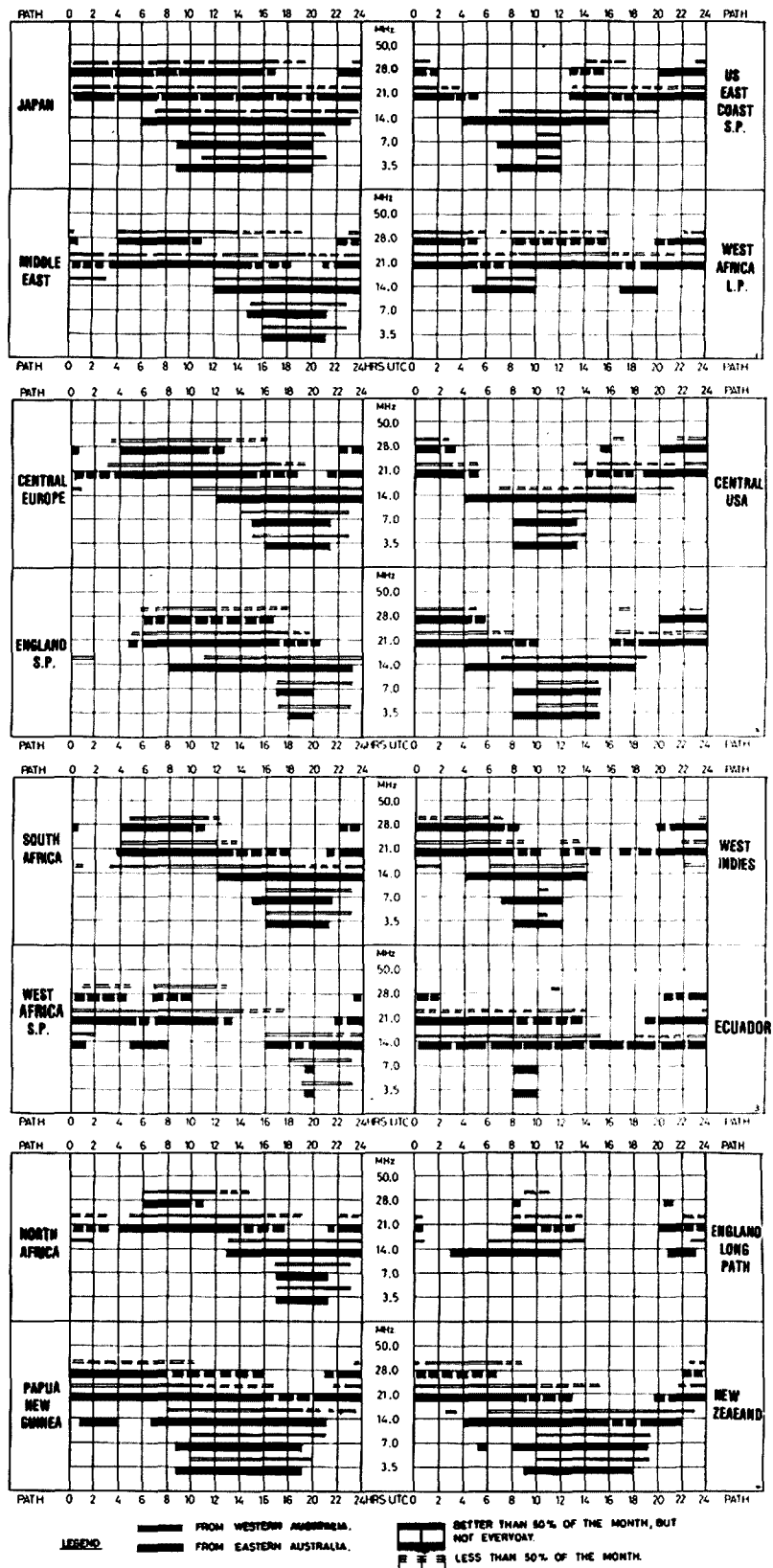
CW

VK3JF	222/237	VK5BO	161/183
VK4DO	208/232	VK7BC	149/151

OPEN

VK3AXQ	146/150	VK5BO	239/271
VK3BLN	257/258	VK5ARA	175
VK3NLS	158/159	VK6NAT	205/206

Len Poynter VK3BYE



LEGEND:
 — FROM WESTERN AUSTRALIA.
 — FROM EASTERN AUSTRALIA.
 [Symbol] BETTER THAN 50% OF THE MONTH, BUT NOT EVERYDAY.
 [Symbol] LESS THAN 50% OF THE MONTH.

Predictions courtesy Department of Science and Environment IPS Sydney.
 All times universal UTC (GMT).

HOW'S DX



Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138

Ten metres proved to be useful but erratic with some excellent openings at unexpected time, fifteen reliable with good pickings to be had for those that tuned around and twenty metres a little disappointing, but good QSOs were possible even with "Woody Woodpecker" trying his hardest to get into the act without an invitation.

An interesting experiment was carried out with a DL station who reduced power from one kilowatt in gradual steps to five watts. Signal strength naturally deteriorated ending up around 5 by 6 and unfortunately he could not go lower in power. This was on ten metres with little or no QRM which is typical in this part of the amateur spectrum. It was apparent that very few VKs even check this segment of our allocation let alone use it, according to the demand when the QSO was completed, so for that elusive country or zone check ten metres at regular intervals, you could be pleasantly rewarded.

GENTLEMAN'S AGREEMENT

The novice CW operator who operates fifteen metres is getting a poor deal due to some inconsiderates who classify themselves after passing the examination and gaining a call sign, as amateurs. Paul S. Segal, who wrote the Amateur's Code, quoted "The Amateur is Gentlemanly — he never knowingly uses the air for his own amusement in such a way as to lessen the pleasure of others". Unfortunately these "irresponsible button pushers" are violating a "GENTLEMEN'S AGREEMENT" which has existed for decades by infringing into the CW segment of the band. When reminded of the agreement, some openly declare that they are not gentlemen (this is already apparent by the tone of the conversation), refuse to QSY to allow the novices to work prime DX in their 25 kHz of the band and continue on with their "trivia". This creates a very poor image for all VK amateurs as well as depriving the enthusiastic operator of improving his or her skills to pass the exam and upgrade their licence.

Unfortunately, some of the fraternity because they have obtained unrestricted privileges refrain from being associated with someone who is only permitted to legally radiate low power, as if they may

contract some contagious disease. Never would it enter their mind to assist them with their operating technique, Morse speeds, a rare DX station or most importantly, encourage them to upgrade. Novices comprise some 26 per cent of calls issued in this country, as against approximately 19 per cent in the USA, where it is believed integration between different levels is harmonious, the accent being placed on education and encouragement.

Fellow amateurs, how can we assist the majority of novices to enjoy the unrestricted privileges we take for granted?

Please don't put it in the too hard basket or leave it to the amateur down the street because it is our responsibility.

TN8 AGAIN

Popular amateur Jorg hoped to be back in the Congo Republic again using the call TN8AJ. Jorg has been active from this area over quite a period now and has accommodated many VKs with a new one through his manager Y25LO (DM2XLO).

Jorg has the privilege of being able to run one kilowatt and uses a dipole 5 metres above ground level for transmitting. The receiver is serviced by a long wire at the same height but 17 metres long. With this set up the DX score is 185. It has been said certain prefixes are worth a hundred countries and this proves it!

7Q7 AND 5H3

To abide by their wishes it would be advisable to refrain from indicating in any form that the correspondence is from or pertaining to radio on the outside of the envelope and opaque paper surrounds the card, return envelope and IRCs or "green stamp" (preferably the latter) as they can be cashed or traded with a minimum of fuss that apparently arouses less suspicion. Personally it is felt that an honest and reliable QSL Manager would be the best route.

ZD9 TR de C

ZD9BV (this will bring them out of the woodwork). Uli DK2OC advised members who join his excellent net that ZD9BV has equipment on the island and will take up his appointment as Postmaster this month. A good bet for that much wanted country would be to monitor Uli's net on 10m. For the successful the QSL route is via John W4FRU.

JABAL AT TAIR

Jabal Island will be activated by four French amateurs commencing the 17th of April. All bands 80 through 10 metres will be used and both CW and SSB enthusiasts will be catered for. If you are successful, QSL to W6ATQ (call book QTH 1980 onwards).

C31 ANDORRA

Gordon VK2DGS, who used the call C31WW whilst in Andorra is ready to commence the task of replying to all those QSL cards when the logs arrive from the UK. Gordon writes that cards will be replied to "starting with those who have so kindly sent IRCs (or bank notes), then those who have sent SASEs followed by those that have not. Eventually I hope to

collect QSL cards sent to the 'buro' and these will be answered in time."

Evidently all was not plain sailing in C31, as some of the locals stole and destroyed a generator belonging to a French amateur, sugar in the petrol and graphite in the oil of another generator belonging to C31LM.

Now, who would like to go to Andorra for a "Hamming Holiday"?

PHILATELIC FRIENDS

Have you got a DX friend who collects stamps? I have many and they are delighted with two free bi-monthly colour magazines which are produced by Australia Post and air mailed direct overseas at no cost.

One magazine previews future issues of VK and Pacific area stamps whilst the other contains general and historical information about Australian issues. For further details contact in writing the Philatelic Mailing List, PO Box 259, South Melbourne 3205.

A DL DXer

DXing in Europe has its problems, especially trying to get through the pile-up on that rare one, but Tom DL5BAN seems to get the contact he wants without too much hassle and he has built up an impressive total in a short period.



Tom DL5BAN

Tom, who is sixteen, became interested in amateur radio through his father, DK4BW, who has been licensed for many years. Tom got the "bug" and encouragement from his father for him to share his equipment eventually allowed a new call sign to be heard in mid-1980. To date Tom has worked 277 countries and with only 191 confirmed dwells on the postman's visit each day.

DXing is limited due to his eleventh year studies which, as Tom says, "Are on schedule but it is a bit hard to get my priorities in order at times because I am very keen on joining in on a quick game of basketball or soccer and probably the DX bands would come first".

Tom, with his Dad, uses an FT101E, SB221 linear and a four element quad on 10, 15 and 20 metres, whilst a Delta-loop is pressed into service for 40 and 80 metres.

Tom's greatest experience was being a guest of WB0ZLH when they went mobiling from Missouri to California, visiting many "Hams" en route for an "eyeball QSO".

In Tom's words "this is where I learnt what the amateur spirit and hospitality was all about and the memories and friendships made will stay with me for many years to come".

DP0LEX

New prefix! New country? The Federal Republic of Germany postal authorities have issued the call sign DP0LEX to meteorologist Josef DK6RK for his stay at the Federal German Antarctic Base situated at Ataka Bay (for those with an atlas the co-ordinates are 70° 37' S, 8° 22' W). The IARU R1 News states in the report that "enrolment in the DXCC country list has been applied for". We wonder?

OOTC

The Old Old Timers' Club was founded in 1947 by Hubert Ingalls W1NQ. for eligible "veterans" who had been associated with amateur radio for 40 years or more. Originally there were 13 members but by the end of 1948 the membership had expanded to 41 members. It has grown to a membership of some 2000 participants representing all continents.

VK has been ably represented in the Club by Mrs. Austine Henry VK3YL, Austine has now been unanimously appointed an Assistant Director of the Club for the Southwest Pacific area in recognition of being a long-time supporter of the Club and her contribution to the hobby.



Austine VK3YL

Austine is well known for her adeptness with the key for over half a century and her dedication to chasing the elusive DX at unearthly hours of the day and night. In recent years Austine has interspersed her operating to include SSB, a transition which has gained her a place on the ARRL DXCC Honour Roll.

Most of Austine's exotic prefixes were worked from a multi-band dipole and it is only over the last couple of years that a triband beam has been used to direct the signal. The present day equipment in a comfortable, well appointed shack decorated with prestigious awards and photos of old friends, consists of a Drake TR7 into a FL2100 linear with an ATU in line to the antennae. Back-up is taken care of by the use of an 820S. Of course the original hand key is always at the ready.

Congratulations Austine on the honour which has been bestowed upon you. Any

reader with 40 or more years experience who wishes to climb "off the shelf" and join the Old Old Timers' Club should contact Ray Meyers W6MLZ, 717 Anderson Way, San Gabriel, California, 91776 USA.

LATE TIPS

EL2HA has a sked each Saturday, 14.155 MHz at 8.30 UTC.

TR8DX every day, 14.220 MHz at 16.00-18.00 UTC.

VP2MH due from Navassa 15th March. Try Caribbean net.

4U1UN, CW operation only. Should be on now. Good luck to the CW enthusiasts.

MANAGER CHANGE

Alen VP2MM wishes to advise he has changed QSL managers. The new one is AB1U, address as per 1982 Call Book.

Ron LU5ZI, operating from South Shetland, advises his QSL route is via LU2A, Reinaldo J. Szama, C Correo 100, Suc 28. 1428CF, Argentina. (A green stamp plus an addressed envelope would be appreciated.)

The husband and wife team (pictured) of VE2AFU and VE2ABX makes for harmonious operation. Cora, "Chief Operator", does all the talking, whilst OM Rudi, "Sparks", is chief maintenance man.

Sincere thanks for this month's contributions go to VK1CC, VK3s PA, UX, VU, YL, BOE, CIF, DFD, VK4KA, LX, VK6s HD, IH, NE, XI and SWL L30042.

Good DXing and 73.

LISTENING CW WITH ERIC L30042

This month Eric has forsaken all others for the new 10 MHz band and has had a very enjoyable and busy time.

For the three week period Eric has logged 200 different CW stations, located in 23 countries on five continents.

The new band appears excellent for daytime interstate but not so productive DX-wise at night. Nevertheless excellent signals have been picked up from both interstate and overseas, with the overseas peaking around 07.00 and 19.00 UTC.

Eric has found the most popular CW frequencies to be around 10.105 and 10.115 MHz.

The most exotic DX heard by Eric was C6ABA, N7ET/DU6, EA6AU, FK0VU, LK1PD, P29DH, YJ8VU, ZS6ANW, 4U1ITU and 9K2DR.

QSLers OF THE MONTH
3D2FJ, 6Y5YL, 9X5SL, A35FB, C21NI, C31NM, EA9HG, FK0AD, HC4WA, KC6YC, KH3AB, SV0AA, T3AF, VP2MM, VP9HM, XE1FX, ZF2BN, ZS5KI.

OSL ADDRESSES

- 5H3BH — Box 4356, Dar Es Salam, Tanzania.
- 7Q7LW — Box 24, Mtaka Taka, Malawi.
- 9X5MH — Box 491, Kigali, Rwanda.
- A4XCB — Box 8530, Salalah, Sultanate of Oman.
- A4XHI — Box 8530, Salalah, Sultanate of Oman.
- A4XHZ — Box 8530, Salalah, Sultanate of Oman.
- A4XIW — Box 8530, Salalah, Sultanate of Oman.
- A4XIY, 16 Potter Street, Black Rock 3193, Australia.
- E8AAU — Box 821, Las Palmas, Canary Islands.
- KC4AAD — USRS Box 300, FPO, San Francisco 96602, USA.
- SU1CR — Reda 50, Khedr Eltoony Street, Nasr City, Cairo
- SV5YU — Box 749, Rhodes, Rhodes Island.
- TA1CT — PO Box 902, Istanbul, Turkey.
- VP8ANT — Box 146, Cambridge, England.
- YASME — Box 2025, Castro Valley, California 94546, USA.

Y11BGD — Box 5864, Baghdad, Iraq.
YJ8NSW — PO Box 208, Ringwood 3134, Australia.

QSL MANAGERS

Managers shown in brackets.

3C0AC (N4NX)	TA1KS (G3SCP)
3C0BC (K4PHE)	TL8RC (F6EZV)
3D2RF (VK3VU)	VK9YA (VK5QX)
4K1A (UA3AJL)	VK9YB (VK5OX)
5NOKUY (J11M1)	VK9ZH (VK6YL)
9U5WR (SP6FER)	X25A (JA8BMK)
9X5SL (OL8DF)	X29A (JA8BMK)
KV4AA (K6PBT)	ZD9BV (W4FRU)
OD5RZ (VE5QY)	

SSB WORKED ON THE WEST COAST

10/CR9AN, 10/FY7BY, 10/J3AH, 10/JX6BAA, 10/M1C, 10/M1V, 10/TR8LJ, 10/VK9ZH, 10/Y11AS, 10/ZD7BW, 15/707LW, 15/8P6OR, 15/VK9ZH, 20/4K1A, 20/HH2JD, 20/HK0FBF, 20/HZ1TA/CNB, 20/KOAN, 20/TA1CT, 20/VP2MH, 20/W6QL/8R1, 20/ZL40Y/A.

SSB WORKED ON THE EAST COAST

15/3B8CA, 15/4U1UN, 15/9N1BMK, 15/A4XHZ, 15/CR9AN, 15/EA9JV, 15/LU5ZR, 15/VK9ZH, 15/ZP5MJV, 20/5H3BH, 20/6Y5MJ, 20/9X5SL, 20/A71AU, 20/A9XDO, 20/A9XP, 20/CN8AT, 20/EA6DW, 20/EL2HA, 20/FR7ZN, 20/HS1AMO, 20/HV3SJ, 20/TR8DX, 20/TU2RL, 20/UF6FFF, 20/UG6GAF, 20/VP2KT.

Faces Behind the Key and Microphone



Cora VE2AFU



Rudi VE2ABX

The WIA Book

What is it?

VHF-UHF AN EXPANDING WORLD

Eric Jamieson, VK5LP
Forrester, S.A. 5233



52.510	ZL2MHF — Mt. Climie
53.000	VK5VF — Mount Lofty
144.400	VK4RTT — Mt. Mowbullian
144.420	VK2WI — Sydney
144.475	VK1RTA — Canberra
144.550	VK5RSE — Mt. Gambler
144.600	VK6RTT — Carnarvon
144.700	VK3RTG — Vermont
144.800	VK5VF — Mt. Lofty
144.900	VK7RTX — Ulverstone
145.000	VK6RTV — Perth
147.400	VK2RCW — Sydney
432.410	VK6RTT — Carnarvon
432.440	VK4RBB — Brisbane
432.450	VK3RMB — Mt. Bunningyong

* Indicates a new beacon listing.

A message from VK7KJ indicates the VK0WW beacon has been re-activated after some years of silence and is running low power and has been heard in Tasmania occasionally. It is understood to be operated by Alan VK0AM but he has no 6 metre gear to support the operation of the beacon.

SIX METRE SUMMARY

I asked John VK5ZBU for an outline of how he saw 6 metres over the past few months, and here is his report:—

"September started things off, but not with any of the exotic signals expected, mainly openings to JA and most call areas, with some very strong signals. Similar pattern for October, when the solar flux again approached the 300 mark, but most activity seemed to have been confined to the northern hemisphere; viewed from VK5, not really an exciting period!

"November saw the beginning of what appears to be a return to the mid-cycle or, as some say, the mid-hertz type of propagation. Signals from most States began reaching VK5, back scatter was prevalent, with all States being available (except VK8) on 17/11. On 18/11 Bob VK6BE heard two VK5 stations on 146.540 discussing 28 MHz antennae, the FM signals did not last for more than a few minutes. During the latter part of November JA signals were very strong and lasted for some hours, also TV signals were being heard from a number of areas. (Even the "Pirates" were in evidence!) PY0 was reported by VK5ARZ on 50.125 and Andy VE1ASJ worked Bob VK2ASZ, no further details. An interesting aspect of recent openings has been the re-appearance of a number of stations not heard for some years; having re-discovered "six" they appear to be enjoying themselves.

"With the coming of December came the good contacts 'across the pond' to ZL. Along with the regulars came many new call signs, which it may be expected will increase, with the change of regulations in ZL allowing stations previously operating but not permitted on 52 MHz to be heard. Some administrations learn fast!

"An interesting contact with the Boulder, W.A., area was with Bill VK6ZX and Dianne VK6KYL, making their first 6 metre QSOs and were loud and clear into Adelaide using low power and a quad looking the wrong way and not rotatable! An ominous

sign that 'Hertz-21' may be going "that-away" is noticeable in the return of VK6 and VK7 signals plus more recently VK8 Darwin and, of course, the lack of more distant signals. As the sun sinks in the west, one may reflect on what may have been achieved had we been able to work 50 MHz as acknowledged members of the world!" Thanks, John.

WORKED ELSEWHERE

The latest news from Bill W3XO of QST's "The World Above 50 MHz" is a ripper! What we here in Australia have missed out on is just incredible. We have missed out not only because we cannot use 50 MHz but propagation conditions have certainly not favoured the southern hemisphere anything like what has occurred in the northern hemisphere, plus the fact that there are more active stations in countries closer together than down here. Anyway, having got that off my chest, let's have a good look at what has been going on in the north.

Bill W3XO writes: "The DX fireworks continued crackling up to the time this is being written, 10 days before Christmas. In fact, some of the events transpiring during this period can probably be classified as bombshells. One example of such extreme pyrotechnics are the November 17 contacts by VE1YX and VE1ASJ with VU1AID in Bombay. This shocker took place about 1450Z with Bob and Andy's antennas aimed a few degrees east of north, which should be about the normal path to India. Three days later G5KW completed a crossband QSO with VS6BE over the long path. Ken first heard the Hong Kong station's signal at 1050Z and it remained audible for about an hour. On Monday, November 16, beginning about 1730Z, a number of the east coast gang not at work were treated to an opening to American Samoa with AH8A holding down the fort on that end. K1HTV/3, near Washington, was one of the fortunate ones on that occasion. All this took place as the 10.3 cm solar flux was declining from 196 on the 15th to a low 154 on the 24th.

"Despite the declining numbers, the period between November 8 and 20 will long be remembered by 6 metre DXers. It was during that time that C5AEH was activated by W6JKV and N6BFM. Using an IC-551D into an SB-200 modified for 6 metres and a 32 foot boom KLM, Jim and Bob completed some 1500 QSOs with approximately 900 different stations in 29 countries during their stay in The Gambia, West Africa. This includes a number of crossband contacts with a baker's dozen European countries not having the blessing of 6 metre operation. One of the high spots for them was November 15, when they completed WAC in a little over 6 hours. A contact with KG6DJX took care of Oceania. (Personally I think that is stretching things a bit to claim WAC on the basis of that contact, after all Australia is really the sixth continent whether you like it or not . . . 5LP.) VS6BE represented Asia and one of the few Europeans authorised 50 MHz operation SZ2DH, the special 6 metre

VHF/UHF BEACONS

Freq.	Call Sign	Location
50.005	H44HIR —	Honiara
50.008	VS5VHF —	Natal, South Africa
50.020	JA2IGY —	Mie
50.023	GB3SIX —	Anglesey
50.023	HH2PPR —	Haiti
50.025	6Y5RC —	Jamaica
50.035	ZB2VHF —	Gibraltar
50.036	HC1JX —	Quito
50.038	FY7THF —	French Guiana
50.040	WA6MHZ —	San Diego
50.048	VE6ARC —	Alberta
50.050	ZS3E —	South Africa
50.062	PY2AA —	Sao Paulo
50.070	YV5ZZ —	Caracas
50.080	TI2NA —	Costa Rica
50.088	VE1SIX —	New Brunswick
50.100	KH6EQI —	Pearl Harbour
50.498	5B4CY —	Cyprus
51.022	ZL1UHF —	Auckland
52.013	P29SIX —	New Guinea
52.150	VK5KK —	Arthurton
52.160	VK0WW —	Macquarie Island *
52.200	VK8VF —	Darwin
52.250	ZL2VHM —	Palmerston North
52.300	VK6RTV —	Perth
52.320	VK6RTT —	Carnarvon
52.330	VK3RGG —	Geelong
52.350	VK6RTU —	Kalgoorlie
52.370	VK7RST —	Hobart
52.400	VK7RNT —	Launceston
52.420	VK2WI —	Sydney
52.425	VK2RGB —	Gunnedah
52.435	VK3RMV —	Hamilton
52.440	VK4RTL —	Townsville

call for SV1DH, provided that continent. With FY7AZ for South America, EL2AV for Africa and, of course, numerous Ws and VEs to fill the blank for North America, the sweep was complete. Speaking of Ws, C5AEH made contacts with 'all States except KL7 and worked around a hundred 6s, some as early as 5.30 a.m. California time.

"As an illustration of the consistency of 50 MHz propagation to a number of parts of the world, at least during the time of their stay, many stations and areas were contacted every day while the operation was in progress. Prime examples of this are G5KW (crossband), the Caribbean with 9Y4LL, 8P6KX, DL3ZM/YV5 and the FY7-THF beacon all prominent, and the New England/Eastern Canada area with VE1YX worked every day. Daily contacts with Ecuadorian stations were completed and HC8VHF was worked many times. KG6DX and KG6JDX were worked on three successive days. Who would have thought 6 metres could display such results over these long haul paths? Let's hope this behaviour is taken into account when the powers that be in the various countries consider using this part of the spectrum for government or commercial communications or broadcast applications. The 6 metre gang owes a debt of gratitude to Jim and Bob for a fine job of organizing and operating. One aspect of their operation that was especially helpful was their near continuous use of 28.885. Jim is considering the Pacific for his next jaunt. I will keep you posted when definite information is available.

"EL2AV and EL2FY also continued to provide African contacts. One big day for this was November 22, when EL2FY worked Ws from 1 through 0 call areas. Incidentally, QSLs for Saitoh now go to JA1BGS. Another station putting that continent on the map is ZS3AK, who have been there many times to hand out South West African 6 metre QSOs, and thus somewhat relieving the load on ZS3E.

"November 29 brought a welcome sound for many of us who have been trying to work ZD8TC for over a year. Early that evening, about 2200Z, probably because of the link-up with Es and TE, Ted's weak and fluttery but readable signal poked its way through to the east coast. As a result, a number of us have a new country that many had given up expecting to get. Cards for ZD8TC go to N2CW.

"The first weekend in December brought much higher flux numbers, with the 10.3 cm reading reaching 270 by the 6th, and the pick-up in conditions was quite noticeable. The mornings saw much 6/10 metre activity to Europe with the appearance of HA6NN, CT2EE and HB0QQ/P in Liechtenstein livening up the action. HB9QQ had made a special trip to a snowy mountain-top in that tiny principality just to provide North American 6 metre operators with a rare crossband country. The afternoon brought transcontinental openings with many signals well over S9. VE8BY was also doing a land office business. On the 8th one of those bombshells

referred to earlier burst with a bang. VE1ASJ, who holds the title of North American 4 metre champion, did it again. This time Andy contacted five stations via the 6 to 4 metre crossband route, beginning around 1340Z. He worked EI6AS, EI6DT, G3APY, GW3MHW and G2AOK. All 70 MHz signals were quite weak, around 329 to 339. Congratulations are certainly in order to all who took part in these historic VHF contacts. As of this writing, we are still waiting for a US station to succeed in making a 6 to 4 contact. The afternoon of the same day brought KG6DX and KG6JDX into the east coast with a number of stations making the grade. The following afternoon KH6IAA was in, providing the last State for a few more 6 metre operators.

"The final weekend of this reporting period, December 12 and 13, also produced super conditions with many notable contacts being made. Saturday evening brought a strong JA opening to the west, with stations as far east as Albuquerque taking part. In addition to the many JAs available, W6UXN reports nabbing VS6BE, HL2JD and the Okinawa stations JR6RPW and KA6OR. The following day TF3T, the new call sign for TF3SG, experienced a many-hours opening to the US, working stations from coast to coast. When last heard Sveinn was attempting to work KL7. ZB2BL was also making it all the way to the west coast.

"As if to add an additional dash of spice to the feast provided by the F2 layer, Es made its usual winter return. For some of the newer 6 metre operators accustomed to the longer skip, it made for some unusual distances, and provided a few new "hard to get" States.

NEW COUNTRY

"Another country should be on 6 metres by the time this appears. J88AR St. Vincent in the Caribbean, is to get the Swan 250 and associated gear originally intended for HC8VHF. From that location it provides the opportunity of a new country for most of the 6 metre gang via both F2 and Es." Thanks, Bill for that lot, you lucky devil!

VK AND ZL ACTIVITY

And that means the Southern Hemisphere and 52 MHz. The month of January certainly saw many very strong Es openings throughout the country, including ZLs again. Lots of VK7s, a fair amount of VK6s and VK8 in Darwin from time to time. These plus the usual VK2 and VK4 contacts. VK3 mainly backscatter. David VK5KK noted in contact with Steve VK3OT on 9/1 at 00.08Z signals 5 x 2. Steve's beacon is audible even at the 5LP establishment most of the time, many times weak and fluttery, but there. 21/1: H44PT 5 x 9 at 0630Z to VK5KK, noted he was also getting into VK2, 3 and 4. Peter has apparently now worked 44 countries on 6 metres, which is a very good effort and again shows the advantages of having 50 MHz.

ON OTHER BANDS

While all the general activity appears to be going along on 6 metres, that's not really so! There are a few experienced operators who keep an ear on 2 metres when conditions are ripe, and are often rewarded for their efforts. Last month I reported the contacts from VK5 to VK2 on 144.100 SSB and via Es. Well, that's not all. On 4/1/82 Col VK5RO was heard by Brian ZL1AVZ at 0015Z on 144.100. At 0020Z VK5RO heard ZL1BJB on 144.100. None of the operators were able to make a two-way contact out of the conditions, but apparently they were there, as also later in the day at 1511Z when a ZL1 was heard on 2 metres. At the time of these hearings 6 metre signals were very strong between the two countries. Given another couple of years then the Es conditions will really start to shine on those sort of contacts.

On 9/1 another set of good conditions existed. Mick VK5ZDR had quite a ball working VK3s on 144.100 and then went shopping as the band started closing to VK3, but only to open a few minutes later to VK7, and Col VK5RO, again to the fore, worked VK7ZAH at 5 x 9 around 0015Z for about half an hour! Peter VK5ZPS also in on the deal. 5LP was also out shopping!

David VK5KK got all inspired, too, and fired up on 432 MHz on GMT day 9/1 and between 2115Z and 2235Z heard the beacon VK3RMB on 432.450, mainly weakly. He also worked VK3BKF at 5 x 5 on 144 and 5 x 1 on 432 around 2235Z. Also worked VK5DK at 2355Z.

It seems 16/1 would have to be a red letter day for the VK5 gang. Chris VK5MC of EME fame in the south-east of SA from 1100Z onwards worked on 432.100 SSB: VK5RA, VK5ZRO, VK5ZRG, VK5ZMJ, VK5KK, VK5LP, with signals over S9 in most cases. And it's quite a long haul from VK5MC to VK5ZRG, who is at Whyalla, and nearly as far to Jim VK5ZMJ, at Port Pirie.

Not content with 144 and 432 contacts, Chris then turned on the 1296 gear and was eventually able to work David VK5KK on that band after he took the spiders out of his gear, around 1345Z, with signals 5 x 9 both ways. Chris was using his 20 foot dish with 120 watts and David a 3 foot dish 8 feet high with 8 watts. Good going, chaps! Chris VK5MC believed also to have worked Les VK3ZBJ crossband 1296 and 432, plus another VK3 unknown.

That's not all for that weekend. Wally VK6KZ decided to go to a conference, etc., in Tasmania about that time, and what would you expect? He took some gear with him. So in the early evening of 16/1 he's on from Smithton up on the north-west point of Tasmania. A phone call gets 5LP and others on the band looking for him without success, although Wally has been hearing and working some VK3s, etc. The next morning is still 16/1 by Z time, so it's back to the band to see what is transpiring. In the meantime Colin VK5HI and others had been working Wally through the Adelaide channel 8 repeater. Mick VK5ZDR latched on to Wally on 144.100 SSB around

Join a NEW MEMBER NOW!

AROUND THE TRADE

2220Z, followed by VK5LP at 2226Z with signals averaging 5 x 5 but some peaks to 5 x 7 which is pretty good considering the 10 watts and small antenna Wally was using. So the exercise was well worth the effort. Whilst there Wally checked for the VK7RTX beacon about 100 km away, and announced it to be on 144.900 + 800 Hz, so that's pretty close to what it ought to be!

The almost daily contacts on 432 MHz between VK5ZRO, VK5ZMJ, VK5ZRG, VK5KK, etc., using their pipeline are helping to keep the band alive. Despite the S9+ signals into Bob VK5ZRO, they still don't get to the 5LP establishment through the 60 dB hill for any workable contacts from Jim VK5ZMJ at Port Pirie and Don VK5ZRG at Whyalla, the path is just too difficult.

6 METRE CONTEST

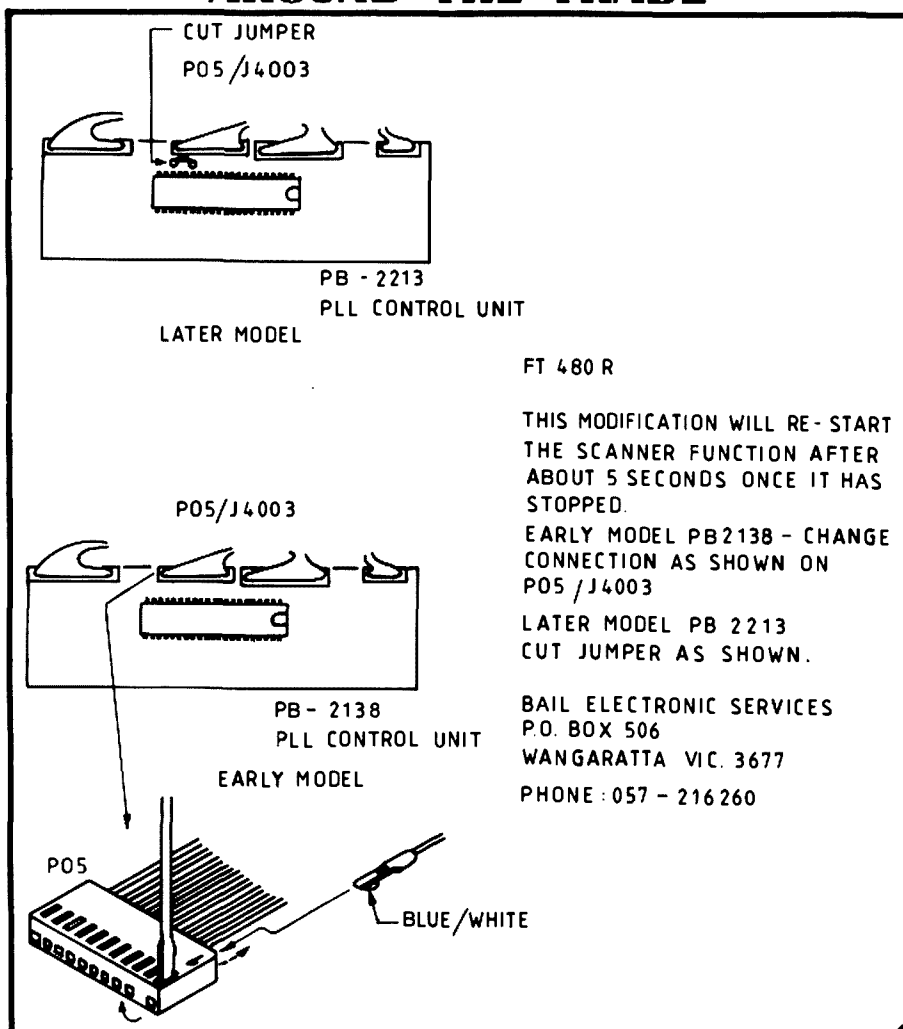
You might like to have a go in this somewhat strange contest organised by the Kyoto 6 Metre Club, details of which were sent to me by Bob VK5ZRO.

JA-VK 6 metre contest. (1) Eligibility: All 6 metre licensed amateurs of Japan and Australia. (2) Object: To cultivate mutual friendship and to raise the activities on 6m band. (3) Period: 0000Z 12/3/82 to 2400Z 21/3/82. (4) Frequency and mode: 52.0-52.5 MHz, CW, SSB and AM. (5) Exchange: Signal report and district, i.e., District JA . . . Prefecture; VK1-8 . . . Province and Territory; JD1, VK9 0, LH . . . Country. (6) Scoring: VK: (the number of QSOs with JA) x (their last letter, max. 26 for A-Z) x (call area, max. 10 for JA1-0). JA: (VKs) x (A-Z) x VK1-8, except 9 and 0). (7) Reporting: A: Log (free style) should indicate date and time in UTC, calls, complete exchange. B: Dupe sheets are required if more than 300 QSOs are made. C: An accompanying summary sheet must list the total number of QSOs and two kinds of multipliers. D: Entries must be postmarked no later than (no date given, but 3 weeks after end of period would seem reasonable . . . 5LP). Send to Kyoto 6m XX Club, C/- K. Kawamoto, 354-8 Kotokuji, Teramachi-Kuramaguchi, Kamigyo, Kyoto 602, Japan. (8) Award: The high scoring stations in each call area of JA and VK. (9) Results: Entries who desire all results enclose 2 IRC plus SAE. (10) Miscellaneous: An exclusive log sheet and summary sheet . . . 2 IRC plus SAE to above QTH." Well, how about that? Over to you!

There seems little else to say this month except that the equinox is almost upon us and on and off for the next three months perhaps we may be lucky enough to share in propagation improvements to allow us a final fling on 6 metres, with probably April and early May offering best opportunities from 2200 to 2400Z and 0700 to 0900Z. Good hunting!

Closing with the thought for the month: "Children need love, especially when they do not deserve it."

73. The Voice in the Hills. ■



DECOUPLING RADIALS NOW AVAILABLE FOR 2 METRE RINGO

GFS Electronic Imports of Mitcham, Victoria, has just announced the availability of a set of DECOUPLING RADIALS to suit most types of 2 metre extended ringo antennas.

It has for some time now been widely publicised, particularly in US magazines, that an improvement in performance can be gained by introducing a set of decoupling radials below the ring matching section of gamma ring type verticals.

With this in mind GFS has made available a kit, the Model RK-2, consisting of four solid aluminium radials and a mounting ring which can be easily installed on an existing 2 metre ringo installation.

The RK-2 is suitable for use on masts up to 27 mm diameter, and is priced at \$16 plus \$3 post and packing. It is currently only available directly from GFS Electronic Imports, 15 McKeon Road, Mitcham, 3132, Victoria. Phone: (03) 873 3939, or Telex: 38053. ■

Quad versus Yagi

Two detailed articles in "Ham Radio" have raised again the long-standing controversy of quad versus yagi, and have cast considerable doubt on the validity of some of the pro-quad arguments that have held sway during the past decade.

In summary they provide convincing support for the view that a two-element quad can be roughly the equivalent of a three-element yagi (both in practice provid-

ing up to about 6 dB forward gain), but suggest there is little or no basis for the belief that three- and four-element quads are correspondingly superior to a yagi array, or that the quad form of structure automatically provides an additional 2 dB forward gain. Nor, it would seem, is it true, as so often stated, that quad arrays provide better low-height performance than yagi arrays. ■

What to do in 1982

(or what didn't you do in 1981)

Our hobby is currently faced with a number of threats to its continued existence in its current form. Some of these have been around for a while and some will always be with us. Examples would be WARC's new Acts and Regulations, new technology (e.g. cable TV), Government/DOC attitudes.

We, as WIA members, club members and as individual amateurs must consciously act to meet these threats so as to minimise their effect and to even turn them to our advantage. It is at this time of the year that we should start to plan our activities for the coming twelve months and beyond. Spend a few minutes reading this article and then looking critically at your activities.

There would appear to be six separate areas of endeavour that we should address. Let us look at them in turn.

1. REGULATORY

We should be trying to achieve a higher level of responsible self-regulation. How? Perhaps through self-discipline firstly and then through such combined activities as Amateur Advisory Committees and the Intruder Watch Service. We have all heard various abuses of our privileges — what are we going to do about it? Additional deregulation depends on how successfully we can demonstrate our capability to handle what we have already. Perhaps then we can hope to cope with extra responsibilities of third party and phone patch privileges.

2. TECHNICAL

The ITU definition of the Amateur Radio Service mentions "experimenters". Do we fit the bill? Despite assertions to the contrary, we all do in one way or another. Many, for example, build antennae, monitor propagation, build test equipment, cure EMC problems, etc. Perhaps we can do more — why not look at VHF/UHF techniques, different modes, Project ASERT or other such activities. Think about it, then ACT.

3. EDUCATIONAL

It is essential that we firstly establish and maintain an adequate entrance level to our hobby. This done we assist people to reach this level and then progress past into other areas (compare with "post-trade" courses). Whilst technical education is essential, we should not forget "social" education, i.e. how to behave on the air, how to QSL, etc.

4. INTERNATIONAL

The WIA nationally looks after our interests by being involved with WARC, ITU, IARU, etc., so how can you help? By making friendly contacts with overseas amateurs

you expose them to our lifestyle and personalities. Don't you be the one to let the side down.

5. PUBLIC SERVICE

We should always be ready to use our resources and training to assist the community in time of need. We need to "be prepared". How? Through WICEN groups and perhaps making use of third party privileges to taste. We must strive to improve public awareness of our hobby — not to gain members but to increase their understanding and perhaps tolerance (e.g. TVI, tower problems).

6. MEMBER SERVICE

On the surface this is the responsibility of the WIA and clubs. On reflection, however, it is obvious that the individual must contribute as well as receiving service. How do you support your club — actively or passively? **You will never get any more out of the WIA or your club than you put into it.** Are you ready to start giving? As well as providing State, National and International representation, the WIA offers Bookshop and QSL services, information channels (news, nets, AR), a technical forum (AR), as well as many social activities (awards, contests, conventions, etc.).

CONCLUSIONS

The WIA, clubs and individual amateurs (you and me) must strive to be active in these areas. It is not sufficient to merely play lip service or to over-emphasize one area to the detriment of others. Our approach must be balanced and considered. In this way we can effectively meet the threats facing our hobby over the next decade or so.

It is squarely on us as individuals, club and Institute members — "How do you measure up?" and perhaps more importantly "What are you going to do about it?" — From "QTC", VK4 Division AR insert, January 1982. ■



If your time hasn't come, even a fall off your 60 foot tower on to a 50,000 volt line won't kill you.



Heard on 20 metres: "Gasoline and alcohol do not mix, but try drinking them straight."



Most of us don't believe everything we hear, but we usually repeat it anyway.

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Antenna of the Month. Nov issue of C.O. Amateur Radio.

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Here are a few examples of prices direct from Magpubs (add postage on weight) —

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RSGB TVI Manual	\$3.40 (140g)
AARRL Weekend Projects	\$3.70 (150g)
ARRL Antenna Book	\$5.70 (510g)
All about Cubical Quads, Orr	\$4.60 (150g)
CQTV ATV Handbook	\$3.40 (200g)
WIA Log Book	\$3.50 (310g)
Rad. Am. Prefix Map of World	\$1.50 (80g)
WIA Membership Badges (2 varieties) ..	\$2.00 (30c)
ARRL VHF Manual	\$4.70 (520g)

QSP

BY-LINE IN OST NOVEMBER 1981

"The most serious problem confronting amateur radio in the United States is the proliferation of rigidly restrictive zoning ordinances."

BEACONS ON NEW BANDS — USA

The FCC has authorised an experimental radio beacon on the new bands to be allocated in due course resulting from WARC 79. An important reason is to secure on propagation use various situations, including natural disasters. The 10 MHz beacon would commence on 1st October, 1981, under the call sign KK2XJM. The licensee for the experiment is W4MB. Reports are required.—QST, November 1981.

WICEN

R. G. Henderson VK1RH
Federal WICEN Co-ordinator

WICEN COMMUNICATIONS HANDBOOK

Copies of the proposed WICEN Communications Handbook were despatched to State WICEN Co-ordinators together with a newsletter last December. If you wish to see the Handbook contact your Co-ordinator.

WICEN EXERCISES

A few thoughts on WICEN exercises. Firstly who should we exercise in conjunction with or support of? Refer to your Handbook for the precise answer but bear in mind that we should not be providing communications that could be provided by a commercial agency, including Telecom.

Secondly how do we select community aid exercises to support? Well the situation must have training value for the WICEN communicator, that is, involve him in a task not unlike an emergency situation he could be called to respond to. It must be within the local group's capabilities and desirably should demonstrate WICEN to local disaster control authorities. A short INFORMATION leaflet explaining WICEN and amateur radio, but carefully written so as to NOT appear as a PUBLICITY aid, can be useful.

Thirdly do we repeat community aid exercises year after year? This is a delicate question as you can get locked in to support a service group and drift away from the exercise aim. Consequently each exercise should be debriefed fully to measure its true worth; perhaps next year it could be done with a few CB hand-holds. Again there are situations where little exercise traffic is generated and the WICEN operator feels he is wasting his time and effort.

On the other extreme exercises may be very useful to both parties and lead to stronger ties and increased support, such as donations of equipment to WICEN groups.

Fourthly put a considerable effort into planning your exercises, good liaison early with the supported community group pays dividends. Plan your involvement and identify what support your communicators can expect. As a guide they should be treated no worse than the organization's helpers, free entrance tickets, lunch facilities, car parking, use of club rooms, etc., should all be investigated. Seen in a hard mercenary light you are providing free what could be a quite costly service if it were hired commercially, if it were available!

Finally, when executing the exercise ensure all WICEN members know their duties and limit of responsibilities.

CONTESTS

Reg Dwyer VK1BR
PO Box 236, Jamison 2614

CONTEST CALENDAR

March	
6/7	ARRL DX PHONE
3/14	QCWA PHONE QSO PARTY
20/21	BERMUDA CONTEST
20/21	BARTG RTTY CONTEST
27/28	CQWW WPX SSB
April	
3/4	POLISH CW
17/18	POLISH PHONE
24/25	HELVETIA

May

29/30 CQ WW WPX CW

RESULTS

Results of the 1981 Helvetia Contest have been received. VK4LX and ZL1AJU both received certificates for their entries. Congratulations.

CQ 160 METRE CW CONTEST 1981

A short note from CQ Contest organisers mentioned that there were no entries from VK or ZL for the 160 metre CW Contest.

NP4A was world winner with 439200. GD4BEG was European winner with 180117. W8LRL was the USA winner with 164912.

WE GOOFED

This time Lindsay VK5NLC (Now VK5GZ) contacted me to find out what happened to his 140 points for his CW log in the RD Contest. After some checking, the log was found. My apologies, Lindsay, and congratulations on the full call.

1982 REMEMBRANCE DAY CONTEST

A rule and formula revision for the 1982 contest is well under way at the time of writing. The formula will be decided and then sent to the Federal body for their review and comment, all in time for publishing with the rules, hopefully in the July edition of AR magazine.

CONTEST CHAMPION TROPHY 1980

Results of the 1980 Contest Champion Trophy. The contests that were chosen to be assessed for competition. Points were:

John Moyle, VK/ZL, RD, AUST. NOVICE
Points by the Contest Results, 1980

Pos	VK	JM	RD	Nov	VK/ZL	Total
1	3XB	10	0	8	7+6	31
2	3AEW	8	8	—	9	25
3	4LT	7	7	—	10	24

No other stations qualified.
The — signifies not entered.

Contest Champion Trophy Results for 1981 Progressive

The same contests for 1981 were chosen as were used in the 1980 Contest Champion Trophy scores to avoid any confusion.

VK	JM	RD	Nov.	VK/ZL	Total
2BQS	4	0	8		12
2DCL	9	10	—		19
3XB	—	0	9+10		19
5QX	9	10	—		19
3CGR	10	8	—		18
2EL	10	8	—		18
3AEW	8	10	—		18
3ADW	7	7	—		14
5SR	5	—	8		13
3BRL	10	0	—		10
2JM	10	0	—		10

Only VK2BQS has qualified at this stage by entering three of the four contests.

As the results of the VK/ZL Contest are not yet available it is impossible to say who will become the top scorer for 1981. Good luck to all of you.

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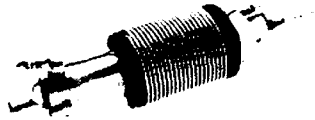
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KW20	20 metres
KW40	40 metres



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INTRUDER WATCH

Bob McKernan VK4LG
Federal IW Co-ordinator

All Intruder observers are reminded that there is still an urgent requirement for reports of harmful interference from UMS on 21032 kHz and CQ5 on 21115 kHz. Intruder Watch is still waiting for an overdue reaction from our communications authorities on a formal complaint about these harmful intruders. In the meantime we must continue to strengthen our case against them by presentation of ACTUAL WRITTEN COMPLAINTS FROM AMATEUR OPERATORS. If you are an experienced amateur, not active in administrative aspects of our hobby, here is your big chance to help. Reports on these two intruders will be most welcome. I take this opportunity to thank those limited number of amateurs who are currently reporting these intruders.

The Intruder Watch requires co-operation from the general amateur population. To effectively survive, it also requires guidance and assistance from IARU Monitoring Service HQ in the UK. Not one is really pulling their weight. If the slow deterioration of the quality of our hobby is your aim, do not act now or ever. If you enjoy the facilities gained over many years with much effort and expense, ACT NOW. If you are a member of the general amateur population, you should report intruders monthly to your Division IW Co-ordinator. If you are a Division Council member, ensure that your Division continues to have an active IWC, and support him in his job, so that the Federal IW Co-ordinator can be effective. If you are a member of IARUMS HQ and read a copy of this column, recall that the IW services of this world will die without feedback and direction from HQ.

All amateurs should remember that THE OTHER FELLOW WILL NOT DO IT... YOU HAVE TO.

FORWARD BIAS

(VK1 DIVISION)

CLASSES — 1982

NAOCP and AOCPL/AOCP classes will be conducted again this year by the VK1 Division.

The classes will consist of a full year course — 16th February to 9th November — for the NAOCP and a course covering the period 4th March to 12th August for the AOCPL.

A "crash course" for the May NAOCP will NOT be conducted this year.

All classes will be held in the middle of the three small rooms upstairs at the Bunda Street end of the Griffen Centre in Civic. This location should be much more convenient for those prospective "hams" who live on the south side.

The NAOCP classes will be held on Tuesday evenings from 6.30 p.m. to 9.00 p.m. and the AOCPL classes on Thursday evenings from 6.30 p.m. to 9.00 p.m. Format will be a half hour CW session followed by two hours of theory.

The course instructor for the NAOCP course will be Robin Greeney VK1ZRG and Owen VK1CC will continue as course instructor for the AOCPL again this year.

At the time of writing these notes the course fees had not been decided but, as in past years, are expected to be very reasonable.

Enquiries should be directed to Robin on 31 8638 (AH) or to Owen on 47 4268 (AH).

CONGRATULATIONS CHARLENE — VK1NEJ

Our congratulations go to Charlene, the 12-year-old daughter of Federal Contest Manager Reg Dwyer VK1BR, who has recently been licensed as VK1NEJ.

"Charley" sat for the November 1981 novice exam after about 12 months study with Dad and Ted VK1TR.

A keen CWer, Charlene operates mainly on 15 and 10 metres. She also has assisted Dad in converting a CB rig to 10 metres for her own use.

In 1st Form at High School, Charlene also finds time to cover a number of other activities, including swimming and showing several champion dogs.

And, if that is not enough she is also learning Japanese phrases to assist with her JA contacts, and continuing with her studies with a view to sitting for the AOCPL some time in 1983.

Well done, "Charley", we in VK1 are proud to claim what must be a new record — the youngest licensed YL in Australia. We're sure that there will be many amateurs in Australia and indeed throughout the world who will be very pleased to work your station and claim your QSL card.

73. VK1KV. ■

VK4 WIA NOTES

We are now entering what is perhaps the busiest time of the year for the Division. Firstly, we have a new Council and new office-bearers in a number of areas. Secondly, preparations for the Radio Club Workshop have moved into top gear. Thirdly, our delegates are being briefed for the upcoming Federal Convention.

Perhaps a few words are in order regarding the abovementioned Workshop.

The first Radio Club Workshop was held in 1975 and was hosted by the Ipswich and District Radio Club. Attendance was limited to clubs that felt that they were within driving distance. Since then, the Workshop has gone from strength to strength. Delegates now come from over 90 per cent of the affiliated clubs throughout the entire State — from Cairns and Mt. Isa to Dalby and the Gold Coast.

Discussion centres on the motions submitted by clubs and circulated prior to the weekend and then expands to cover Divisional services and, of course, Federal Convention motions as available.

What does the Workshop achieve? Most importantly it provides a direct avenue for members from all over the State to participate in forming the policies and directions to be taken by the Division. In this way Council can keep abreast of members thinking on many matters. It also provides an excellent preparation for our delegates to the Federal Convention (usually held two weeks after the Workshop). It is felt that in this way the Division can more adequately represent its members.

The Workshop also provides a way of "humanizing" liaison between Council and members throughout the State, i.e., putting faces to voices and to letter-writers. This, in conjunction with the weekly Radio Club Liaison Net on 80m, has borne fruit many times.

This year sees a few major changes to the Workshop. For the first time the Workshop will be "live in" at the Griffith University, enabling less time to be wasted in travel to billets and hence more time in deliberating and discussing. Whilst a number of motions have been received from various clubs, it is proposed that a major effort will be mounted this year to produce a series of broader policy statements on selected topics. This will require a lot of effort from delegates as a lot of ground is expected to be covered in a relatively short time.

YOU CAN HELP

If you are a delegate — make sure that you discuss the circulated motions with your club members and make sure that you have the broadest backgrounding in their attitudes in general. If you are not a delegate — make sure that your delegate is well acquainted with your club's attitudes and is not going to just present his or her views only. It is in this way only that we can meet the objectives set for the weekend.

REPEATER CHANGE

The Darling Downs repeater on the Bunya Mountains has changed frequency to 146.15 MHz input and 146.75 MHz output and now shares a common building with the VK4RTT beacon. ■

THE WA BULLETIN

NOTICE OF AGM

Notice is hereby given that the AGM of the West Australian Division of the WIA will be held on Tuesday, 20th April, 1982, at Science House, 712 Murray Street, West Perth, on the conclusion of the April general meeting. Business to be transacted will be:—

1. Consideration of Council's annual report and balance sheet.

2. Election of office-bearers, viz.:—
 - (a) President.
 - (b) Vice-President.
 - (c) Seven other Councillors.
3. Election of two auditors.
4. Appointment of a Patron.
5. General business which has been duly notified.

Agenda items will be advised on the Divisional news broadcast on the three Sundays prior to the AGM.

Members unable to attend may appoint another member as their proxy in writing in the following form:—

I, _____ member of the Institute, hereby appoint Mr. _____ also a member of the Institute, to act for me as my proxy and in my name to do all things which I myself being present could do at the meeting of the Institute to be held at Science House, West Perth, on the 20th April, 1982.

Signature _____ Witness _____
Date _____ ■

SPOTLIGHT ON SWLing

Robin Harwood VK7RH
5 Helen St., Launceston, Tasmania 7250



Well, the M-82 broadcast period had commenced. This will last until the first Sunday in May. By now, you have probably noticed that many stations have altered their frequencies to take account of the changing propagation. Also, you have made a Chart of Occupancy of your favourite Bands. Just before you settle down, don't forget that Europe goes on Daylight Saving Time as from the last Sunday of this month, and, as a consequence, programmes for European audiences will be advanced 1 hour. Not only that, but Soviet broadcasting outlets, including Radio Moscow, make their half-yearly alterations to their frequency lists on April the 1st. So it will be a hectic time, catching up with the changes.

Radio Australia's Communications programme — Spectrum, which has been monthly up till now, will now be aired fortnightly as from March. You can hear it on March 7th, and 21st, at either 0610, 0810, 1612, 2112, or 0330 Mondays. It is hosted by Dick Speekman.

UTC

Talking of time:—as from January the first, Greenwich Mean Time (GMT) ceased to be the universal Standard Time, and co-ordinated Universal Time (UTC) came into effect. Really there is no difference between UTC and GMT, just a question of semantics.

PROPAGATION

I have been really surprised how quickly the higher frequencies are markedly deteriorating, as far as propagation goes. Both 15 and 10 metres have not produced any startling activity. It is down to what it was twelve months ago. As sunspots decrease, the lower frequencies do seemingly improve. At the bottom of the last cycle, propagation on 3.5 and 7 MHz was excellent, and I well remember Don G3A00, from near Manchester, did put in a very strong, readable signal on forty in the late afternoons. Yet, I really have not heard any comparable European signal on 7 MHz for many years.

THIRTY METRES

Early in January, I was fortunate in being able to try out the new thirty metre allocation (10.1 to 10.15 MHz), along with many other stations. It was possible to work all States as well as NZ, the Pacific, Europe and a few scattered Asian countries. It is not as crowded as twenty, as far as amateur stations are concerned. However, there are a myriad of commercial fixed services, who have priority anyway. It is significant that the Ws and JAs have not yet received this allocation, because the Fixed Services in these regions have protested to their respective regulatory authorities about sharing their frequencies with amateurs, so that no activity exists from amateurs in Japan and the Americas so far.

It was also interesting to note that the majority of Australian stations were initially using phone, but since the novelty has worn off, only diehard "brasspounders" seem to make use of any spare space available on thirty metres.

RADIO POLONIA

Those interested in attempting to hear Radio Polonia in Warsaw, could try 15120 kHz at about 1020 UTC. I think it is Warsaw, but it is hemmed in between Radio Australia on 15115 and Radio Peking, broadcasting in Khmer, on 15125 kHz. It is reported to be broadcasting continuously a 1 hour loop in Polish, English and other European languages between 1200 and 2300 UTC. As the situation fluctuates in that region, expect its programmes to do likewise.

250 KW x 11

Incidentally, Radio Free Europe/Radio Liberty has installed 11 new 250 kW transmitters at their two sites in Portugal and West Germany. Now it should be possible to hear their output through the constant jamming, yet it is also probable the power of the jammers will also increase accordingly and spill over to adjacent channels even more.

TOP SECRET

There has been talk recently in the States of an anti-Castro "clandestine" station called Radio Marti being set up in Florida. It will be reportedly mainly MW but could easily spill over to shortwave as well. Another Latin American that could conceivably be involved in a radio war is El Salvador. At present, only one frequency is operational on HF, but there have been indications that this could be increased very rapidly to counter a number of low powered clandestine stations of the guerillas, which have been reported in California operating between 8.1 and 8.2 MHz and heard very weakly signing off at 0500 UTC.

Well, that is all for this month. Good DXing and 73. ■

LISTENING AROUND



With Joe VK2BXJ, Buronga, NSW

Between the 13th and 17th of December I was in Melbourne as the house guest of Don VK3VPW and his good lady at Narre Warren. They gave me the real VIP treatment.

First day with Don was occupied by a visit to Radio Lyndhurst, which will be a story all by itself, and the next day, together with two other amateurs whom I was meeting for the first time, we were at Tullamarine to see Des VK3BSE (of Cocktail Net time) and his lady off on their Tasmanian jaunt. The last day was my free day in Melbourne and then I had to return to this hot place.

But while at Don's place I took the opportunity via Don's rig to have a word with Rob VS6HH in Hong Kong and David N2ATY of Fairport, New York, both on 28 MHz. So now I have very attractive cards from both. Rob told me about the water rationing in Hong Kong, and David says that many US amateurs know my EICO 753 and the VFO problems that are characteristic of that vintage rig.

Back here at Buronga, at 3.35 a.m. local time, Christmas morning, in a night owl's net on 80, we had a breaker who turned out to be Chris VK2PLX (home QTH Tumut), then at the scene of a car roll-over, 22 km south of Yass. Of those listening Sam VK5TZ could hear him best, and Chris's request for police and ambulance to attend the scene was relayed by Sam on the blower to Adelaide police, while we stood by to get confirmation from Chris re arrival of the assistance needed. At 4.07 a.m. Chris told us that help had arrived and said that Yass police praised the initiative of the amateur operators in getting the message through. Chris, who was conserving a rapidly running down battery by not talking unnecessarily, later told us that he's only had his licence a week and this was the first time that he had gone mobile. Among others who stood by while the incident was being handled was Jack ZL1LK at Orewa (Auckland), New Zealand, and Bart VK6NPM, of Perth, himself a seasoned handler of emergency calls as a Crest monitor on 27 MHz. ZL1LK said that he could hear Chris quite clearly.

Howard Boddy ZL4GG, of 14 Falcon Street, Kaikorai, Dunedin, New Zealand, is an 84-year-old gentleman who is very interested in Australia. He told me that he has no less than 36 books on the subject of our island continent. Howard uses a 101E and on the back of his card, which bears a sketch of a New Zealand bird called the Kia, he writes: "I do not operate regularly in the early hours of the morning but my wife Emily and I have a cup of tea in the early hours. I am 84 years and my wife is 80 years. Her parents migrated originally from Scotland to Gisborne, east of Ballarat, Victoria, and there is a McGeorge Road named after them in that town. My mother's people came from Scotland in a sailing ship, the "Lady Egidia". My father came from London in 1887. I am a retired chartered accountant and my main sporting interest has been hiking in the mountains. My best climb was Mount Asprey, third ascent in 1928." Oh well, Howard, it was lovely to hear from you and I have printed your address in the hope that some Aussies will send you plenty more books and newspapers on Australia.

There's a very energetic chap called Sam Voron VK2BVS up Sydney way, and Sam's well known for his PR work with amateur radio and his handling of third party traffic, particularly when there's any industrial tie-up that dislocates ordinary communications. One New Year's Eve Sam had installed himself with some helpers and his equipment in Sydney's Hyde Park, there to give a demo, on the occasion of the Festival of Sydney, of how amateur radio and particularly third party message handling works. Just before midnight I spoke to Sam and those listening with him, and he told me that as soon as the clock struck the witching hour heralding in the New Year, he was all set to be one of the first to use the new 10 MHz band. My shortwave receiver isn't much chop on 30 metres, so sorry I couldn't hear you, Sam, but wasn't it 30 metres that the old-timers

used to use before the commercials set their sights on that band?

My Kraco CB was some time ago converted for ten metres, and on 21/12/81 at approximately 11.14 a.m. local time (28.565 MHz), KZBTB by the handle of Jim was heard using one watt to speak to other US stations from somewhere within the Grand Canyon. Now how's that, as the cricketers would say?

Alan Chung from Cooma, NSW, is one of the many SWLs who listen to a collection of us night owls on 80 in the wee small hours. And some of the SWLs, including Alan, sometimes give me a ring on the blower too, just to let me know that they are really there reading the mail ("sandbagging" as it's called). At the end of quite a long phone call the other morning Alan excused himself saying that he had some plumbing to do. Asked what was the nature of the plumbing, he said that he had to connect up 480 cow teats to the milking machine at the dairy where he works!

One night on 80 metres the subject of vintage broadcast receivers came up, and I put in my pennyworth. One of the earliest that we had at our house in Sydney was a Gulbransen dual wave console, on which it was my delight as a schoolboy to listen to the bells of St. Peter's booming out in all their glory over Vatican Radio. On that set also I heard the abdication speech of King Edward VIII, and occasionally the rantings in German of a ratbag called Hitler. We couldn't understand what he was on about, but we sure could hear him stirring the pot. I used to listen to 20 metres also and my favourite US amateur was W6ITH, in Wittier, California.

I don't think I ever plucked up enough courage to send W6ITH a signal report so I must assume that he never knew of my existence, but I used to think it wonderful to hear him nattering on about "doublets" at a time when I don't think I would have known a "doublet" from a cat's whisker. I wonder what W6ITH would think of the amateur scene and the little black boxes if he's still around today?

One of my favourite "party" tricks with the Gulbransen when visitors were around was to let them hear "Molly", our fresian cow, bellowing its head off through the Gulbransen in the dining room as it was being milked in the cow shed down the back yard. Secret of this enterprise was a large question mark shaped horn loud speaker roped in for service as a most excellent microphone in the shed, and connected to the pick-up terminals of the Gulbransen. Boy, could that cow roar in our dining room, and weren't those visitors impressed at the "boy genius" who made it all possible! Ah the innocence of youth, but wasn't it great fun!

Well, my space is nearly taken up now. Sorry I've missed out a couple of issues, but I hope you all had a merry Christmas and a happy New Year, and thanks to you all for your kind comments on the air about this column.

73. Joe VK2BJX. ■

ALARA

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

My thanks to all who enclosed comments in their contest logs; full details in April AR. Remember 13th November, 1982, for contest No. 2.

Congratulations to Gill VK6YL, "Co-Amateur for the Year", awarded by VK6 Division of WIA. Gill is secretary of the WA repeater group and shared the honour with Trevor VK6MS, the President. The award is a perpetual shield, each received a framed certificate and microphone. Well done, Gill, another first for a YL. Gill is QSL Manager for VK9ZH on Willis Island, so please QSL direct to Gill or via VK6 Bureau.

NEW MEMBERS

VK4VKT Valerie, VK3NLO Joan, VK4NAM Dorothy, VK2PLG Sue; also DX members Mary Ann WA3HUP, Paula DJ0EK, Margot DK5TT, Cilia G4KVR, Celia ZL1ALK, and Jocelyn "Jos" ZL2BAO.

NEW CALL SIGNS

Joyanne VK5BJH (was VK5PJH), Joan VK7ZY, Dorothy VK4NAM, Sue VK6NSU, Beryl VK2DVI (was VK2VDS), Sue VK2PLG, Erica VK3PBU, Beth VK6EL and Sue VK5AYL.

Congratulations to all of you and to any other YLs who have new calls.

Remember, subscriptions were due on 1/1/82 and Valda would like to hear from you. With postage costs rising all the time we can only send Newsletters out to financial members, so if you haven't already paid please do it NOW. VK rates are \$5 yearly. Overseas airmail \$5 (not \$6 as previously stated), sea mail \$3. Ms. Valda Trenberth VK3DVT, Treasurer, C/- Brighton PO, Church Street, Brighton 3186.

Marlene VK5QO has issued two copies of the Newsletter since she took over as editor; very interesting and informative, Marlene, well done. Investigations are being made to have stationery with ALARA's logo printed on it and also stickers for use on airmail envelopes to help promote ALARA. BYLARA (British) and CLARA (Canadian) have this and it is effective.

ALARA has badges and charms for sale among members and these are exchanged with overseas sponsored YLs. Also available if your YL is a collector of teaspoons, are spoons for \$2.80 each, perhaps something different for a birthday!

Girls, if you have any photos of groups taken at a field day or convention can I have a copy for publication. The photo in January AR was very well received judging by comments I had. It is much nicer to know what you look like.

Until next month 33/73/88 to all — VK3DML. ■

The tip you leave today would have bought a meal a few years ago.

INTERNATIONAL NEWS

NEW BANDS

According to the latest information amateurs have been authorised the use of one or more of the new bands from 1/1/1982 arising out of the IARU work for WARC 79:—

Switzerland —

10100-10150 kHz secondary.

18068-18168 kHz.

24.890-24990 kHz.

Bands above 25 GHz, as specified.

A STEP IN THE RIGHT DIRECTION

An item in the IARU R1 news December 1981 announced that licensed Luxembourg amateurs could operate temporarily in West Germany for portables and mobiles using their own licences. The writer commented: "We should thank both P. and T. Ministries on this first step towards European integration in amateur radio".

VHSC

The Very High Speed Club, founded 1/5/1961, exists to promote very high speed telegraphy. The minimum speed is 200 letters per minute, no keyboards or decoders, during 30 minutes QSO with four different Club members. On the list of members are VK3CX, VK4FJ and VK4YP. Sponsor is VERON with PAODIN as Secretary.

VS6 ACTIVITY DAY

The Hong Kong Amateur Radio Transmitting Society announces 3rd and 4th April as activity days to allow amateurs worldwide to work Hong Kong.

RECIPROCITY AND GUEST LICENSING

South Africa has announced that guest licences will be available for visiting amateurs even where no reciprocal agreement is in force. Applications must be made three months in advance, together with complete itinerary of the visit. Not available to Novices, validity three months, and each will be considered on merit. Licence fee R10. Apply to PMG (Telecommunications Department), Private Bag X74, 0001 Pretoria. QST November 1981. A reciprocal operating agreement between USA and Italy came into force 28/8/1981.

ODDMENTS

DOC Canada has permitted 10m repeaters, and announced a new third party agreement with Haiti and a new reciprocal operation agreement with Australia. Operations by XZ5A and XZ9A are not counted under ARRL DXCC rules as the Burmese Government does not recognise the insurgent government in the area concerned. QST November 1981. ■

WARNING!!

Disposing of your old rig??

Please ensure it goes ONLY to someone licensed to use it on YOUR bands.

EDUCATION NOTES

Thank you to all those who have written to me with comments or ideas on education matters. Your interest is appreciated, and several suggestions have been noted, even if I am a bit slow in answering your letters.

I would now like to start collecting information about classes being run this year, either by individuals, clubs or educational institutions. I see that a number of TAFE colleges are now offering radio courses. I would like to hear the opinions of those who have undertaken various courses. Comments on the background expected, the parts where most difficulty was experienced, the references used, or the overall efficiency of the course would be most welcome.

One problem in many classes is the wide range of backgrounds, abilities and dedication among the students. How can instructors minimise this?

Now for the commercial.

I have at present one tape released by DOC comprising five Morse exams at five words per minute and five exams at 10 words per minute. If you send me a C60 tape I can make you a copy, but please say if you do not want both speeds, in which case I could fill the blank half with plain language or random letters at the same speed.

I hope soon to have a second tape, which would allow for a full 60 minutes at either speed — what more could anyone want?

I hope to have another novice trial paper ready early next month. The November novice and February AOCF theory and regulations trial papers are available from the Executive office on request. The questions on these papers have not been taken from official exams, but the papers have been approved by DOC as of acceptable standard (or perhaps just a bit harder than theirs). The main idea is to provide class instructors with a "neutral" final test paper, but they are available to students working on their own as well. Please feel free to comment on them if you have used them.

I am trying to establish an education net on Wednesday evenings, about 2200 local time, at about 3685 kHz. All are welcome to join in.

Brenda VK3KT. ■

Bumper Sticker of the week: "The Rat Race is over . . . The rats have won."

Photographs for AR
DON'T KEEP THEM
TO YOURSELF
Send them in — NOW

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

85 Wyndham Street, Roma, Qld. 4455
15th November, 1981

The Editor,
Dear Sir,

I'm answering a letter in the November edition of AR as regards to the problems on the 15 metre band with operators coming down into the CW section of the band from VK1CNX.

I must agree that this is a serious problem. Only tonight I was having a CW QSO with an overseas country on 21136 when a novice station started transmitting on Phone on 21135 and then asked me to OSY because I was interfering with his transmissions.

I won't mention any call signs but this particular person is often down in this section. I like working CW on 15 metres but when this station starts transmitting he splatters down to 21125, thus making CW operation impossible. I think that this is the only band where this problem arises.

I'm hoping that the person responsible reads this article and takes the hint and moves a little higher up the band. I thank that VK1NCX and I are complaining about the same person.

73 to all.

Yours sincerely,

Kevin Crandell VK4VKX.

The Editor,
Dear Sir,

As one of the older members of the WIA and being interested in the historical side of amateur radio, I thought that your readers might be interested also in some press cuttings that I acquired early this year from the Latrobe Library. They refer to "WICEN Type" exercises held on the Yarra 60 years ago during Henley on the Yarra boat races.

The "Argus" newspaper cuttings are self explanatory but some of the older readers may be interested in the names of those who took part in the year 1922. Four stations were set up along the river bank. No. 1 in a tent at the start manned and operated by Ross Hull and Charlie Hiam, No. 2 in a tent operated by Max Howden and Godfrey Barhold, No. 3 in a tent operated by Ron Hipwell and Len Webb, and the last in the Mercantile Boat Shed and operated by Keith Ballantyne and Ron Ridout. At the boat shed we used the flagpole on the roof for our antenna wire. I remember that the pole had no halyard so in the enthusiasm of youth I shinned up the pole and threaded a rope through the pulley while hanging on grimly with one hand.

Of those that took part, as far as I know, only three are still alive — Godfrey Barhold VK3BT, Len Webb, and myself VK3AKB.

73. VK3AKB.

DXCC

A correspondent wishing to remain anonymous (name known) writes about the DXCC system from the viewpoint of being in or close to the Honour Roll. We believe the ARRL DXCC rules and criteria should be followed for the WIA DXCC Award because of the international nature of earning such an award.—(Ed.)

The Editor,
Dear Sir,

With reference to the article regarding the DXCC in Amateur Radio December 1981 and January 1982 and the invitation to submit any comments. My thoughts and a lot of other serious DXers cannot concur with the Award Manager's inconsistency in his determination of who will be "good" for a new country.

At this juncture, I would like to point out that this criticism is in no way a personal attack on VK5WV and that I have nothing personally to gain

from the following remarks as my DXCC is with the ARRL (since 1977 and just updated to a credit in excess of 300). This is because I feel ARRL is a "yard stick" which is common to all participants and has world wide recognition. This is very important if one's friends are mainly from overseas countries and quoting that one has "X" number of countries to their credit creates friendly competition.

Here are some examples where I find it hard to understand some of the AM's decisions.

(1) VE Sable Island. This expedition was doomed from the start and the ARRL did not allow any credits, so was there a lack of communication for it to be allowed in VK and later deleted from one's total?

(2) 9U5 Burundi. The ARRL does not allow 9U5JM due to the terms of its licence which restrict experiments to within its own country. However, Dr. Ed Richmond on an African tour was a guest operator there and worked the world. Ed has avoided the question of the promised paper work which he was going to take back to Newington and sort problems out, both on air and in direct correspondence. The AM does not know of any impediment why it should not be allowed. Why?

(3) 5A Libya. G3JKI was he portable 5A? Repeated requests by ARRL for information, from both the operator and the QSL Manager, have fallen on very deaf ears. Both stations being hyperactive before the operation but seldom if ever heard since. (The OSLs took 12 months to appear.)

(4) XZ Burma. JABBMK gained permission to operate from within a rebel State and the "Licence" was signed by the Military leader. The authority as published in an American DX news sheet authorised JABBMK to operate. When he left, the same call sign was being used and magically another appeared out of the hat. Some questions come to mind such as (a) Was the licence extended? (b) Who conducted the examination of the two operators who are now using XZ5A and XZ9A? (c) Would any amateur be breaching privileges by working a "Pirate"? (d) If our External Affairs Department recognise the Administration in Rangoon, Rangoon does not and will not recognise Kawthoolei, why will the WIA go out on a limb? (e) Would the AM consider "Prince Leonard's Hutt River Province" or the "Rainbow Creek" brigade for they seem to have similar parameters? Whatever happens this escapade would have to be among the "Top Five" as a money spinner (for whom it is not clear) even to the extent of Tee shirts at \$10 each adorning many North American wardrobes.

I feel that a point has been made with the above being a few examples, but another question which is in the minds of Institute members is why does one hear of the AM's rumblings via Amateur Radio Action, even to the printing of the "most recent DXCC Listing (which wasn't up to date anyway) by the courtesy of the WIA Federal Awards Manager"? Are years of voluntary labour and dedication to the Institute and amateur radio by many going to be swallowed up by a handful of "capitalistic" "journalists"?

It is my belief that the Institute has got three options in dealing with the problems that have developed. They are as follows:—

(1) Carry on as if nothing has happened and allow doubtful operations to be counted. Forget about some of the older participants in the scheme who worked a genuine station in the Call area. (It may have been many years ago but so what?) This course of action is an easy way out and no one will have to do anything, but the Institute will be open to World wide ridicule and this Policy would open to world wide ridicule and this policy would infer that it condones such operations.

(2) Get its act together, bringing it in line with other similar organisations and appoint a Committee of at least five, including at least one Novice operator (they do constitute a sizeable percentage of Full calls), one member to act as Chairman and become Federal Awards Manager. (It is apparent that the responsibility should not be left to any one individual to administer, particularly with some operations in remote areas being planned by "Get rich and get out" operators. Perhaps a likening to the operator who claimed to be on North Cook and as he had a high expenditure and also a "special" QSL card, a donation of two American

dollars to a Box number in Raratonga would expedite the much wanted card. One problem, he, whilst supposedly on North Cook, was seen in South Cook and he was a VK2.)

It must be stressed that cards for updating of Credits would have to be examined by the AM or his representative due to the circulation of bogus cards and the submission of similar cards by a prominent DXer for accreditation which led to disqualification from the ARRL. There was no error on Dr. Dave Gardener's part in my book because he did it twice and was expelled before he could resign.

(3) After rehearsing and sorting out the problems as in (2) above, open up WIA DXCC for all-comers. This could be a financial bonanza for the Institute and by creating an external "market" with Associate Membership, a wider circulation of Amateur Radio, which by the few overseas amateurs who have seen it that I have spoken to, regard it as a first class production and are seriously contemplating subscribing. Perhaps there could be some hidden benefits such as prestige, another common talking point on air and some unusual articles being supplied.

With DXCC some stations will go to any length to get an unusual "Certificate" on the wall, this particularly applies to North America and even though the creditable countries may be the same I am sure there would be a market. Some serious thought should be given to establishing some form of DXCC for Novices, as due to their usable spectrum they are disadvantaged and somehow they should be catered for.

I hope the above if nothing else will create a few thoughts from the Executive and enable this situation to be resolved. Whichever course is taken there will always be the disgruntled, however please don't allow the Institute to be the target for adverse criticism from a world wide audience.

(Name and address supplied — withheld by request.)

5 Havenvale Crescent, Dianella 6062

The Editor,
Dear Sir,

There appears to be a discrepancy between the Band Plan in the 1981-82 Call Book and what I have believed to be correct. The Call Book finishes the 80m CW only segment at 3535 kHz, whereas the VK2ZIP catalogue uses 3550 kHz. Who is right?

Further on the subject of Gentlemen's Agreements. Like Jerry VK5NRG (AR October 1981, page 48), I have also noticed SSB nets below 21.150 MHz. I disagree with some of his comments and in particular the tone of them. Restricting novices to A1 might reduce the QRM below 21.150 MHz, but it could not eliminate any QRM from full call stations, as VK5NRG seems to imply. I would rather put up with the QRM that VK5NRG complains of (and so it seems would our editor) than the legislative QRM from Canberra. One solution might be for Jerry to get an AOC and drop below 21.125 MHz.

One problem with the suggestion to keep AOC stations out of the novice segments would be DX expeditions. Does Jerry feel so strongly about full calls operating in the novice band that he would pass up a QSO with, say, Heard Island, just because the operator there has a full call?

73. Peter Roga VK6PV (ex VK6NRU/ZPR).

The long standing and agreed WIA recommended CW only portion for the 80m band is 3500 to 3538 kHz.—(Ed.)

**HAVE YOU CHECKED
YOUR CALL-SIGN
IS CORRECT
ON YOUR
AR ADDRESS LABEL?**

Wait for the Tail

"Like I said, Charlie, we've got a great repeater here in Wollongong."

"Yeah, you're right, mate. A good group of blokes and a great set of rules. Unless you work by the rules you don't have a good repeater."

"BREAK."

"Yeah, stand by breaker. That's the ticket, Charlie. Unless you got rules that people work with you don't have a good repeater."

"BREAK."

"Breaker, you've been acknowledged. Boy, some people. By the way breaker, on this repeater you only use 'break' when you have important traffic to pass. Right, Charlie?"

"BREAK, BREAK."

"Yeah, and you only use 'break, break' when you have VERY important traffic."

"And furthermore, breaker, you don't just use 'break'. You're supposed to use your call sign."

"Gentlemen, this is VK2QRM with priority traffic. Is there a base station on frequency?"

"VK2 . . . MRQ, I think it is . . . Victoria Kilowatt Two Mike Radio Quebec? Is that the call?"

"No, Charlie, you've got it wrong. It's Queen Roger Mike. That's what it is, isn't it, breaker?"

"That's a Roger, old man, QRM. Quietly Rolling Merrily. Are you a Base Station? We have a road situation that needs some help."

"Hold on, old man, we do have rules on this repeater and you just broke two of them."

"Sorry about that but there's a fairly big problem on the F6 freeway. Have you got a phone handy?"

"Sure do, I run a first class station here. Anyway the first rule you broke is the use of the word Roger, the handbook says you should use Romeo. I guess you know that but I thought I should bring it to your attention. Second . . . we prefer you to use standard phonetics, not the ones you used. Otherwise you will get some character using 'Always Getting Stoned' or 'Not Tonight Josephine' and junk like that, like on the Chicken Band. Do you Roger that?"

"Yes, that's a QSL. Now about that emergency, could you call the police for me?"

"There you go again, breaking another rule. Maybe you QSL on CW but it's Romeo on phone — You got that?"

"Charlie, you're fantastic, you know all the rules. By the way 10 minutes are up. We better identify. This is VK2QST."

"Thanks for reminding me, mate. This is VK2QRP. Now, breaker, QRM, I think. I didn't write it down. The other thing I

wanted to mention is your use of the word emergency. Is this 'emergency' or 'priority'? There's a difference you know!"

"VK2QRP this is VK2QRM. We're on the F6 Freeway, one mile past the Sublime Point turn-off. A car has left the road and hit a tree. Will you call the police and the ambulance?"

"Okay, copied all that. That's a nice sounding rig you got there. What do you reckon, Joe?"

"Sounds a bit over-deviated to me, Charlie. Can you back off the mike gain a bit, QRM?"

"Okay Joe, can either of you call the police station please? There are people in the car and they don't seem to be moving."

"Okay, QRM. Let me find a piece of paper and a pencil and we'll take care of you. Stand by."

"While Joe is looking for a pen, old man, let me remind you to wait for the tail on the repeater. You missed it a few times and you could have timed out the repeater. I know you're new on the repeater and don't know all the rules . . . Just wait for the tail to finish."

"QST is back. Okay QRM, nice and slow now and don't get excited or anything. What's the situation you want to report?"

"On the F6 freeway, north-bound, just north of the Sublime Point turn-off, a car has gone off the road and hit a tree. There are people inside who may need help. QSL? VK2QST from VK2QRM."

"Jeez, there you go again with the QSL stuff."



... QRM a minute, 's gone to answer the phone ...

Lyrebird, Winter 1981

15,000 licensed amateurs in a population of 15,000,000 is a tiny percentage. One strong voice, the Wireless Institute of Australia, carries weight — much more weight if all amateurs join as members.

"And don't forget, Joe, he doesn't have to ID with both calls, just his own call. Tell him."

"Well you did that pretty well, Charlie, Okay QRM, I know you're new on the repeater and a little excited, so we'll forget it. So, that's on the F6, north-bound, just north of the Sublime Point turn-off. Roger. Are the people in the car injured? I gotta know so we can get an ambulance."

"All right, I'll get out of the car and take a look. I've got a hand-held I can take with me. Stand by."

"Standing by. Hey, Charlie, do we call Bulli cops or the Highway Patrol in Wollongong?"

"Probably the Highway Patrol, you see plenty of them on the expressway."

"QRM back. How's my signal from the hand-held?"

"It's kinda noisy. About 85 per cent quieting. You should try to have a noise free signal into the repeater, not noisy like yours is right now."

"Sorry Joe, but I had to get out of the car to see about the people."

"And you're not waiting for the tail again. Slow down, don't get excited. I know you're not used to handling traffic like this every day, but you've got to stay calm. Can you boost that thing to high power?"

"I think I've got a new battery pack in the car. Shall I go and get it?"

"Might be a good idea. While he's away, Charlie, I don't have a phone book. Can you give me the Highway Patrol number?"

"QRM back. How's the signal now? I've got a new battery pack in."

"100 per cent old man. Now check out car and see if the people in it need an ambulance."

"Hey, Joe, if they need help, what's the number of the ambulance?"

"I don't know, mate. Maybe the police will handle that."

"Gentlemen, the people in the car are injured and need help. VK2QRM here."

"VK2RVA with information."

"Go ahead RVA."

"Just tuned in to the QSO, Joe and Charlie, I've got the ambulance number. What's the problem?"

"Good morning, Ed. We've got VK2QRM on the F6 freeway with a situation that needs to be called in. QRM, do you copy, Ed?"

"Sure do. Ed, can you call in an emergency?"

"Well, hold on a minute. I'd like to help, but first we have some rules on this repeater. First off, you didn't wait for the tail . . ."

WB2RVA in CQ, December 1980. Adapted by VK2DMR from The Propagator. ■



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OBITUARIES

HENRY CLEM VK4HC

Henry was born in Ipswich in 1917 and was an active amateur in the years following World War 2.

Ill-health prevented him from participating in amateur radio over the last few years.

For some years Henry was in the retailing business and then joined the Queensland Railways, and later took up his own retail business.

He was well liked for his pleasant and friendly manner and will be missed by his many friends.

His wife predeceased him several years ago, from which Henry never really recovered.

On behalf of the amateur radio fraternity we extend our deepest sympathy to Dennis, Barry, Morrie, Ken and families.

Norm Hart VK4KO. ■

JAMES ALLENBY SCRIVEN ex VK5SN

James Allenby Scriven was an "old-timer" whose AOCIP was dated June 1938 and numbered 2142.

Prewar Jim held the call VK5SN. His tragic death at the farewell luncheon of a friend on 3rd December, 1981, terminated a long standing plan to return to the amateur bands. For several years he had been working towards this end with the meticulous thoroughness so characteristic of him.

In 1936 Jim joined the Royal Australian Naval Reserve and was mobilised at the outbreak of war in September 1939. He saw active service on various ships and establishments as a Leading Wireless Telegraphist.

After discharge Jim's innate love of precise things and his flair for craftsmanship led him through watch and instrument making to the airways industry. After a short stint with Australian National Airways, he joined TAA some 24 years ago and was licensed as an Aircraft Maintenance Engineer, Electrical. Before the Douglas DC9 was introduced to Australia he spent some time in the USA.

At all times a loyal supporter of the WIA, Jim was well known in areas where help was needed, such as journal collation. In 1980 he gained first place in the VK5 Receiving Section of the Remembrance Day Contest. He was a member of both the ARRL and AMSAT.

Jim was remarkably well informed on a wide range of subjects and was ever a dependable and supportive friend.

We are poorer for his passing.

Our deepest sympathy is extended to his wife and family.

Staunton McNamara VK5ZH. ■

BRUNO VOSS VK2VRU

It is with regret we announce the passing of Bruno VK2VRU at Sydney's North Shore Hospital on 12th January, 1982, at the age of 47.

Bruno was born in Germany and at the age of ten he was moved from war-torn Hamburg to the countryside and shortly after he was orphaned. He had a very chequered career training as a carpenter, working in coal mines and serving in the French Foreign Legion and upon his discharge migrated to Australia.

Bruno graduated from CB to becoming a novice in 1979 and immediately became an enthusiastic DXer, this being facilitated by his command of three languages, and in the brief period of two years he acquired sixteen awards, including the WIA DXCC.

SILENT KEYS

It is with deep regret that we record the passing of —

Mr. F. C. BIBBY	VK3OL
Mr. H. E. CLEM	VK4HC
Mr. F. W. CROPLEY	VK3LR
Mr. R. C. PAGE	VK2KCF
Mr. JAMES ALLENBY SCRIVEN	ex VK5SN
Mr. W. G. SMITH	VK2WH
Mr. R. TURNER	VK5ART
Mr. H. B. VOSS	VK2VRU
Mr. F. C. WESTON	VK5APW

Bruno's jovial manner as net control will be sadly missed by the members of the Central Coast Amateur Radio Club.

Sincere sympathy is extended to his wife, Juliane, his son, Norbett, and his daughter, Bronwyn, whom he eagerly supported in her athletic prowess.

Submitted by Michael Barry VK2IH. ■

FRANK WESTON VK5APW (ex 2APW)

Frank passed away very suddenly, but peacefully, on 13th January, 1982.

Frank was born in India in 1919. He joined the RAF mid-1940 and was discharged in December 1947 with the rank of Acting Sergeant.

He saw active service during World War II and the fall of Burma found him stationed at Lashio. With 130 other RAF personnel he walked out of Burma into Chantu, in China. He was posted missing for nine months during which time Frank and his mates begged, borrowed and even stole parts to make their own radio. They tried to make contact using the old RAF code, which had since been changed, and it took several weeks to convince the RAF in India that they were who they were. When headquarters records finally proved they were missing arrangements were made to fly them to Chungking, then back to India to Headquarters Command, South-East Asia, where Frank saw out the rest of the war.

Upon his discharge from the RAF Frank joined the Marconi International Marine Communication Company as a sea-going Radio Officer, during which time he was involved in transporting the first troops of the United Nations to Korea and the evacuation of the Dutch out of Indonesia.

He gave up the sea in 1953 and joined the Ministry of Civil Aviation in London and remained there until he emigrated to Australia in 1956. He spent a short time working for the Ionospheric Prediction Service and the ABC before he joined the Department of Civil Aviation in 1960 as a Radio Technician at the Radio Workshops at Marrickville, NSW, where he remained until ill-health forced an early retirement in 1976.

Frank retired to Dunbogan, NSW, until 1980, he then moved to South Australia as he was advised the drier climate there would prolong his life. Amateur radio, particularly chasing the elusive DX and rag-chewing with his many new and old friends, certainly helped in this cause also.

Frank was always the perfect gentleman both on air and off, fondly remembered by his former workmates as a very conscientious, amiable, considerate and helpful friend. His cheery, friendly disposition, despite failing health, won him many friends and he will be sadly missed, particularly on the Pacific DX net.

To his devoted XYL Olive and son Stephen we extend our deepest sympathy.

Submitted by Harry VK4OX. ■

HAMADS

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Yaesu FT901DM, complete with instruction book and service manual, as new, \$850. (03) 67 2338 BH.

FTDX401 Yaesu HF Txcvr., 80-10, in excellent cond., with Foster dynamic mic. and SP401 matching speaker, handbook and orig. packing, may be inspected locally or on air tested, \$420 the lot, or \$380 txcvr. only. Sergio VK7SG, QTHR. Ph. (002) 34 1258.

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Yaesu FT101EE, perfect cond., AC, DC, both cables, CW xtal filter, fan, mic., instruction manual, spare final tubes. \$450. VK3NC, QTHR. Ph. (055) 81 1363 evenings.

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Icom IC202E 2m SSB Txcvr., incl. leather case and "Rubber Ducky" antenna, mint cond., with manual and orig. packing, \$180. Bernie VK3BZW. Ph. 458 1414.

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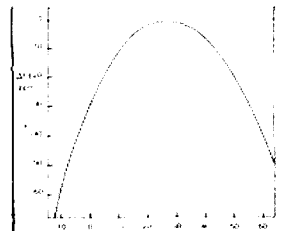


SPECIFICATIONS

- Nominal Frequency 32.768 KHz
- Frequency Tolerance +30 ppm/28° +1°C
- Drive Level 1uW max.
- Series Resistance 31.0 kOhms max.
- Q Factor 40,000 min.
- Parabolic Curvature Constant Less than —0.04 ppm/°C (Refer Fig. 1)
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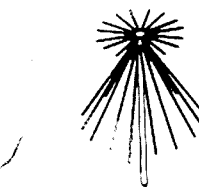
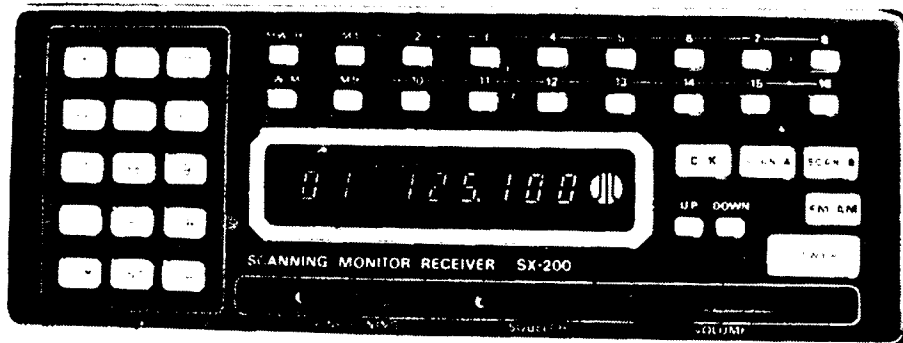
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J.I.L.

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SPECIFICATIONS

- Type: FM & AM
- Frequency Range: a) 26-57.995 MHz Space...5 kHz
b) 58-88 MHz Space...12.5 kHz
c) 108-180 MHz Space...5 kHz
d) 380-514 MHz Space...12.5 kHz
- Sensitivity: FM a) 26-180 MHz 0.4 μ V S/N 12 dB
b) 380-514 MHz 1.0 μ V S/N 12 dB
AM a) 26-180 MHz 1.0 μ V S/N 12 dB
b) 380-514 MHz 2.0 μ V S/N 12 dB
- Selectivity: FM More than 60 dB at -25 kHz
AM More than 60 dB at -10 kHz
- Dimensions: 210 (W) x 75 (H) x 235 (D) mm
8-1/4 (W) x 3-1/4 (H) x 9-1/8 (D) in.
- Weight: 2.8 Kgs.
- Clock Error: Within 10 sec./month
- Memory Channel: 16 Channels
- Scan Rate: Fast 8 Channels/sec.
Slow 4 Channels/sec.
- Seek Rate: Fast 10 Channels/sec.
Slow 5 Channels/sec.
- Scan Delay Time: 0 or 4 sec.
- Audio Output: 2 Watts
- Ant Impedance: 50-75 ohms
Whip or External Antenna with
LO/DX Control (20 dB ATT.)
- Freq. Stability: 26-180 MHz ... Within 300 KHz
380-514 MHz ... Within 1 KHz

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For example the tremendous frequency coverage, which encompasses all of the following bands:— HF & UHF CB, 27 & 155MHz MARINE, Australian LOW BAND, AIRCRAFT band, VHF SATELLITE band, 10Mx, 6Mx, 2Mx and 70CMx AMATEUR, VHF HIGH BAND and UHF T λ O-WAY band. Other features include Automatic detection of AM or FM on all bands, Squelch Circuitry that can be used to LOCK OUT carrier only and spurious signals, Fine Tuning control for off channel stations, 240 VAC plus 12VDC operation, Squelch Operated Output that may be used to trigger a tape recorder or channel occupancy counter and accurate Quartz Clock.

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Vol. 50, No. 4 APRIL 1982

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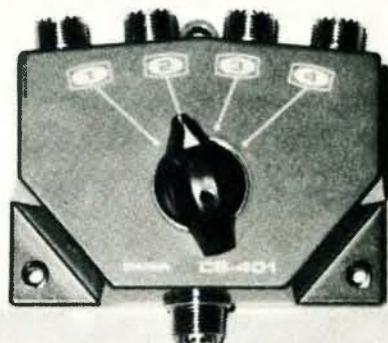
REVIEW OF THE ICOM IC730



*A Three Band Vertical
Capacity Meter with Auto
Ranging*

*The Australian Broadband
Dipole*

*Competition: **WIN THIS SWITCH***

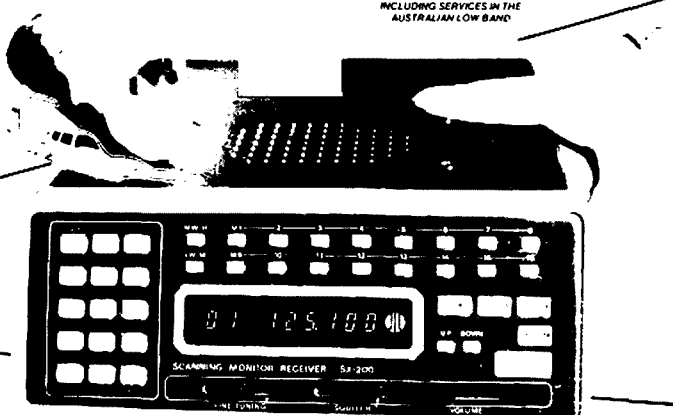




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FS 10H	Same as FS-10HF but without crystals.	166.00 (144.00 - S.T.)
FS 10L	Low band version of FS-10H Crystals to order for FS 10 (2 weeks delivery)	166.00 22.00 (18.30 - S.T.)
G-01H	Short Helical Antenna for FS-10H.	12.10 (10.50 S.T.)
G-01L	Short Helical Antenna for FS-10L.	12.10 (10.50 - S.T.)
G-0C	Leather Case for FS-10.	12.10 (10.50 - S.T.)
PS-393	Car adapter/charger for FS-10.	12.10 (10.50 - S.T.)
163G	Gutter mount CFA Antenna.	19.00 (16.00 - S.T.)

MARANTZ

C-800	VHF 10CH Rx, 1CH Tx scanning Tcvr	197.00 (171.00 - S.T.)
C-800 HB	Same as C-800 but no crystals.	178.70 (155.10 - S.T.)
C-800 HBH1	Same as C-800 HB but High Power TX	191.00 (167.00 - S.T.)
C-MA2	Car Mount/Charger for C-800.	24.30 (21.00 - S.T.)
C-CC	Carrying Case for C-800.	12.10 (10.50 - S.T.)
C-EA	Earphone for C-800.	2.40 (2.10 - S.T.)

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SX-200 NEW	Programmable HF/VHF/UHF scanning receiver, 26-180, 380-514MHz, AM & FM. Includes Australian low band and Air band.	512.00 (452.67 - S.T.)
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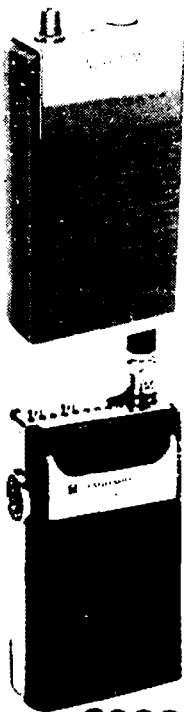
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PUBLICATIONS

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US Callbook	United States Call Listing.	20.00
Foreign Callbook	Call Listing of the World.	19.00

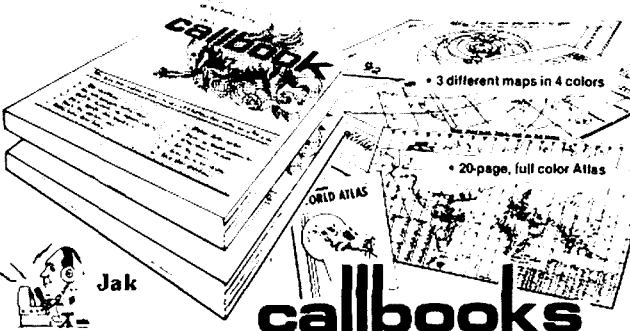
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SPECIFICATIONS

- Type FM & AM
- Frequency Range a) 26-37 995 MHz Spare 5 kHz b) 58-88 MHz Spare 12.5 kHz c) 108-180 MHz Spare 5 kHz d) 380-514 MHz Spare 12.5 kHz FM at: 26-180 MHz 0.8 V 5 N 12 dB b) 380-514 MHz 1 D.V 5 N 12 dB AM at: 26-180 MHz 1 D.V 5 N 12 dB b) 380-514 MHz 2 D.V 5 N 12 dB FM More than 60 dB at -25 kHz AM More than 60 dB at -10 kHz 210 (W) x 75 (H) x 235 (D) mm 8.1 g (M) x 3.1 g (F) x 9.1 g (D) in 2.8 Kgs Within 10 sec. month 16 Channels Fast 8 Channels/sec Slow 4 Channels/sec Fast 10 Channels/sec Slow 5 Channels/sec 0, 3 or 4 seconds 2 Watts 50 75 ohms Whip or External Antenna with LO DX Control (20 dB ATT) 26-180 MHz Within 300 Hz 380-514 MHz Within 1 KHz
- Selectivity
- Dimensions
- Weight
- Clock Error
- Memory Channel
- Scan Rate
- Seek Rate
- Scan Delay:
- Audio Output
- Ant Impedance
- Freq Stability



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amateur radio

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WIA NEWS

AX PREFIX

Many may have forgotten that the AX prefix will be available from 15th August to 15th October 1982 inclusive. The letter of authority from DOC concerning this is reprinted here once more —

"I refer to your letter of 15 September 1981 relating to a request for the special call sign prefix "AX" to be made available for Amateur Station use during the 1982 Commonwealth Games in Brisbane.

I am pleased to advise that in accordance with the mutually agreed guidelines for the use of special amateur call signs, approval is granted for the "AX" prefix to be available for optional use by all Australian Amateur Stations during the period of 15 August 1982 to 15 October 1982 inclusive, to mark the occasion of the Commonwealth Games.

It would be appreciated if you could publicise the matter via the usual channels available to the Institute."

FEDERAL AWARDS MANAGER

Reminder. By the time you read this the work of the Federal Awards Manager will have changed hands from Bill Verrall VK5WV to Mike Bazeley VK6HD.

IARU R3 ASSOCIATION

Normally this would appear under "International News". However, Peter Wolfenden VK3KAU, the Federal President, and David Wardlaw VK3ADW, the WIA's Joint IARU Region 3 Liaison Officer, will be attending the Association's triennial conference in Manila

from 2nd to 5th April. In addition, Michael Owen VK3KI will be attending in his own right as a Director of the Association. See "International News" for further details.

1982 FEDERAL CONVENTION

It was hoped that most of the Agenda Items for the Federal Convention would have been submitted in sufficient time to be publicised in this issue of AR. This has generally not eventuated this year but an item submitted by VK5 proposes a "Special Purposes Fund" centrally as a reserve for the costs of supporting litigation involving amateurs in such matters as towers, TVI interference, etc. An item submitted by the Executive seeks to discuss the agreement reached with DOC for the optional use of the AX prefix for events of national importance.

Another Executive item draws attention to WCY83. 1983 has been proclaimed by the United Nations General Assembly as World Communications Year for world-wide preparations and general co-ordination by the ITU. Amateur radio has a place in any proposed activities. Incidentally, World Telecommunication Day this year is 17th May. Forward planning matters initiated at last year's Convention are to be further discussed and finalised, resulting from the excellent work carried out by VK1RH and VK4DT.

MAGPUBS

As a generality, stocks of reference books are satisfactory, but overseas mailings are taking a longer time to reach us than in years gone by. A WIA international diamond style of badge with a scroll upon which to engrave or emboss the owner's call sign should shortly become available. ■



SSB, THE SPECTRUM SAVER?

Another quotation from TT by Pat Hawker G3VA in February 1982 Rad. Comm. could be a useful discussion topic:—

"One cannot help feeling that the additional complexity of ACSB is yet another indication that perhaps professional communications engineers should have paid more heed to the many warnings, 20-25 years ago, given by J. P. Costas W2CRR that unprocessed SSB was an INFERIOR system in a number of respects to DSBSC, and in non-channelized bands does not even result in saving spectrum! Recently Dick Rollema, PA0SE, brought to my attention the forceful four-page letter Costas wrote to 'Proc IRE' (April 1957, pp. 534-7). While his valiant battle for double-sideband was, it would seem, irretrievably lost many years ago, I cannot refrain from a few extracts:—

"A significant increase in usable channels cannot be obtained by use of SSB except in those very special communications applications where the dynamic range of received signals can be controlled . . . Again let me repeat that the DSB(SC) system represents an improvement over the present AM system. I would like to remind the reader that we may be far better off to improve what we now have rather than to seek a cure for our present problems by discarding completely the old, and accepting something entirely different. This state-

ment may draw the accusation that the writer is not of a progressive frame of mind. I would deny this by stating that progress and increased complexity are not necessarily synonymous. True progress in my mind is achieved when improvements are obtained without a significant increase in complexity . . . The vast majority of those people who promote and defend SSB are forward-looking people who have seen the advantages of a new system and are anxious to put it into general use for the common good. As commendable as this attitude might be, there has been the tendency on the part of many of these people to make a 'sacred cow' out of SSB . . . true progress will be hindered rather than helped by such an attitude."

That was 1957, since then SSB has served amateurs well and few now regret that the double-sidebanders lost the argument . . . but the evidence accumulates that they were right! ■

DOUBLE-SIDEBAND (DSBSC) TRANSMISSION

Although some amateurs from time to time have used DSBSC on the air, they generally receive little encouragement from those who feel that no transmission in crowded amateur bands should 'occupy' more bandwidth than is absolutely essential. At first sight this seems a logical enough viewpoint until one delves fairly deeply into the cogent and detailed arguments that were advanced by Costas to show that, in non-channelized bands, narrowband SSB is excessively vulnerable to interference and does not actually result in spectrum saving.' ■

BRILLE READER

The Telecommunication Journal of the ITU for Jan., '82, records the debut of a braille reader, for use with Prestel video text service, at the National Aids for the Disabled Exhibition on 21st October, 1981, in the U.K. The TV screen is replaced by a flat box about the size of an attache-case. Recessed into its surface is an array of tiny flat-topped pins. Electronic equipment raises selected pins to create in braille the information being called up from the Prestel computer. Production models are expected to become available in 1982. ■

SAFETY HAZARD — TDI

What is TDI? Toluene di-isocyanate. In vapour form irritating and harmful to the eyes and respiratory system — asthmatic attacks may result from exposure unless under good ventilation conditions. TDI vapour is given off when soldering copper wire with a synthetic enamel based on a polyurethane film. This kind of solderable varnish may also be used on many printed circuit boards. Rad. Comm. TT, February 1982. ■

JOTA 1982

Book the days 16th and 17th October, 1982 for the 25th Jamboree on the Air. Special participation in the event this year is requested to mark this anniversary. A special call sign, VK4SAJ, has been allotted to the Queensland Br. H.Q. a.r. station for use during the 13th Australian Jamboree at Collingwood Park, near Ipswich, for the period 29th December, 1982 to 7th January, 1983. This call will also be heard from the same site during JOTA. ■



QSP



The Way Ahead

The preservation of a piece of open space within a rapidly developing district is perhaps only akin to retaining the concept of amateur radio within our "exploding" communications scene.

Superimposed is the obvious need for members, for without a large amateur population there would be little strength. On the local scene strength provides the means for bargaining with governments and authorities — on the international scene, the more countries with organised amateur radio, the more chance we have of maintaining spectrum allocations particularly at international conferences such as World Administrative Radio Conference.

During April, the Region III Association of the International Amateur Radio Union will be meeting in Manila to seek (amongst other things) ways of promoting amateur radio in this part of the world, i.e. generally the Asia/Pacific area.

Besides considering reports from the various Societies represented, consideration will be also be given to matters like International licenses, future microwave band requirements, intruder watch, EMC, International beacon projects, etc.

Amongst the papers prepared by the WIA will be one dealing with the first five years of the Australian Novice Licence. Without detailing the report here, it is worth noting that in general Australian Novices ARE upgrading. Indeed a recent survey revealed that 56 per cent of Novices who obtained their licenses five years ago have upgraded, 44 per cent to Full Calls and 12 per cent to Limited or K Calls. These figures do not take drop-outs into consideration (approx. 8 per cent). Of course we have no way of knowing how many of the sample surveyed were not active but merely were reserving their call signs.

A similar trend exists for those Novices holding licences for three years, although as to be expected, the upgrading rate was not quite as high.

The point is that if a Novice holds his licence for five years, he is likely to upgrade — the actual rate of ACTIVE Novice upgrading is impossible to determine, but it could be as high as 75 per cent.

The significance of this is that the Australian Novice licence scheme IS working — as many, including the Institute, had hoped it would — i.e. by providing the first easy stepping stone for interested members of the general public to enter the world of amateur radio.

It follows that countries which may wish to swell their amateur ranks could take advantage of our type of Novice licensing and thereby increase the world's amateur population and bargaining power.

The United Nations has declared 1983 as World Communications Year (WCY '83) which is another matter to be raised by Australia at Manila: the need for involvement of amateurs in WCY '83.

WIA's view is that amateurs surely have a place in the proposed celebrations and activities. Australia is recommending to IARU that amateurs do become involved and thus the IARU seeks means of helping, especially the smaller amateur societies, in developing countries.

I am sure that you will be learning much more about WCY '83 in the coming months.

TO SURVIVE, AMATEURS MUST BE PART OF THE PUBLIC — NOT REMOTE FROM IT.

What do you think?

P. A. WOLFENDEN VK3KAU
Federal President



Grind, Ground, Grounded — an Abrasive Subject

By Joe K5JB

Hardly a magazine is published, particularly one containing an article on antennas, or equipment safety, that doesn't contain some reference to equipment grounding, or grounding for some RF circuit purpose. We who live in an area of high probability of thunderstorms are acutely aware of the need to provide proper grounding for lightning protection. We all agree, I'm sure, that it is desirable to provide good ground connection between items of equipment for reasons of safety. The subject of grounding I thought might bear some discussion is that related to antenna circuits where earth ground acts as an active part of an antenna. The same thoughts on the subject also relate to grounding of equipment to eliminate the "hot microphone" syndrome.

What brought the subject to mind was a recent magazine article which contained the information that the writer had to drive a 40 foot ground rod to obtain a good earth connection! On 40 metres, 30 feet, or so, is a quarter wavelength. A ground 40 feet long is no more an RF ground as a strand of wet grass. Counterpoise, maybe, but ground, no. In reality, what the fellow had was half of his antenna buried, and that doesn't make for such good efficiency. It might help to visualise an antenna circuit like shown in Fig. 1 before we go into the heavy stuff.

The quarter wave ground plane shown in the figure could be UHF, VHF, HF, or whatever, the principle being the same. The problem is more recognizable at HF because more amateurs experiment there. At VHF and UHF it is more common to "buy it and stick it up", besides, the ground plane is relatively small and is fabricated as part of the antenna anyway. The ground plane shown in the figure is about as real as the "free space radiation pattern". If

one could pave a lot with sheet metal for a distance of $\frac{1}{4}$ wavelength radius from the base of an antenna, he could make some fair assumptions regarding the radiation resistance of his ground plane. No doubt someone has done that but the most elaborate effort usually attempted is to put a hundred or so wires in the soil, radiating from the base of the antenna. In the ordinary installation, the antenna circuit can be represented by the equivalent electrical circuit shown on the right side of Fig. 1.

XL and Xc are equal in magnitude and simply mean the antenna is being represented by a series resonant circuit. In a series resonant circuit, current is a maximum at resonance. The current through the resistor represented by R_r plus R_p is also maximum at resonance. R_r is the radiation resistance, a concept that pretends that all the RF energy radiated is being dumped into a resistor. R_p is a parasitic resistance caused by skin effect in wire, dielectric losses, etc. In a well designed antenna, R_p is small, in a Hustler mobile whip R_p is large. In a mobile installation, for example on 80 metres, radiation resistance may be 5 ohms. If the feedpoint impedance of a simple loaded whip without matching network approaches 50 ohms, there is a loss resistance somewhere totalling 45 ohms. Some of this is the R_p in the coil and some is the R_g shown in Fig. 1. Power fed from the transmitter is divided between these resistances in proportion to the values of the resistances. In this example, one-tenth of the transmitter power is fed to the radiation resistance and nine-tenths is fed to the loss resistances. Efficiency is 10 per cent. In this case, the signal will be 10 dB down from a 100 per cent efficient antenna, which is impossible to have on a car anyway.

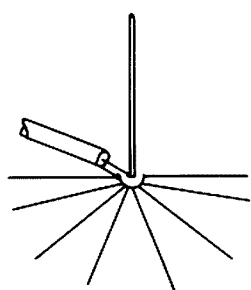
Fifty per cent efficient is probably a more reasonable goal on 80 metres.

At the fixed location, grounding is not so drastic a problem. The antennas are much bigger than an auto whip. Radiation resistance on 80 metres might range from 15 ohms on a trapped vertical to 35 ohms on a full quarter wavelength vertical. If a perfect ground plane can be assumed, and SWR is measured to be near one, it is safe to assume losses in the coils of the trapped antenna are contributing the 35 ohms to add to the 15 to get 50. The ground plane can be more likely assumed to be less than perfect so part of that 35 ohms will be found in the ground connection. On the full sized quarter wavelength antenna there will be some loss from skin effect but it is a good bet that there will be a major loss from the ground connection. Without an antenna bridge, it is difficult to tell if SWR other than one is caused by feedpoint impedance greater or less than the characteristic impedance of the transmission line. If someone told me he measured 1.5 to 1 on a quarter wavelength vertical made of aluminium tubing, I would bet the feedpoint impedance was about 75 ohms (if the measurement was made at resonance). About 35 ohms of this would be radiation resistance, the remaining 40 ohms would probably be 10 ohms or less in the tubing and 30 ohms, or more, in the ground connection. In any case, I would consider this a pretty good antenna system (for a vertical). The loss would be only about 3 dB over a perfect antenna.

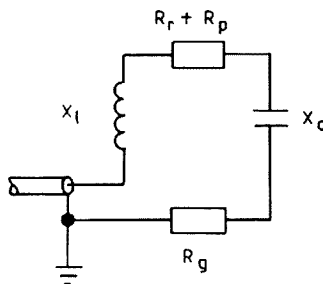
Where the real problem arises is where a loaded antenna 20 feet long is made to resonate on 80 metres. With a 50 ohm feedpoint impedance, about 35 ohms is sneaking around in the circuit somewhere soaking up two-thirds of the transmitter output. With a mediocre ground consisting of a single ground stake, probably more than 80 per cent of the RF is contributing to the discomfort of the resident earthworms.

Driving several ground stakes has two beneficial effects. Multiple ground leads divide the inductance like parallel resistors. Each ground stake creates another current path into the surface of mother earth. I doubt the effectiveness of salting the ground around a ground stake unless it is done for a considerable distance around the stake, perhaps a radius of 8 or 10 feet.

One way to avoid the problem of poor ground conductivity if one insists in using a vertical antenna, is to put up a half wavelength antenna. Fred W5NL and I succeeded in doing that last fall on our trip to Pagosa Springs. We took advantage of some tall pine trees and put a top loaded half wave up and tuned it with a matchbox at the bottom. This is the only vertical HF antenna I ever used that worked as well as the dipole. With the thing voltage



QUARTER WAVE GROUND PLANE



EQUIVALENT CIRCUIT

FIG.1 ANTENNA CIRCUIT GROUNDING

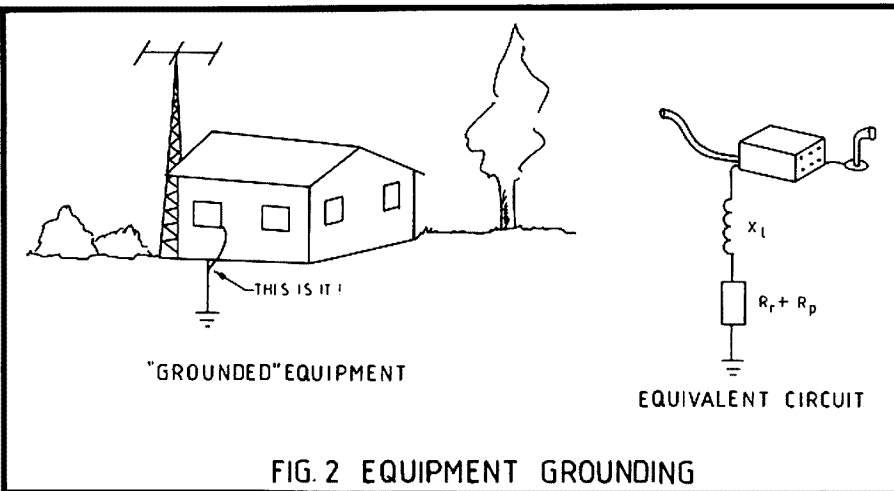


FIG. 2 EQUIPMENT GROUNDING

few turns of coax at the antenna feedpoint or a few feet added or removed from the transmission line will usually do the trick. One of the antenna manufacturers used to routinely advise about three or four turns be wound in a four or five inch circle and be taped to the boom of the antenna near the feedpoint. This is much better advice than adding a balun which MAY serve the same purpose, even if it is unnecessary for any other reason, on HF anyway.

Referring to the old wives' tale of pruning the coax to lower than SWR, or using the "proper" length of coax, I feel that this myth was started partly by the phenomenon of certain SWR bridge designs being sensitive to RF voltages present on the outside of the coax, and thus, on the case of the instrument. No, the voltage on the inside is not necessarily the same as the voltage on the outside of the coax. That's the neat reason for its invention. The same effect that causes the spurious responses of this type of instrument is what causes all the grief in the shack.

When it is impossible to reach ground from the equipment location, the concept of the counterpoise can be applied. In an apartment, for example on the tenth floor, ground is too far away to be of any use except for lightning protection, as already noted. A piece of wire draped over the window can act as a virtual ground by virtue of the radiation resistance it represents. Usually a quarter wavelength wire is used as a counterpoise, its radiation resistance is low, compared to no ground at all, and it will serve the purpose of stabilizing the RF voltage on the equipment. Counterpoises are used as an active part of antennas when it is not possible to obtain a ground in any other way. Since considerable amount of current can flow in a counterpoise if the driving source is low impedance, radiation from the thing can be considerable. If one is being used to stabilize nuisance voltages on equipment, driving impedance is probably low, and resulting radiation will probably be low. A separate counterpoise is needed for each band, except where odd harmonics are involved and the thing can be operated as a 3/4, 5/4, etc., wavelength mode. Simplest thing I ever did in this regard was tie a wire to a fishing sinker and adjust the length as necessary to match the band of operation. One time I ran several wires around in a motel room to form the counterpoise. One was attached to the commode, one to a convenient outlet ground and one left lying on the floor, extending to the far corner of the room. If the antenna being used is voltage fed, the ground can be pretty casual, as illustrated in Fred's and my experiment with the half wave vertical.

Well this turned out to be a lot of rambling about a rather mundane subject, but perhaps it might provoke some thought.

Reproduced by arrangement from "Collector and Emitter", Central Oklahoma Radio Amateurs Bulletin, October, 1981.

fed, current at the feedpoint was so small that any crummy ground was good enough. Feedpoint impedance was probably a couple of thousand ohms. With a couple of hundred ohms in the ground connection, it was no big deal. SWR was at least 40 so we had to use the matchbox!

RF grounding of equipment is another crazy subject where a lot of mistakes are made. Unless a ground wire is very short, it will have a high enough impedance to act like a choke and hardly any RF current will flow at all. The worst case is a quarter wavelength of wire. In fact, in some antenna and transmission designs, quarter wavelength components form "metal insulators". If it is more than 6 or 8 feet from a hot piece of equipment to the "earth ground" electrode, one might as well forget grounding as a cure for the "biting microphone" problem. It would probably be better, in that case, to eliminate the cause of the "hot equipment". In theory, one can tune the ground lead to series resonance by adding a suitable coil or capacitor. Multiple ground leads would be needed if the problem occurs on more than one band.

Fig. 2 shows a typical "grounded" system with a ground wire running out a window to a ground stake. The ground stake can be perfectly connected to mother earth but unless the ground lead is very short, the circuit formed will resemble the equivalent circuit shown in the figure.

In the equivalent circuit, X_L is the inductance of the ground lead. R_r and R_p are the radiation and parasitic resistances, respectively. They may be small compared to the inductive reactance of the wire and may be insignificant if the inductance is tuned out with a suitable capacitor to bring the ground lead to resonance. R_r is the same radiation resistance of any antenna though and the ground lead will be radiating and adding to the field of the antenna. Perhaps distorting the design pattern of the antenna. If this type of ground lead is intended to solve the "Hot Mike" situation, it may be effective in reducing the problem, but again, it would probably be better to eliminate the source of high RF voltage on the equipment.

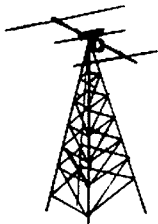
Grounding for lightning control purposes

should be handled differently. Ground leads should be direct from the air terminal (antenna) to the ground point. Large diameter wire should be run from the antenna to the ground without any sharp bends (unnecessary inductance). The ground should have less than 25 ohms resistance to mother earth.

Grounding between equipment can be tricky sometimes. Safety grounding is not too difficult because almost any old wire will do. If there is a ground fault in equipment, any wire capable of conducting enough current to open a fuse or circuit breaker will be a suitable safety ground. If three wire plugs are used on all the equipment, no other safety grounds are needed. RF grounding is another story. I had one particularly sensitive item of equipment that required two ground wires of different lengths to settle an audio problem down when operating the legal limit on HF. The cause of the problem was an untidy antenna installation but correction of the problem was like fixing a leaky roof, when it was time to call a net, there wasn't time to mess with the antenna. I just grabbed a bucket and put it under the leak.

One common cause of unwanted RF in the shack is unfortunate choice of feedline length and antenna layout creating highly efficient receiving antenna situations, with the equipment on the shack falling near a voltage loop. One favourite example is an 80 metre antenna fed with 60 feet of coax (stand by, this has NOTHING to do with pruning coax to lower the SWR). One leg of such an antenna and the shield of the coax is half a wavelength long. With such tight coupling, voltages and currents can be quite high at certain points. With a kilowatt fed to the antenna, about 1700 volts will appear on the ends of the antenna. If coupling is good and there is no control of the RF voltages on the equipment, similar voltage can appear on the microphone, creating a serious case of lip burn, to say the least! Of course, this kind of voltage will never appear in real life but the lips are sure sensitive to lesser amounts!

The most common solution to this kind of problem is to change the resonances of the antenna/transmission line system. A



Are You Insured?

Jim Joyce VK3DFD
44 Wren Street, Altona 3018

Mid-afternoon on Saturday, 24th January, 1982, a mini tornado swept through many suburbs of Melbourne, leaving a path of destruction.

The day I found out how good my insurance company was, was the day we had a mini tornado come through Altona (Vic.). My near new Nally wind-up tilt-over tower and TH6DXX had no hope against a wind that left a path of damage unheard of in this area in living memory. 100-year-old pine trees that were up to 8 feet across came down like match sticks, unfortunately killing two people. The local park looked like a battlefield, with many people seriously injured, as the park was filled with people trying to get relief from the 40 degree temperature at the local beach. Luck was with a chap trying out his small 10 foot sailing dinghy on the local lake. When the wind hit, he was under full sail. He took off across the water at a speed that would have left Ken Warby, the water speed record holder, envious, across 100 metres of grass bordering the lake, still in the boat, across a divided highway (luckily the cars had stopped due to the storm) and disintegrated his boat against a chainwire fence, about 250 metres from the nearest water, a very groggy yachtsman. I wonder how he explained his accident to his insurance assessor. He would be the first man to break both the water and land speed record within 30 seconds.

The damage to tower and beam plus the back fence blown down and tiles missing from our house roof, the damage to this QTH was also above the minor degree. As far as I was concerned, of course, the first job was to get back on air (after fixing leaks in the roof and propping up the back fence).

The insurance assessor was down the next morning asking to see the major damage. "There," said I, pointing to the tower and beam. He surveyed the scene, the result being that I had to get a quote for the tower repairs and new beam, and he would organise the house repairs. Two days later the tilers arrived, but the antenna and beam were up to me. After ringing the Sydney agents of Hygain, I was informed that a quote would be in the mail that week, which it was. Unfortunately, there were no TH6DXXs in stock, and one would have to be shipped from the States. The tower was no problem, after ringing Nally Towers I was informed that no top sections were made up, but they would get one started that week and have it installed within a fortnight. So I now had a quote on a TH6DXX from Sydney, \$492 plus shipping \$8, total \$500 for the beam, and a quote from Nally Towers, \$285, plus fitting new section, remove rotator, beam, and refit, total \$420. Total cost of damage, \$920. After finding out the cost I rang our

insurance agent. He said no problems, first get it fixed and we will forward the cash. Any difficulties paying bills, send them to the company and we will pay them. They have got my business for life with that attitude.

REPAIRS

After settling that aspect, the next thing was to get back on air, one way or another. On looking at the tower, it had folded back against the fulcrum point, so to get it down meant a block and tackle attached to the top of the tower and a tree base in the back yard, and by slackening off the tower winch and pulling on the block and tackle over came the tower until it was at ground level, with the broken part still looking up in the air at a 45 degree angle. With the aid of ropes and a hacksaw, that also was on the ground, the only problem being on the way down the rotator, having been upside down in the broken tower during the storm, had filled with rainwater, and as the tower came over, about two litres of water poured out of the CDE tail-twister rotator. "Oh no," I said, "looks like another call to the insurance agent", but on getting the broken part of the tower down and draining the rotator of excess water, spraying with liberal quantities of CRC and re-greasing all parts, it worked like a charm. Of the broken tower, the part still left in the tower was soon removed with the same block and tackle and a crowbar and hacksaw. I finished up with 8 ft. of the top section of tower that went back into the bottom section, held in with muffler clamps. I now had a 25 ft. tower.

The next problem was what was left of the TH6DXX. What a mess. I started at the boom and found by cutting out three pieces that were bent at rightangles I finished up with a boom 2 ft. shorter than the standard. The reflector was also a mess, but by using a piece of the driven element and a sleeve, one side was fixed, the other side required an extra 2 ft. of bought aluminium, and it was fixed. Progressing this way up the elements, I finished up with three and a half original elements and two and a half elements of aluminium, bought at a local supplier. It pays to buy offcuts at \$1 per piece. Total cost to repair beam was \$12. I now own a TH3½? with a boom 2 ft. shorter and an upwards left-hand twist. Three of the traps were on the loose side. These were pulled apart, checked and sprayed with CRC.

A point to note here is the eerie whistling noises that used to come from the traps due to the wind blowing past the holes in the bottom. I found that covering

the traps with electrician's tape, with silastic over the ends to stop the tape unravelling, and the holes in the traps opened up with rough edges, stopped the whistles and probably pleased the neighbours no end. All the joints and electrical contacts were covered with anti-corrosive paste.

Now for the crunch, would it work or was it all wasted effort? It was with great trepidation I cranked up what was left of the tower and beam. After putting the VSWR meter into circuit I found to my delight that I had:—

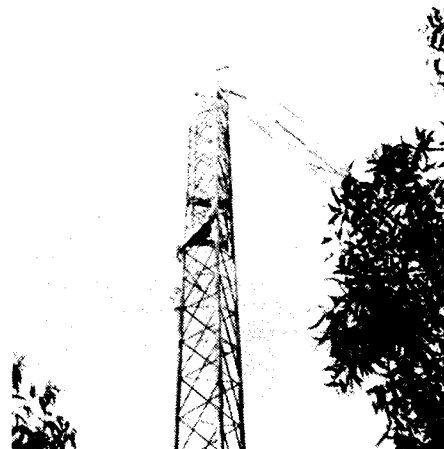
10 metres 1.3 : 1, 15 metres 1.4 : 1, 20 metres 1.3 : 1 at 27 ft. high.

It should improve at full height as it was 1.1 : 1 before the storm.

IT WORKS!

I thought this too good to be true, so listening to a dogpile, I found T2GMM working into the States at 5-8. On calling him, I got 5-9 + 20 dB. He was 5-8. We were back on air, total time was a week.

Conclusion, make sure you have a good insurance cover for your tower and beam, not just a cover against damage to property if it falls down. Pick a tower that is easy to get parts for in your local area. With our local shipping the way it is, it could take months to get replacement parts from overseas. Last, but not least, have an antenna that will work with a bit of a patch-up. I have nothing but praise for the way the TH6DXX performed after the bashing it got. Who knows, I might make a TH9DXX out of the two on a 36 ft. boom when the new antenna arrives from the States. What a job fixing that if it comes down in the next storm. Back to DX hunting. 73. ■



Jim's Tower

The Australian Broadband Dipole

A basic antenna, created in Australia, helps Botswana's News Service.

A paper titled "District Radio News Reporting — (A Low Cost Approach)", submitted to the East, Central and Southern African regional meeting of Broadcast Engineers by Mr. D. W. Harris, C.Eng., MIEE (A22BX), Deputy Director of Broadcasting (Engineering) at Radio Botswana, has been condensed due to space limitations, although the improvements developed by the Botswana engineers are reproduced in full, including diagrams for those that may wish to reproduce or further develop the aerial.

SUMMARY

The collection of news material for radio poses problems in many under-developed countries, where communications by road and telephone are unreliable and of poor quality over great distances.

This article describes an approach to the problem using HF transceivers in Botswana.

BACKGROUND

In common with many other developing countries, Botswana has internal communication difficulties. Roads are long and often poor in rural areas. The telecommunications networks are hardly developed at all.

Therefore, a frequent criticism of Radio Botswana has been its lack of "Botswana news". It became necessary for the station to place a high priority on rapid passing of news from districts to the capital.

THE TECHNICAL PROBLEMS

An obvious solution was to use radio. VHF was useless, except for the most local Information Offices, due to distances, but HF is subject to all sorts of interference, and SSB, if used, has a limited bandwidth unless highly sophisticated equipment is used. The choice of frequency is also critical to optimise signal-to-noise ratio and to accommodate frequency agility for remote installations would cause problems with aerials and tuning units. Also, there was the small obstacle of powering transmitter equipment.

Radio Botswana decided to investigate the use of HF SSB transceivers and overcome the problems involved. In the process, a low-cost aerial has been developed and some interesting information derived relating to non-technical staff tuning SSB signals.

THE TRANSCIEVER

A loose specification was drawn up and tenders invited from various commercial

manufacturers for the supply of SSB transceivers.

The TR7 transceiver manufactured by M/s. R. L. Drake Co. offered the choice of receiver bandwidths, operation over the whole HF band, broadband output circuitry, a general-coverage receiver, 12 volt power supply and good serviceability.

One of the most difficult requirements was a "wider" transmit bandwidth. Reaction from conventional manufacturers to the request for a transmitted bandwidth greater than the standard 2.7 kHz was not good.

The TR7 has a 2.3 kHz wide filter fitted as standard but it is mechanically possible to fit any range of filters (intended for receiving only) into the "transmit" position. It was decided to try this although specifically warned against it by Drake engineers.

Tests were done with a Drake SL-6000 6 kHz broadcast filter, but they were not 100 per cent successful, so in the interests of establishing the network the transceivers were restored to their original transmit bandwidth (approximately 300 Hz-2.6 kHz) and installed. This was a startling improvement to the telephone network.

The TR7s were used for about a year and the non-technical operators quickly learned to adjust both received frequency and RF gain for best results. A modification was made to each set to allow patching a tape recorder into the transmit mode to enable passing of actual material, such as speeches, for "same day" rebroadcast, which had been virtually impossible with the telephone network previously.

When the SL-4000, a 4 kHz filter, became available, tests were again carried out. These tests proved to be successful and the resulting passband for a correctly adjusted filter/carrier combination is approximately 350-4500 Hz, a great improvement over the usual SSB bandwidth and the telephone network.

AERIALS

Due to many problems in the field with unskilled operators, seasonal changes, etc., there were difficulties to find an appropriate aerial. A broadband aerial, covering the 3-10 MHz range, was what was required, which could be simply fabricated and installed, preferably using local materials. There are very few designs which satisfy these requirements, and the TR7, in common with the new breed of solid state designs, is intolerant of a high SWR. Full output can only be obtained when the aerial is matched to within 2:1, although the set will still operate with a

lower output if the matching is any worse than this.

A search through much technical literature eventually turned up a "Broadband Travelling Wave Dipole". This aerial was developed in the early 1970s and was claimed to have a relatively constant centre impedance of about 300 ohms over a wide bandwidth. A version was built, but it did not work but results were promising enough to merit further development.

After considerable trial and effort the version shown here was evolved. It differs from the original (AR, April, 1974 edition) by the addition of a third "tramline" down the middle. This simple addition resulted in a highly repeatable, non-critical aerial, which with the addition of a 6.25:1 balun showed less than 2:1 SWR from below 3 MHz to over 20 MHz. An important advantage of this antenna was it could be constructed very cheaply.

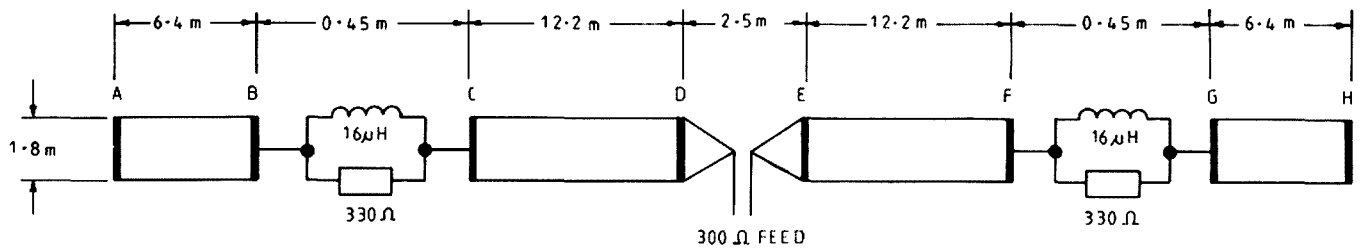
POWER SUPPLY

As there is no electricity supply at the Information Offices in the districts it was necessary to use batteries. The TR7 is essentially a 12V transceiver requiring about 1.8 amps on receive and up to 25 amps on transmit. Ordinary heavy duty car batteries were used but there were some difficulties to get them recharged, so it was decided to invest in solar panels. After a year of operation this has been entirely successful. A typical installation uses a 33 or 37 watt panel designed for 12 volt battery charging, with an anticipated battery life of around two years.

ACCURATE RESOLUTION OF SSB SIGNALS

Initially, doubts were expressed concerning the ability of the operating staff to accurately resolve incoming SSB signals. Many SSB transceivers are already in use in Botswana, by Government Departments, safari companies and the like, and a quick scan of the HF bands revealed appalling netting in many cases. It seems that, provided the recipient can make out what is being said, the "Donald Duck" sound is simply accepted as an unfortunate side-effect of SSB.

Naturally, accurate tuning was necessary if the received material was to be rebroadcast. It was a pleasant surprise to find that, after an initial training period, the news staff were able to hear mistuning and correct it using the usual RIT controls fitted to most commercial units. In this, they were helped by the digital display on the TR-7, which they seem to believe more than their own ears in some cases!



(A, B, C, D, E, F, G, H ARE 25mm DIA ALUMINIUM TUBES)

The original design

When the 4 kHz filters were introduced, the operational staff commented that it had become much easier to determine the correct tuning point with the extended bandwidth. There may be a lesson in this! No such improvement had been remarked on during the initial trials with a 6 kHz filter, but this was probably because of the intruding unwanted sideband noted earlier. It is also possible that they had not developed "communications ears" at that stage.

THE AERIAL (ORIGINAL DESIGN)

"A dipole can be modified by inserting resistive loading networks so as to produce standing waves between the feedpoint and the networks. The authors have, by adjust-

ment of the networks and the dipole sections, developed a travelling wave dipole whose VSWR is less than 2 : 1 from 3 to 15 MHz and does not exceed 2.6 to 1 from 2.3 to at least 30 MHz."

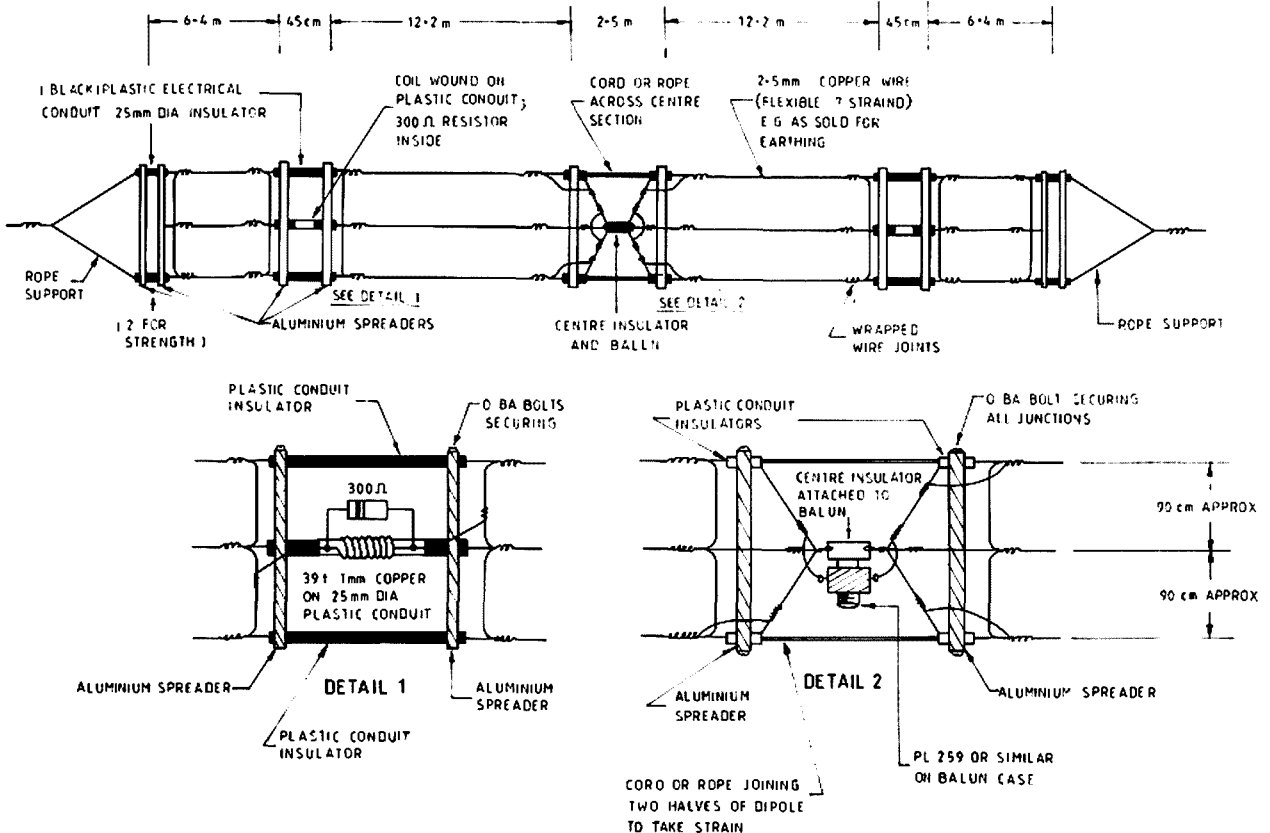
(A, B, C, D, E, F, G, H are 25 mm diameter aluminium tubes.)

"... neither the value of the 330 ohm resistors nor that of the shunt inductors was very critical. The shunt inductor has a small effect on SWR at the lower frequency end. However, reduction of the resistance to 150 ohms caused the SWR to fluctuate considerably with frequency. The taper sections were required to reduce shunt capacity between the spreaders D and E.

Reducing the length of this section produced an increase in SWR."

Elsewhere (the ARRL Antenna Handbook), the resistors are specified as 2.5 watts rating for up to 500 watts PEP. It is also recommended that the aerial should be erected at a height of at least 40 feet (13m).

Several versions of this aerial were constructed, with varying degrees of success. The principal problem was high VSWR in the 5 to 8 MHz region. In an attempt to experiment with the shunt inductance, ferrite rod was inserted into the conduit upon which the coil was wound. It was found to be possible to adjust for low SWR at various places between 3 and



LOW-COST BROADBAND TRAVELLING-WAVE DIPOLE (CONSTRUCTION DETAILS)

9 MHz, but clearly this would be a critical procedure in the field, and in any case, the problem was solved in a different way.

MODIFIED DESIGN

An additional wire was run down the centre of the "tramlines". This dramatically reduced the fluctuations in SWR, and virtually eliminated any critical adjustments. The height of the aerial seemed to have no effect upon its matching, although of course performance was changed slightly.

Details of the construction of the aerial are given in the attached diagram. A 5:2 matching transformer was wound on a standard 50 mm toroid as shown.

With the exception of the toroid, all materials were obtained locally. Approximately 100m of 7-strand, 2.5 mm overall diameter copper wire was used, as sold for earthing in domestic wiring installa-

tions. It was found convenient not to use the PVC insulated type, which simplified the wire-wrapping. Cheap, black plastic 25 mm electrical conduit was used as a coil former and to make the insulators. The aluminium spreaders were very simply made, using decorative aluminium strip approximately 25 mm wide and about 10 mm thick, formed as a half "U", and sold for fronting formica table-tops and the like! Ordinary O-BA bolts were used to hold the various strips and tubes together.

Because of past experience of ultra-violet damage to rope and plastics, some care was taken to select the appropriate materials. Black conduit was used because of its resistance to UV, and the aerial was suspended with ordinary fibre rope rather than nylon. However, it appears that fishing stores may also be a good source of

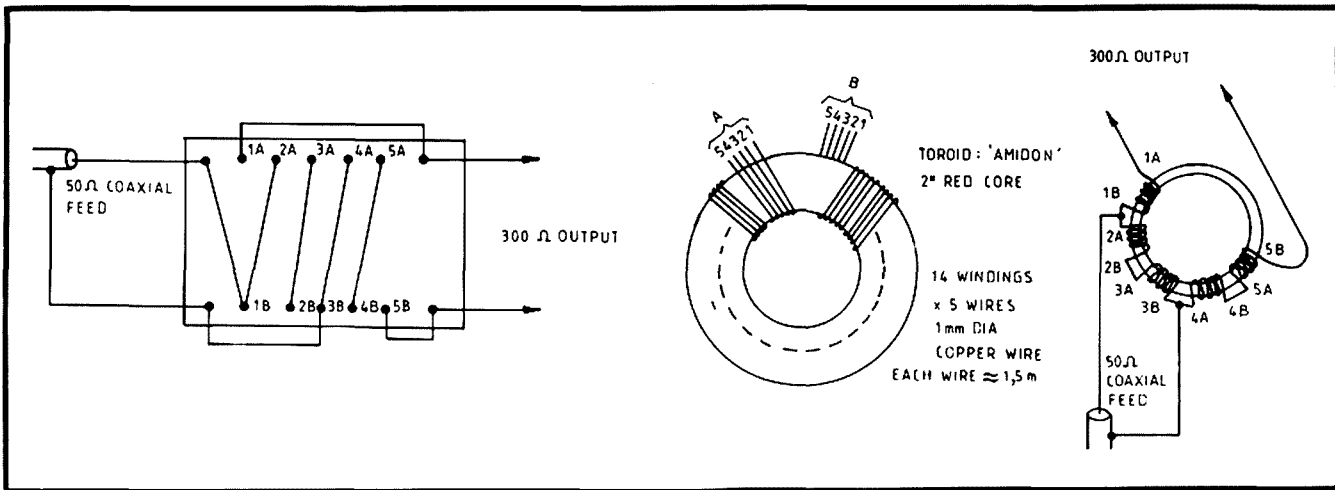
ultra-violet resistant polyester or similar rope.

The performance of a typical, un-adjusted aerial/transformer combination, with approximately 25m of 50 ohm coaxial feeder, is shown in the diagram. The aerial was suspended at about 40 feet.

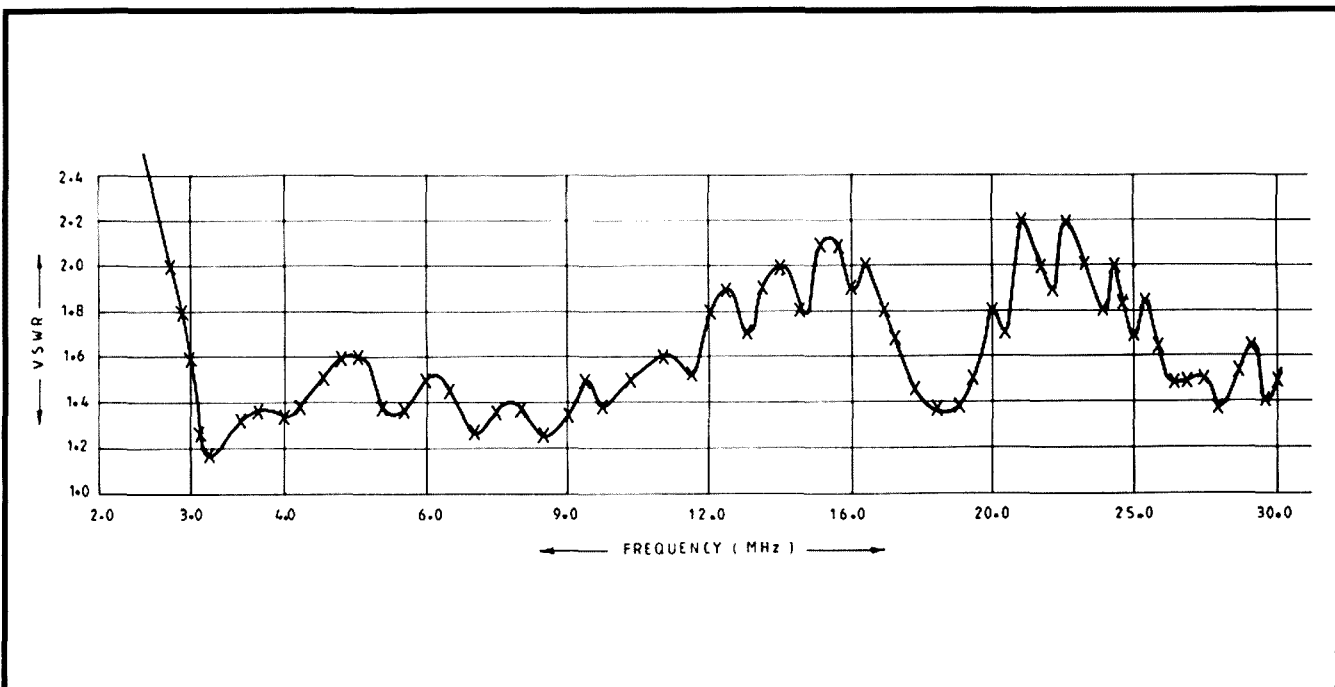
ACKNOWLEDGEMENTS AND REFERENCES

Based on a design by Dr. R. J. F. Guertler and G. E. Collyer, Antenna Engineering Australia (Pty.) Ltd.

1. "Report for the Government of the Republic of Botswana by the Consultant on Information and Broadcasting Services"—C. N. Lawrence, Commonwealth Fund for Technical Co-operation, December 1978.
2. TR-7 Service Manual; leaflet supplied with accessory filters.
3. "Amateur Radio"—Journal of the Wireless Institute of Australia, PO Box 150, Toorak, Victoria 3142, Australia. April 1974 edition.
4. ARRL Handbook.



Construction details of Transformer



Measured performance — wideband dipole VSWR against frequency

EQUIPMENT REVIEW



Ron Fisher VK3OM
3 Fairview Avenue, Glen Waverley 3150

A Review of the ICOM IC 730 Transceiver

With the proliferation of new transceivers on the market at the present time, it might be a surprise to many to know that the IC-730 is only the fourth HF transceiver that the ICOM Company have produced. Each of the four have broken new ground and have been quite distinct in the field. Let's look at each for a short time, it will perhaps give a picture of the design philosophy that went into ICOM's latest, the IC-730.

The first, the IC-700, was in three units. An amateur band receiver, a transmitter without VFO that slaved with the receiver and an AC power supply. Solid state design was used throughout with the exception of two 6146B finals for the transmitter. When one considers that this came on the market in 1968, it was perhaps somewhat ahead of its time. Many years were to go by before number two appeared, the first synthesized HF transceiver, the IC-701, again perhaps a little ahead of its time, certainly one of the more technically advanced transceivers of the time. The third, released almost two years ago, the IC-720 introduced an amateur band transceiver with full general coverage receive facilities and with the possibility of full coverage transceiver.

And so we come to the IC-730. It goes without saying that we can expect features that will put it ahead of its rivals.



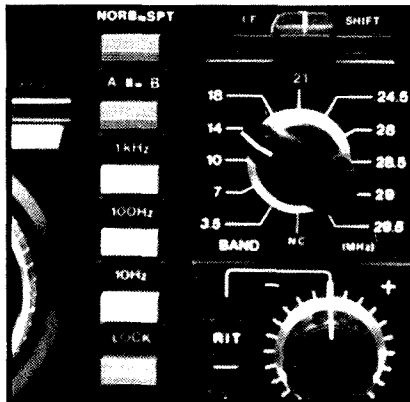
A CLOSER LOOK

Let's look at the 730 in detail and see just what it is and has to offer.

The 730 is a fully solid state HF transceiver with 100 watt output capability. It operates from an external 13.8 volt power source either your car battery or the

optionally available ICOM IC PS15 AC power supply. It covers all HF bands including the new WARC bands but with the notable exception of 160 metres. Dimensions and weight are almost the same as its more obvious competitors, but what goes on under the covers is rather different.

First off, the dimensions are 94 mm high, 241 mm wide and 275 mm deep. It weighs in at 6.4 Kg. The front panel is finished in smooth dark grey and the cabinet in the same colour but with a very fine rough texture. A very pleasing appearance. Each of the band positions covers just over 500 KHz with the ten metre band taking four segments. Reception and transmission is provided for the usual LSB, USB and CW, but in addition to these a wide selectivity AM mode is included.



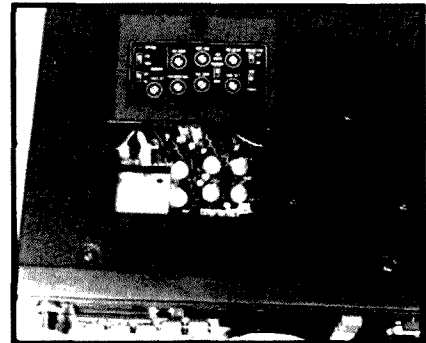
THE FRONT PANEL

As we might expect from ICOM, the tuning system is rather unique. Based on a CPU controlled synthesizer, three tuning rates 10 Hz, 100 Hz or 1 KHz are provided. In terms of tuning rate these work out at 1 KHz, 10 KHz and 100 KHz per tuning knob revolution, surely one to suit everyone. However, in addition to all of this, ICOM have incorporated two VFO's into the 730 to allow split frequency operation. Great, you say, but wait, the best is yet to come. For the first time in any of their HF transceivers, ICOM have included a memory system.

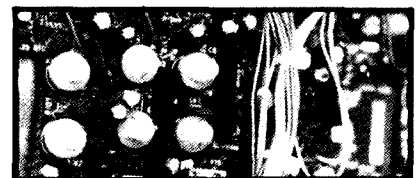
Enter your sked or net frequency on each of the several bands and there it is available any time at the push of a button.



Talking about buttons, most functions are push button operated. To mention only a few, VFO split, tuning rate, dial lock, RIT, MOX, VOX, noise blanker, AGC selection, preamp and the memory facility. An impressive total of fifteen buttons are logically laid out on the front panel but strangely only one LED status indicator is provided and this for the RIT.



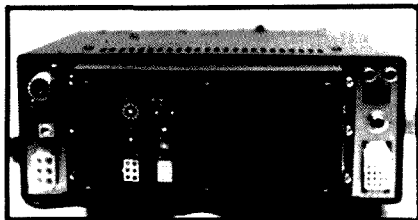
Several other controls are situated under a lift up lid in the top of the cabinet. These are the VOX controls, CW monitor level, SWR set, and switches for processor, SWR and noiseblanker width selection. Operation of some will later come in for some adverse comments.



Frequency readout is digital only. In common with the larger IC-720 no analogue dial scale is included. The digital display is both bright and legible and in common with all transceiver readouts these days reads to 100 Hz. In the selectivity department, the 730 comes with a 2.4 kHz filter installed for normal SSB operation and a 6 kHz filter for AM operation. If you happen to find entertainment value from the broadcast stations on 40 metres then this is for you.

OPTIONS

Several options are offered in the selectivity area. A narrow SSB crystal filter is offered to install in place of the normal mechanical SSB filter. We unfortunately have no data on the characteristics of the new filter, but it should be noted that there is no provision to switch this filter in or out. It has to actually replace the standard filter. A CW filter with a 600 Hz bandwidth can be installed in the transceiver and this is then switched in automatically by the mode selector. In addition an audio filter with 150 Hz band width is available. The transceiver comes with an IF shift and an optional additional filter is available to change the operation of this to a pass band tuning system. None of the optional filters were supplied with the review transceiver so I am unable to comment on their effectiveness. If a transceiver with them installed becomes available in the future they will be written up.



THE REAR PANEL

A cooling fan is built into the final amplifier compartment which operates as soon as the transceiver goes into the transmit mode.

Rear panel connections are a 24 pin accessory socket with outputs for 13.8 volts DC, T/R change over, fixed level receive audio output, plus various facilities for operation of the ICOM IC-2KL linear amplifier or VHF transverter. No matching plug is supplied. As well as this there is the antenna connector, a standard S0239, key jack, external speaker, ALC input from a linear amplifier, memory back up input which requires 12 volts DC to retain memory and dial calibration when the power is switched off, and finally the power input socket and ground terminal.

OPTIONAL POWER SUPPLY

Our review transceiver was supplied with the optional IC-PS15 power supply and, therefore, it seems opportune to include this in the review. It is designed to supply 13.8 volts DC fully regulated to a maximum output of 20 amps. Physical dimensions match the 720 but it is 16 mm taller than the 730. This can be matched up to some

extent by using the tilt bale on the 730 but not on the power supply. Worth noting also is that the PS15 is compatible with the Kenwood TS-120/130 transceivers. Just plug them straight in. No auxiliary DC output terminals are included on the PS15 which is unfortunate, as it is for sure many owners would like to use it as a multi-purpose supply around the shack.

AC switching for the PS15 is taken care of in the transceiver which leads to the possibility of positioning the supply under the desk. The DC lead length on the PS15 is 800 mm.

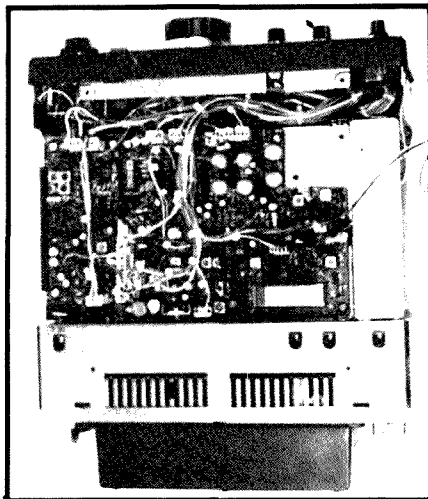


Photo showing top cover removed

THE IC-730 CIRCUIT

Let's now get a general idea of just how the 730 works. First the receiver. The input to the receive section uses the transmitter low pass filter system. The switchable 'Pre-amp' is, in fact, the receiver RF stage and uses a pair of FET's in push-pull. When switched out the signal goes straight into a second band pass filter network and then to the first mixer. First IF is 39.7315 MHz, then to 9.0115 MHz, then to 455 KHz. This is where the main IF shaping takes place with a mechanical filter for SSB, or the optional crystal filters for CW or narrow SSB. It then converts back to 9.0115 MHz and by using a VXO for the common heterodyne oscillator up an down from 455 KHz, the VXO becomes the IF shift control.

The noise blanker has a switched time constant facility which ICOM claim is effective against the "Wood Pecker". In order to reject out of band signals and to provide immunity from overload against strong adjacent signals, crystal filters are included in both the 39.7315 and 9.0115 MHz IF channels. After detection the audio signal is fed through active low pass filters to shape the response and remove unwanted high frequency components. On transmit, we will start at the microphone. The hand PTT microphone supplied contains a single transistor preamp. The microphone amplifier in the transceiver drives the balanced modulator which is also the product detector for the receiver. In the AM and CW

modes this is unbalanced to give carrier output. The signal follows the same conversions as the receive signal and following the final mixer passes through two buffers, two drivers and finally the PA stage. Negative feedback is applied across the three final stages to give uniform gain across each band. It is also hoped that the feedback might also help to produce a low order of intermodulation distortion in the transmitted output.

The heart of the transceiver is the PLL unit and logic unit, and the heart of the logic section is a 4-bit CPU which has been programmed to control all tuning functions in the transceiver. The tuning knob operates a photo chopper which supplies the up/down information to the CPU. The CPU also supplies data for the digital display which is of the high intensity fluorescent type and not a LED display.

The PLL consists of a 13.66 MHz local oscillator multiplied by 9 and mixed with the 132 to 139 MHz output of the VCO. The resultant signal is divided down to 10 KHz and compared with a 10 KHz reference produced by dividing down from a 9 MHz crystal oscillator. The VCO is now divided by 10 and 13.2 to 13.9 signal in one KHz steps which goes to the pre-mixer where it is combined with an output of the CPU to provide the final heterodyning signal to give the required transmit or receive frequency.

Comprehensive metering includes 'S' meter, ALC, RF out and SWR. The RF and SWR is monitored from a directional coupler in the output circuit.

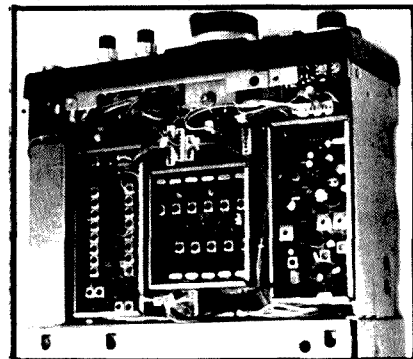


Photo showing bottom cover removed

THE IC-730 ON THE AIR

Plug it in, switch it on and so long as your antenna presents a 50 ohm load on the band you wish to operate, away you go. On initial switch on, the frequency will be 14.101.5 if LSB is selected or 14.098.5 if USB is chosen and the band switch set to 14. The same relative frequency will come up on other bands. With the three tuning rates available everyone should be happy, take your pick of fast, slow or extra slow tuning. I didn't think the tuning control felt as smooth as my old IC-211, but was nevertheless very pleasant to use. The drag on the tuning knob is adjustable by turning a spring loaded screw. With increased tension, however, the smoothness decreased and it produced quite a lumpy effect.

When changing sidebands or to AM or CW the frequency readout changes. In other words it is necessary to retune if you require the same frequency on the opposite sideband. It's perhaps surprising that the CPU isn't programmed to eliminate frequency change with change of mode.

After looking at the 730 brochure several months ago, I was intrigued with the pre-amp button. Would it bring up those 10 metre signals that are down in the noise. NO! it won't—in fact, with it in, the gain and sensitivity sound normal, with it out the set sounds dead. At the same time, I was surprised at the low overall gain and resultant audio output. Under noisy mobile conditions only strong signals would overcome the ambient noise. Even under quiet domestic conditions I found I was running the audio gain at about the half on mark with not a lot to spare.

Audio quality on receive is quite reasonable on the internal speaker and very good indeed on an external speaker. AGC action is very smooth with the slow decay on for SSB and the fast decay coped well with CW and AM signals. ICOM claim that the noise blanker is effective on the "Wood Pecker". I regret that try as I may I could find no detectable difference with the blanker on or off. Its action was good on ignition noise and when the 'wide' position was selected quite good on general electrical hash but with some chopping of the signal and a tendency to produce cross modulation.

The IF shift proved effective in action. Like others of the same type it proved capable of rejecting interference about 1.5 KHz off frequency. Of course, the actual band width does not change so there is always a chance that it might bring in as much interference at one end as it eliminates at the other. In this regard, I would like to try the optional FL-30 filter which changes the IF shift into a band width control.

AM reception is excellent—what a pity the 730 doesn't cover 160.

Transmitter power output was checked on all bands firstly in the CW mode. Exactly 100 watts on 80 tapering down to 75 watts on the high end of 10 metres. PEP output was almost the same and the pattern on the scope looked very clean. Power output is variable from maximum down to about 10W with the RF power control. An internal switch allows 50 to 100 watt operation—ideal for novices. However, there is no mention of this switch in the instruction manual. To access it, remove the top half of the cabinet and you will find it near the ICOM symbol about 3 cm right of the VOX delay control. During the power output tests it was noted that the SWR reading on the 730 meter showed 1.5 to 1 on a 50 ohm load. An internal adjustment can compensate for this but watch out. AM output was checked on air and the report indicated that quality was reasonable with slight distortion when peaking at 100% modulation. The AM is, incidentally, double sideband.

The speech processor gave the transmit audio a worthwhile lift. It should be noted that the processor is a fairly simple audio type and not an RF clipper. Transmit audio gain appeared a bit on the low side. Under no conditions could the ALC be pushed beyond the end of the scale segment. In fact, it appears that the ALC meter segment is too long, and best audio quality reports occurred when talking it up to about the half way mark.

The transmit tests occurred on a day of 30 degree C and while the transmitter heat sink became quite hot to touch, the PS-15 heat sink was too hot to touch. I see that ICOM have a cooling fan available for the PS-15 as an option. Depending on your average temperature it might be a worthwhile purchase.

VOX operation was smooth, the only disturbing factor is the final cooling fan that stops and starts as the transceiver cycles back and forth from transmit to receive. While transmitting, the fan produces a clearly audible but not distracting sound.

CRITICISM

Now to the complaints department. ICOM's idea of putting the lesser used controls under a hatch in the top of the cabinet is a good one. But please make them accessible. The three slide switches used here must surely be the smallest ever made. To add to the difficulty, there is just not enough space to get your finger into the speech processor and SWR switches between the side of the hatch and the two nearby rotary controls. There must be a better way to do this.

Another slight problem arises when you add a linear amplifier that requires an earth on the control line to switch it. ICOM provide for this, but you have the option of linear switching or memory back-up—not both. A slight re-arrangement of the rear panel connectors would overcome the problem to provide one extra connector.

SOME THOUGHTS

Let me say right away that the 730 is a delightful little transceiver and offers facilities just not available in any other rig in this price range.

However, I feel that a few things could be improved with little or no increase in price.

Firstly, perhaps the hatch in the top of the cabinet could be enlarged slightly to give better access to the controls inside. Perhaps the switches for noise blanker, speech processor and SWR selection could be made a little bigger and more accessible.

A few more status indicators would be helpful. A pair of LED's to indicate which VFO is in operation and, perhaps, another to indicate memory condition.

All small points that would make an excellent transceiver superb. I look forward to seeing the IC-730A. I hope, too, that ICOM might bring out a line of matching accessories. I mean this in the sense of physical dimension matching. All the accessories such as the power supply and external speaker were designed primarily

for the larger IC-720. I have no complaint with the electrical compatibility.

INSTRUCTION BOOK

The IC-730 instruction book is well written and very complete, certainly from an operating point of view. Four pages of circuit description with section block diagrams gives a basic idea of set operation. You will need to read up the operations section, particularly with regard to the operation of the two VFO's and the memory system.

A full schematic diagram plus a large sheet showing all printed circuit board layouts.

No service or alignment information is published with the exception of operational fault finding.

VICOM tell me that no service manuals are available at the time of writing, but that they are expecting copies from Japan shortly. Price at this time is not known. It seems that ICOM service manuals have never been easily obtainable; I have yet to see one for any model.

Nevertheless, VICOM are set up with the most sophisticated service workshop in Australia and your new ICOM transceiver carries a 12 month guarantee.

Our review transceiver was loaned by VICOM INTERNATIONAL, City Road, South Melbourne, to whom all enquiries should be directed. ■

Mt. Gambier Convention

The South East Radio Group Inc. in Mt. Gambier will be holding its 18th Annual Convention on the Queen's Birthday long weekend on June 12-13-14.

In an effort to generate additional interest in this already very popular Convention new events have been planned for both amateurs and their families extending over Saturday and Sunday of the weekend.

Usual events such as fox hunts, hidden transmitter hunts and scrambles will be held, plus several beam heading competitions and a feature night fox hunt. For those without DF equipment an observation sightseeing trial is planned for Saturday afternoon. Excellent prizes will be awarded in all events.

Last year's Convention was very well attended by trade exhibitors and this year plenty of trade space will be available with excellent security for the exhibits during the Convention.

One of the main features of past conventions has been the excellent catering arrangements by the ladies' committee, and this area will again be treated with the priority it deserves.

Convention registration forms will be available from most VK3 and VK5 clubs or may be obtained by sending an S.A.E. to The Registrar, SERG, PO Box 1103, Mt. Gambier 5290. Any enquiries can be made by checking into the SERG net on Monday nights at 10.00 UTC on 3.585 MHz. ■



The Melbourne Skyline has changed recently!!

John Weir VK3ZRV

221 St. Helena Road, Greensborough 3088

From this statement you may say "So what?", but to a group of VHF, UHF enthusiasts it means a lot. Gary VK3ZHP started out building a cover for his backyard swimming pool (so I am led to believe) when all of a sudden, much to the astonishment of family and neighbours, a 12 foot (3.66 metre) diameter dish appeared above his garage sporting twin feeds for 432 MHz and 1296 MHz and an $F/d = 0.6$.

Gary has big things in mind for the dish, especially toward the west and particularly in the direction of Chris VK5MC and Col VK5DK. For the newcomer, Col is on 432.1 MHz just about every night at 10.30 UTC, but listen first on 144.1 MHz. Chris is usually around on Wednesday and Saturday nights at 10.00 UTC. Both normally have contacts with Les VK3ZBJ at the above times.

If you listen on 144.1, 432.1 or 1296.1 MHz you may hear quite a large number of stations, for example, VK3ACH, VK3ATY, VK3AWX, VK3BKF, VK3KAG (if you can drag him away from the fish tanks), VK3YRN, VK3ZMQ, VK3ZRV and VK3ZYN. They are usually moving up and down the bands on the above frequencies, looking for contacts both local and DX.

It is also noted that Ted VK3ZKP and Charlie VK3AUP have stacks of 4 modified W0EYE yagis under construction and, together with VK3SD, will appear on 432 SSB soon.

At present the group uses 147.05 FM for liaison until a repeater is unceremonially

placed thereon and it becomes unusable. (Maybe this could be a good reason to have a liaison frequency officially allocated for use by those interested in UHF communication both for local and DX liaison. "Food for thought??")

Anyway, enough of the general news, let's have a closer look at the "pool cover" (sorry dish) which Gary, together with some help from Bruce VK3AWX and Dave VK3YXE, put up on a recent weekend. The dish, as well as being 12 feet in diameter, is an eight spoke affair some 35 feet above the ground. The twin feed is based on the well known skeleton slot/reflector arrangement, cut in half vertically and mounted on the vertical separating plate. This arrangement was then resonated with the help of



Les VK3ZBJ. The calculated gain is 31.6 dB on 1296 and tests so far have shown that it performs to calculated figures. On 432 the calculated gain is 21.3 dB but to date this has to be proved, although it shows some 5 dB on a single 18 element yagi used at present on 432. However, much hard work and fine tuning are still being done.

The photographs show the construction of the dish against the skyline. Also, the 432 yagi, two 144 yagis, a 24 element loop yagi for 1296 and a 6 metre yagi can be seen.

The dish is covered with three-quarter by half inch mesh normally used by avid gardeners to support their climbing vines. The mesh is tied onto the framework by wire ties. "How many ties?" I enquired. "Too many," said Gary whilst trying to straighten his curled and knotted fingers.

Also shown is the mounting arrangement for the dish and per the courtesy of Jenny, Gary's XYL, the method used to raise the "pool cover", OOPS, sorry, Gary, I mean dish, to its present location.

Although not shown clearly the vertical support mast is guyed at the top, above and clear of the dish and Gary's neighbour John has been heard to mutter, "What a good idea, saves me passing the dish back to Gary each time the wind blows."

Congratulations Gary for the achievement and I do hope you reap the rewards of your endeavour.

The frequencies again for those interested are: 147.05 FM, 144.1 SSB, 432.1 SSB, 1296 SSB/FM most nights. You will surely find someone to talk to. ■



It's in the air!

FM RADIO STATION USES TANDY EQUIPMENT

A small N.S.W. country town has started up its own FM-Stereo radio station, using Tandy Hi-Fi equipment.

Condobolin, which is about 80 kilometres west of Parkes, has a population of 4,000.

Their nearest radio station is 65 km away, and the nearest TV transmitter more than 140 km distant. Reception is not the best, which explains why most homes there have their TV antennas mounted on 20-metre masts.

In August, 1981, the residents formed Condobolin Community Broadcasters to organise their own FM-Stereo radio station. And a test transmission permit was duly applied for in November, 1981.

Arthur Piatt and Alan Press, owners of Condobolin Colourvision, the local Tandy dealership, combined their technological know-how with the Tandy products they handled and did their part.

A transmitter was borrowed and installed, and Arthur and Alan put together a home-brew studio with Tandy equip-

ment, including two LAB-240 Turntables, a Disco Mixer and a 14-610 Tape Deck — all of them bearing the Realistic brand name.

Then this year, Condobolin's test radio station went on the air staffed by volunteers from 7 a.m. to 12 midnight every day from January 13 to 16.

Programme material consisted of local news bulletins and interviews and stereo music. Residents report good stereo reception from up to 90 kilometres away, although the transmitter was low power — just 10 watts. More reports are still coming in.

Arthur Piatt says Condobolin Community Broadcasters are now approaching the Broadcast Tribunal for a permanent FM-radio broadcasting licence.

The group plans to finance the radio station with subscriptions from local business concerns, through selling copies of their own programme guide, and through donations. They also hope to involve the local High School; so much of the work can be handled by the students. ■

HELP WITH INTRUDER WATCHING



Great Circle Maps

Keith Vriens VK3AFI
204 Myers Street, Geelong 3220

It was after the completion of my self supporting tower, that investigations were initiated to procure or produce a reasonably large and easy to read indicator to show the beam direction. The first requirement was a great circle map centred on Geelong or Melbourne.

In case this would not be available, perhaps a Sydney based map might be acceptable. In the recent past some articles had appeared in various publications, and these were duly dug up out of large piles of magazines.

In general the articles did not indicate the suitability of these maps for locations other than their base location. Further investigation in navigation publications revealed some restrictions and the need for reliable cross reference data.

By this time a DICK SMITH map and a GFS map had been obtained and cross referenced with some startling results. Some relatively large differences were observed and after quite a lot of fruitless searching for suitable cross references, it was decided that calculating one's own would be the only answer. This was going to be a tedious job and it was decided to try and write a program for an available computer to do the job faster and be more accurate.

Several months later, with the computer turning out some reasonable answers, a similar program was found in a Hewlett Packard instruction manual. The computer and calculator answers to several identical problems were then compared and turned out to correspond very well.

Some reference lists were then produced by the computer, based on Melbourne and Sydney and correlated with respective maps. This once again produced the results expected, showing both maps to be quite correct for amateur purposes when used at the correct location.

The thought then arose that it would be nice if every amateur could do this, or at least produce a printed list (perhaps in alphabetical order) to use in the shack.

To achieve this it would only be necessary to publish the results of my investigations and the complete program in Amateur Radio.

It was then decided to put the program in such a format that it would most likely run in even the simpler home computers. Also by using the data read method of input as shown, it was possible to make any first mentioned location the base for this great circle map calculation. This would enable any amateur anywhere to produce his own great circle map based on the exact home location.

The program itself is not in the simplest form but was left in such a way that it is easy to change for other types of computers.

```
10 PRINT "THIS PROGRAM CALCULATES GREAT CIRCLE BEARINGS AND DISTA
20 PRINT "BETWEEN ANY TWO GIVEN LOCATIONS."
30 PRINT
40 PRINT "ALL LATITUDES AND LONGITUDES ARE IN DECIMAL DEGREES"
45 PRINT
50 REM SOUTH LATITUDES ARE -VE DEGREES
55 PRINT
60 REM EAST LONGITUDES ARE -VE DEGREES
65 PRINT
70 REM LOCATION A - LAT = A1, LONG = A2
75 PRINT
80 REM LOCATION B - LAT = B1, LONG = B2
90 T = 0
100 DIM A$(50), B$(50)
140 READ A$, A1, A2
150 A1 = (A1/360)*2*PI
160 A2 = (A2/360)*2*PI
170 READ B$, B1, B2
175 IF B$ = "END" GOTO 2000
180 B1 = (B1/360)*2*PI
190 B2 = (B2/360)*2*PI
270 A3 = (B2 - A2)
280 A4 = (SIN(A1)*SIN(B1)) + (COS(A1)*COS(B1)*COS(A3))
290 A5 = SQR(1 - (A4**2))
300 A6 = A5/A4
310 A7 = ATN(A6)
320 IF A6 < 0 GOTO 330 ELSE 340
330 A7 = PI + A7
340 D = (60 * 360 * A7)/(2*PI)
350 K = D * 1.853
360 S = D * 1.152
370 H1 = (SIN(B1) - (SIN(A1)*COS(A7)))/(SIN(A7)*COS(A1))
380 H2 = SQR(1 - (H1**2))
390 H3 = H2/H1
400 H4 = ATN(H3)
410 IF H3 < 0 THEN 420 ELSE 430
420 H4 = PI + H4
430 H5 = H4 * 57.2958
440 IF SIN(A3) < 0 THEN 460 ELSE 450
450 IF SIN(A3) >= 0 THEN 480
460 H = H5
470 GOTO 490
480 H = 360 - H5
490 IF T > 0 GOTO 530
500 PRINT "THE GREAT CIRCLE BEARING AND DISTANCE ARE AS FOLLOWS"
510 PRINT TAB(10); "FROM"; TAB(30); "TO"; TAB(50); "HEADING";
515 PRINT TAB(60); "DISTANCE"
520 PRINT TAB(50); "DEGREES"; TAB(60); "NT. MLS."; TAB(70); "KILO
525 PRINT
530 PRINT TAB(5); A$; TAB(30); B$; TAB(50); H; TAB(60); D; TAB(70)
540 T = T + 1
550 GOTO 170
590 DATA "MELBOURNE", -37.82, -144.97
600 DATA "GEELONG", -38.13, -144.35
610 DATA "CAPE TOWN", -33.90, -18.37
640 DATA "TENERIFE", 28.33, 16.57
650 DATA "GIBRALTAR", 36.18, 5.37
660 DATA "PARIS", 48.82, -2.33
670 DATA "GLASGOW", 55.88, 4.25
680 DATA "REYKJAVIK", 64.15, 21.85
690 DATA "ANCHORAGE", 61.22, 149.88
700 DATA "LOS ANGELES", 34.33, 118.20
710 DATA "KINGSTON", 18.00, 76.80
720 DATA "TRINNIDAT", 10.50, 61.20
730 DATA "RIO DE JAN", -23.90, 43.25
740 DATA "RECIFE", -8.05, 34.90
750 DATA "PERTH", -31.93, -115.83
760 DATA "WELLINGTON", -41.30, -174.78
770 DATA "TOKYO", 35.75, -139.50
780 DATA "SAN FRANCISCO", 37.80, 122.40
790 DATA "AMSTERDAM", 52.37, -4.90
800 DATA "SYDNEY", -33.88, -151.22
810 DATA "DARWIN", -12.45, -130.83
820 DATA "ALICE SPRINGS", -23.7, -133.87
830 DATA "ADELAIDE", -34.93, -138.6
840 DATA "HOBART", -42.83, -147.25
1990 DATA "END", 0, 0
2000 END
```

Program listing

To produce a printout with your own QTH as base location it is only necessary to introduce one data line, e.g. for Broken Hill proceed as follows:—

1. Find latitude and longitude; 31° 58' S, 141° 27' E.
2. Convert to decimal degrees, remembering also North and West are positive, South and East are negative; —31.97°, —141.45°.
3. Enter as follows; 580 DATA "BROKEN HILL", —31.97, —141.45.

This line will fit in the program before all other location data and will be read first. This will make it the base location.

To use the program for another base location simply remove line 580 and replace with new location data as before.

For very short distances some error will be evident. Do not use remote locations at exactly North, East, West or South from the base location, as this may give the computer the hiccups.

LIST OF FUNCTIONS REQUIRED

SQR	Square Root	$y = \sqrt{x}$
ATN	arctan	$y = \arctan x$
PI	3.14159	a constant
SIN	sine	$y = \sin x$
COS	cosine	$y = \cos x$

These functions will be required in a program library but are usually available.

REFERENCES:
Admiralty Manual of Navigation, HMSO
Navigation: A. G. Gardner

THIS PROGRAM CALCULATES GREAT CIRCLE BEARINGS AND DISTANCES BETWEEN ANY TWO GIVEN LOCATIONS.

ALL LATITUDES AND LONGITUDES ARE IN DECIMAL DEGREES

THE GREAT CIRCLE BEARING AND DISTANCE ARE AS FOLLOWS

FROM	TO	HEADING DEGREES	DISTANCE NT. MLS.	KILOMETRES
GEELONG	CAPE TOWN	222.236	5534.8	10256
GEELONG	TENERIFE	243.998	9679.71	17936.5
GEELONG	GIBRALTAR	274.771	9353.7	17332.4
GEELONG	PARIS	303.833	9048.28	16766.5
GEELONG	GLASGOW	320.584	9155.72	16965.5
GEELONG	REYKJAVIK	346.887	9162.93	16978.9
GEELONG	ANCHORAGE	28.4158	6761.43	12528.9
GEELONG	LGS ANGELES	65.2491	6937.35	12854.9
GEELONG	KINGSTON	107.648	8336.93	15448.3
GEELONG	TRINIDAD	133.639	8647.67	16024.1
GEELONG	RIO DE JAN	172.161	7053.66	13070.4
GEELONG	RECIFE	181.038	8028.88	14977.5
GEELONG	PERTH	276.254	1443.43	2674.68
GEELONG	WELLINGTON	107.394	1409.95	2612.65
GEELONG	TOKYO	355.907	4440.98	8229.13
GEELONG	SAN FRANCISCO	60.0546	6868.15	12723
GEELONG	AMSTERDAM	310.292	8918.51	16526
GEELONG	SYDNEY	54.6554	419.567	777.457
GEELONG	DARWIN	331.281	1701.87	3153.57
GEELONG	ALICE SPRINGS	325.215	1018.43	1887.16
GEELONG	ADELAIDE	302.968	337.099	624.644
GEELONG	HOBART	155.792	311.454	577.125

Example of computer output print

Quad Modification



J. A. Taylor VK3AJT
45 The Esplanade, Drumcondra 3215

(This is an afterthought on "Developing the HF Beam", December 1981 AR.)

In recent high winds, up to 125 km.p.h., a fault showed up in the soldering of connecting lugs to the element wires.

This, it is thought, was caused by the heat over-softening the already soft copper.

An improved ending to this terminal of the element wire has been tested drastically and, though more complicated, overcomes the only known fault in the quad.

This is required on the six 20m endings to the terminal blocks. All the others showed no fault.

The photo shows the assembly of all parts, which is as follows:—

A larger lug — BURNDY HYLUG B16M8 — is used with a connecting sleeve — BURNDY HYDENT BS06 — soldered half into the lug. These were obtained from Lawrence and Hanson.

Firstly, the element wire is soldered into the lug and sleeve.

Next, over the element wire, and hard up to the BURNDY sleeve, a 6 in. length of 1/8 in. inside diameter plastic tube is glued to the wire.

Over all of this, and over BURNDY sleeve is fitted and glued a 3 in. length of 1/4 in. inside diameter plastic tube.

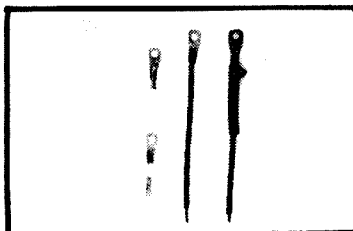
Lastly, over the 3 in. length of outer plastic sleeve, and over the BURNDY metal sleeve, is fastened a 3/8 in. hose clamp.

All was then coated with fibreglass emulsion.

Sleeving was from Donald Don.

Hose clamps were from Repco.

Having now seen the quad flexing in the worst of winds, a small bumper-bar has been fitted to the lower end of the driven element, just in case that dropper could be forced either alongside or behind the steel mast.



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Capacity Meter featuring Auto Ranging

D. S. Hoefsloot PA0DSH
 Translated by W. Beyer VK3BHW
 Originally appeared in Electron

I don't know how your work bench looks after a day's experimenting, but in all probability it will be the same as mine and that is a great pile of wires, assorted resistors and capacitors that were tried in an experimental circuit.

One of the problems that usually crops up is to sort out the capacitors from which the value is erased, and therefore have become useless. Taking into account the price of electronic components these days, it seems a crime to relegate these expensive capacitors to the dustbin.

So in the following paragraphs you will find a description of my solution of keeping these expensive capacitors with the help of an autoranging capacitor-meter.

SPECIFICATIONS

The most interesting and novel part of this design is the autoranging feature, hence one shall look in vain for lots of switches to play with, only an analogue indicator, 7 LEDs for range indication, and last of all a solitary ON/OFF switch.

There are six ranges to measure values between 10 pF and 10 mF, the seventh LED is an over-range indicator, when the unknown capacitor is in excess of 10 mF.

CIRCUIT DESCRIPTION

Fig. 1 shows the complete circuit of the capacity meter. A quick glance at the circuit shows that I am turned on (and off) by a certain multivibrator, namely the 74123. The 74123's most important characteristic is that it will generate an output pulse of fixed duration independent of the time of the input pulse. The fixed duration of the output pulse depends on an externally connected R/C combination chosen by the designer. This chip is also called a one-shot as it will only respond with one output pulse when it is triggered.

In fact, the complete circuit acts as an oscillator whose frequency is determined by the externally connected C_x .

The R/C time of MV-7 is set by the fixed resistor of 4.7 k-ohm and the unknown C_x .

The 74123's 1 to 6 (looking from the top down) have an increasing R/C time, going up in multiples of 10 (set with the 50 k-ohm trim pots).

The negative transition of the output pulse from each 74123 is used as the clock pulse for each corresponding 7474 flip-flop.

To start with our explanation we assume that an input pulse triggers all the 74123's immediately all the flip-flops will be pre-set by the negative going flank of the Q output of MV-7. The six inputs of the 7430 NAND gate will in turn be set to a logical 1 by the Q outputs of the 7474's with the

final result being that the NAND gate output goes low.

Thus the input line of the 74123's is now low again. However an output pulse is delivered from each one-shot with times

corresponding to its particular R/C combination.

Let's now assume that the time constant of $C_x/R7$ is longer than MV-1 and 2, but smaller than MV-3 to MV-6. The return of

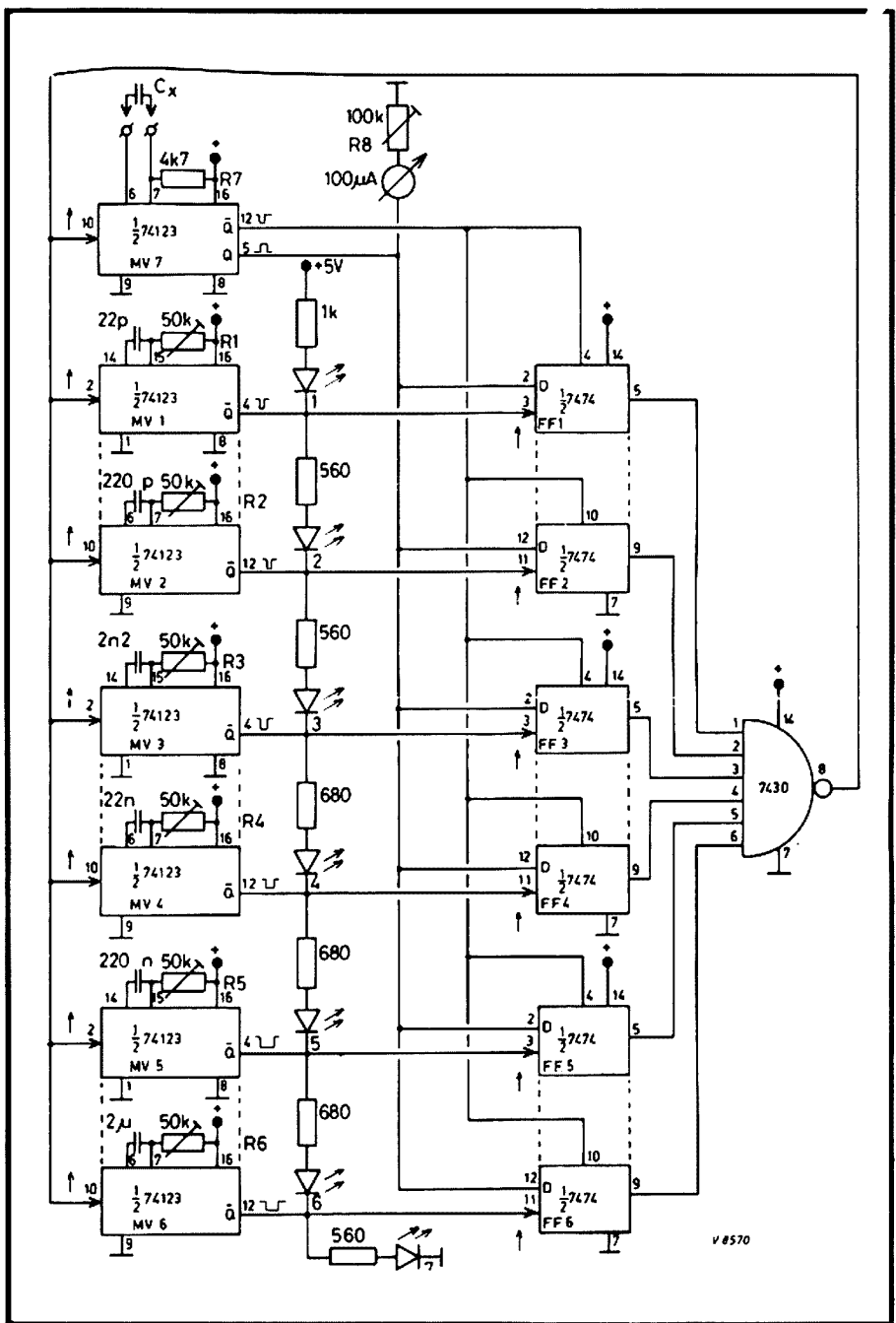


FIG. 1: Circuit of the auto ranging capacity meter

the outputs of MV-1 and 2 will not alter anything at the input side of the NAND gate for they are still pre-set by MV-7. However, when the Q output of MV-7 goes positive again the pre-set to the flip-flops is then removed. Still nothing happens, until MV-3 times out signalling the end of its time-pulse, this will clock the flip-flop and allow data to be transferred, thus setting input 3 of the NAND gate to a zero resulting in the output going high again. The inputs of the 74123's are high. Therefore each one-shot starts a new output pulse, the overall frequency depending on the value of Cx.

The one-shots 4 to 6 are simply forced into a new timing cycle and play no part in this particular sequence.

The timing diagram of Fig. 2 should help to explain the sequence of the above matters a bit further.

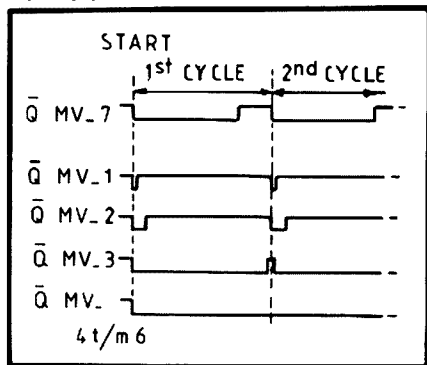


FIG. 2: Timing sequence

To go over it again in brief, the Q output of MV-7 delivers a pulse controlling the oscillation of the circuit, depending on the value of Cx. The average value of this frequency drives the analogue meter as well as determining which of the flip-flops is going to transfer the data to initiate a new cycle.

FRONT PANEL

The range being measured is indicated by LEDs 1 through 6. The value measured and indicated on the meter is accordingly multiplied by x10pF, x 100pF, x1nF, x10nF, x100nF and by x1mF, depending on which LED is lit.

Whenever Cx is greater than 10 mF LED 7 will light up because the oscillator will fail to run. To start the oscillator again the unit should be switched off and on again providing that a proper Cx has been connected to the test terminals.

CALIBRATION

This is done in the following 12 steps.

1. Set all the trimpots to maximum position.
2. For Cx use a high tolerance 100 pF capacitor.
3. LED 1 should come on.
4. Adjust trimpot R8 till a reading is obtained of say 20 per cent on the scale.
5. Reduce R1 till LED 1 nearly extinguishes.
6. Bring the needle to 100 per cent scale with R8.

7. Do not touch R1 and R8 any more.
8. Connect a high tolerance 1 nF capacitor to the terminals.
9. LED 2 should light up.
10. Adjust the needle to 100 per cent scale with trimpot R2, and the LED should just stay on. It should not jump to LED 3.
11. Repeat steps 8 through 10 with good tolerance capacitors for each range, using the appropriate trimpots.

SOME REMARKS

- (a) The meter could have one more range (for 100 mF), however I do not recommend this for the frequency will be very low so much so that the needle will follow the actual frequency. Also linearity problems start to come in at this low range.
- (b) Addition of a lower range is not possible. Here we run into problems with parasitic capacitance as seen by the input wiring and connections.
- (c) Building the meter is not critical. However keep the wiring as short as possible especially around the input connections and pins 6 and 7 of MV-7. Making a printed circuit board appears to be the ideal approach for the construction of this unit and a stabilised power supply made with a 7805 is also recommended. Decouple each IC package with a 10 nF capacitor between Vcc and ground.

I've used the meter many times and it leaves no doubts reading the proper value of Cx (which is a problem with some commercial units) and I really think the cost of this project is not going to damage your bank account too much. ■

INTRUDER WATCH



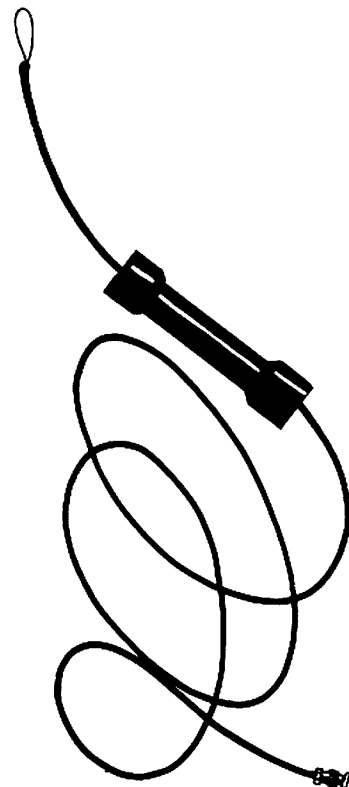
Our amateur bands continue to be plagued by regular intruders. Your enjoyment of our hobby is slowly being strangled by them. Take careful note that IW observing is your chance to assist with the administration of our hobby. If you are not on your Divisional Council, not an office-bearer of your radio club, or not otherwise actively involved, WE NEED YOU.

IW particularly needs you to listen and report on the activities of UMS on 21032 and CQ5 on 21115 kHz. Please refer especially to your February 1982 AR IW column for further action requested.

If you don't have the address of your Division IW Co-ordinator, send your report to me — Bob McKernan VK4LG, Federal IW Co-ordinator, Box 50, Sandgate, Qld. 4017. ■

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A Three Band Vertical (10, 15 and 20 Metres)

Article by PA3AFZ
Published in CQ-PA Magazine
Summary by VK4QA

REPRODUCIBILITY

It is not unusual to find exciting designs for "you beaut" antennas in various amateur magazines, only to find that when YOU reproduce the design exactly as is, any similarity between theory and practice is purely coincidental.

The original design concept of this antenna-to-be-described comes from W6HPH. However, there were so many problems and, believe it or not, PA3ASR and PA3AFZ have solved them all and it is now possible to copy this design and be assured that it will work. Perhaps some minor adjustments could be necessary, such as final height, angle of radials, etc.

In a short space of time, six antennas were built based on this design and the results were fantastic.

TOPLADING

Toploading is used because both theory and practical experience indicate that a quarter wave antenna radiates at maximum where the current is highest. (This in case you've forgotten your theory after passing your exam!!!) However, some extra capacity is required to compensate for the losses incurred by the rather large coils. A low Q is not exactly what we want.

CONSTRUCTION

Fig. 2 shows the construction of the antenna (dimensions in mm). The radiator consists of two aluminium pipes sliding into each other for fine adjustment of the final optimum length. A hose clamp is used to secure the two pipes.

And now the horizontal part of the antenna. This part is made out of a weather-proof piece of PVC rod or tube with a diameter of 22 mm and a total length of 305 mm. It is essential that the diameter is exactly 22 mm, otherwise you'll have to do unnecessary experimenting with the coils to achieve the same results as the original design. Do exactly as "told" for once and get the antenna working. After that, go for your life with modifications.

1 mm diameter enamelled copper wire is used and the coils are close wound. The 15 metre coil uses 1960 mm of wire (1.96 metres) and for the 20 metre coil, measure off a length of 4330 mm (4.33 metres). Again, for the best results, KEEP TO THESE DIMENSIONS. Both coils are to be connected to the radiator on one side and on the other side to the capacitive "hats".

For 10 metres no coil is required, as the radiator should have an electrical length of a quarter wave for 10.

Attachment of the coil section to the radiator is left to the imagination of the constructor (at last, you're on your own here).

It is recommended to wind the coils in such a manner so that they can be moved along the former for fine adjustment. An explanation is not given, but it does influence fine tuning to a large extent.

For each band one radial is sufficient. More radials will improve all round performance unless you prefer a directional type of antenna. It has been found that one radial will show a directional pattern whereas more radials will show a more or less omni-directional pattern. Whatever number of radials you'll be using, one per band will get you perfectly on the air (after tuning). The length of each radial is dependent on the angle to the radiator and on the surroundings. It is recommended to make the radials slightly longer than a quarter wave for the band to be covered.

TUNING

First adjust the length of the radials to achieve the best possible SWR on each band.

Second adjust the length of the "bottom" half of the radiator (the part below the coils) until the antenna resonates on 15 metres.

Third adjust the top-capacity by adjusting the 20 metre coil until the desired resonance is achieved.

Fourth adjust the length of the top part of the radiator until 10 metre resonance is shown.

These adjustments should be repeated a number of times to achieve maximum tuning.

ing. Then, if so required, readjust the radials for length and angle to get the best possible SWR. Experience has shown that the radials ultimately will be slightly shorter than the electrical quarter wave for each band.

All the tuning can be done at GROUND LEVEL. Again, experience has shown that when the antenna is finally raised to the desired height, very minimal, if any, adjustments are required to the radials.

Of course it goes without saying that the construction of this antenna should be weather, water and wind proof.

SWR

Test measurements on SWR for the three bands indicate a surprisingly wide bandwidth for 15 and 10 metres. Other copied antennas showed the same picture and some samples even showed a far better bandwidth for 20 metres than the one shown in Fig. 3.

So when you have made this PA3AFZ vertical and got it working first go then it is time to start experimenting, such as broadening the 20 metre bandwidth by using either a large diameter coil or winding the coil spaced.

And what about altering the height and make it a 15 or 20 metre quarter wave when "bare" and put the coils in for 40 and 80 metres. (Hey, why leave top-band out??) Any results on experiments, please drop a note to John VK4QA QTHR who will forward the information to PA3AFZ. ■

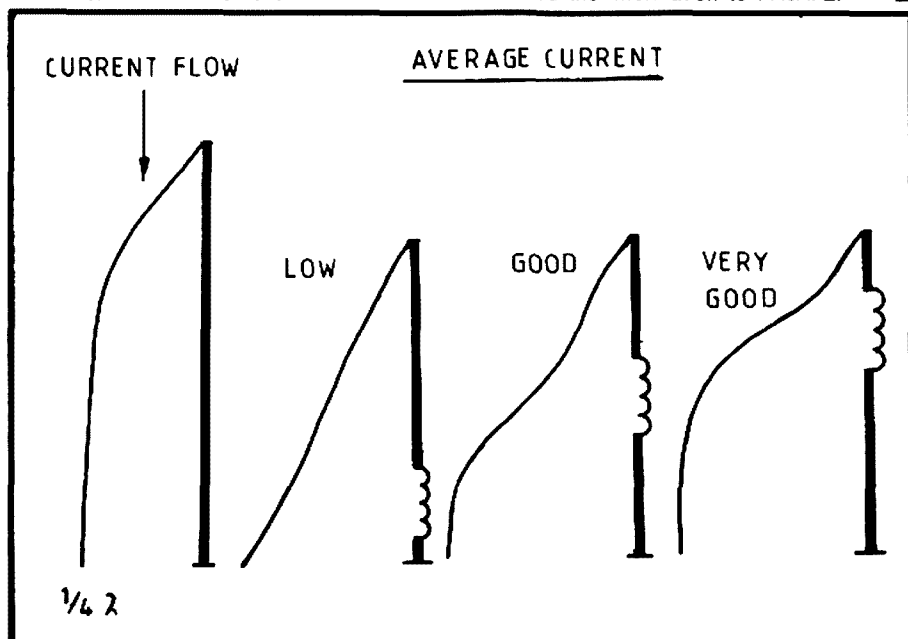


FIGURE 1

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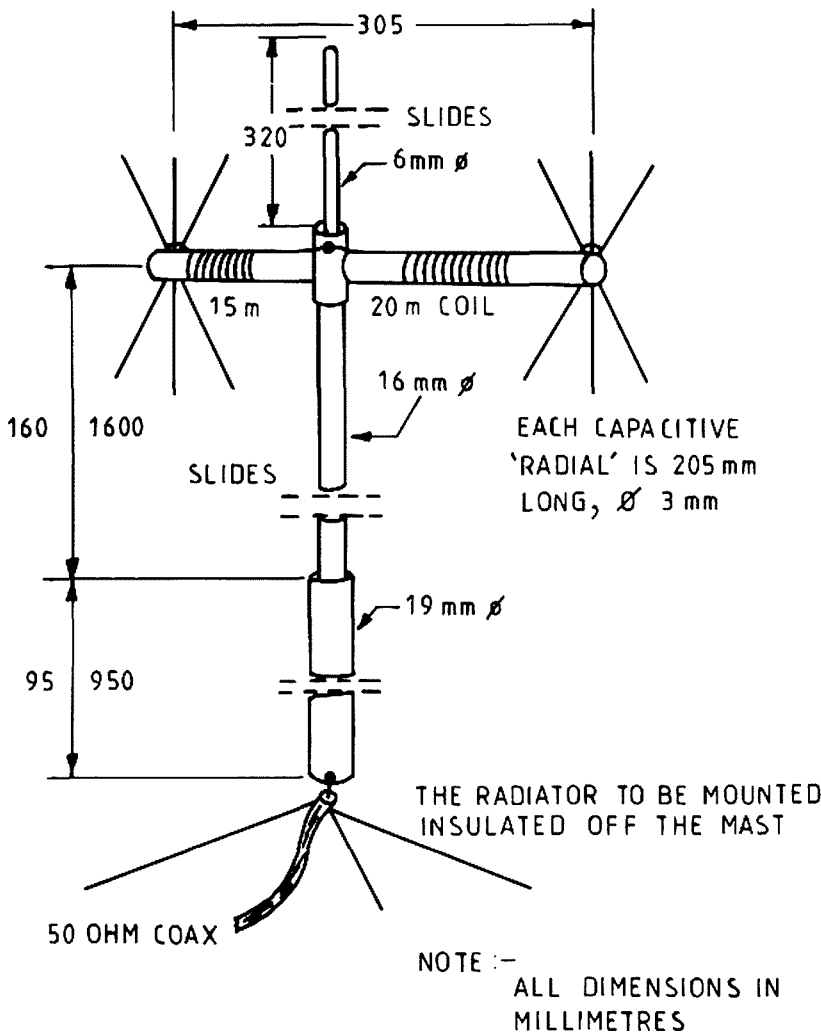


FIGURE 2: Construction of antenna

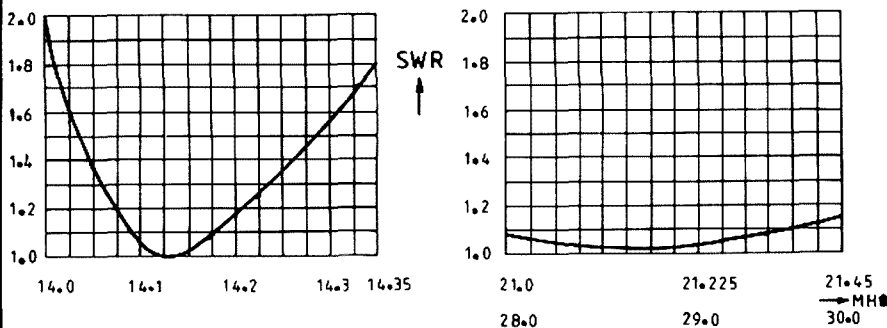


FIGURE 3: SWR frequency

Moomba — VK5GAS

Little is known about the resources of the Cooper Basin and the small self contained township of Moomba which is company owned and is instrumental in supplying natural gas to Sydney and Adelaide, and boasts the amateur radio station with the appropriate call sign of VK5GAS.

MOOMBA, located in the Strzelecki desert just south-west of Innamincka, some 1000 km north of Adelaide and 1300 km west of Brisbane, was established in 1968 as a Gas Treatment Plant which would treat natural gas from the Cooper Basin, after which it would be transported by pipeline to Sydney and Adelaide. This gas field supplies more than 99% of natural gas consumed in N.S.W. and 100% of South Australia's gas requirements, also some 74% of the electricity generated in that state is produced with natural gas piped from this remote location.

The natural gas is drawn from reservoirs which lay between a mile and two miles beneath the surface and is the product of animal and vegetable matter deposited some 250 million years ago.

Currently gas is being recovered from more than 80 wells in five fields located up to 30 miles from Moomba. Each field has a partially attended satellite station to which gas is brought from the various wells by a gathering system of many hundreds of miles of pipeline.

Future development and continuity of the venture is assured and test drillings are being continuously carried out in locations hundreds of miles from Moomba. Transport of equipment is done by road whilst personnel and supplies are taken care of by the "Rig Hopper", a small aeroplane.

The actual treatment plant has an expected life of twenty years, however Moomba has become home, whilst working, to an all male community of approximately 200, of which 120 are on site at any one time, operating around the clock. The typical work cycle is 160 hours spread over 28 days, 18 are spent at Moomba and 10 on leave, generally in Adelaide. Travel to and from Adelaide is by the company owned Cessna Citation II Jet which accomplishes the distance in one and a half hours.

Conditions and amenities are good with individual air-conditioned rooms (to accommodate the temperatures as high as 46 degrees C in the shade), cafeteria, indoor pool, 200 seat theatre, sports complex and bar.

Some time during this period two forty feet long lengths of pipe took up a permanently vertical position on each end of the Squash Court—one mounted on the sphere from an unserviceable ball valve, for 'armstrong' rotation of the 10 metre band 3-element beam placed on top, and the other was topped off with a Citizen's Band 'Ringo' antenna.

THE RADIO CLUB

Early in 1979 two meetings were held to ascertain if there was enough interest in Moomba for the formation of a Radio Club, only 12 of the "residents" showed any interest and 6 of these were interested in CB.

A Club was formed and by mid-1979, management had provided a portable building for their sole use; the next six months were taken up by cleaning and decorating the interior, also the installation of an air-conditioner which would make operating more pleasant and also keep the dreaded sand out of the equipment.

November 2nd, 1979, Peter Blades and Mike Hawkins sat the Amateur Novice examination, as the result of which Mike went 'on air' early in 1980 with the call-sign VK5NHV. Peter and Buzz Shaw continued making CB contacts. Peter re-sat the Novice examination in May, 1980, but the theory still eluded him. (The Regulations and Morse sections of the examination were passed in November, and remained valid for one year, which left only the Theory section to pass.)

Up to August, 1980, Mike and Peter spent long hours studying, and Morse practice sessions were driving people mad in Moomba and at home. (It was also a Club recruiting drive based on 'if you can't beat them, join them'). Both entered the August Amateur Full Call examination with trepidation and continued to feel that way until the results brought on a period of numbness and disbelief—both had passed!

Then the activity reached fever pitch. A five band trapped long wire antenna was erected but only lasted for about six weeks—the local Corella population had increased from hundreds to thousands and their wire cutting beaks went into action. The long wire antenna crashed to the ground (smashing the traps), all the expensive RG8 coaxial cable to the beam and Ringo was shredded and the elements of the beam had that droopy look. It remains difficult to believe that each of these birds is worth about \$400 to overseas collectors!

So we started again. A remote controlled antenna rotator was installed on it with the overhauled and realigned 10 meter beam on top. An inverted-vee antenna was also taken to the top of the tower, and a North-South long wire antenna was taken to a nearby water tower. (The birds should slide down the inverted vee antenna just as they do on the droopy radials of a ground plane antenna!). The equipment in the shack was also updated, the Yeasu FT-7 had a Yeasu FL-110 linear

MOOMBA RADIO CLUB



MOOMBA

SOUTH AUSTRALIA



CLUB
STATION

VK5GAS



Mike VK5AMH at the controls

added and the Yeasu FT-200 transceiver was completely re-valved and re-aligned. We were in business at last!

PRESENT

Although preliminary work on the formation of the Club started during February 1979, actual operating time (on air) was minimal until the last quarter of 1980.

Of the initial twelve interested people at those early 1979 meetings the Club has settled down to two Full Call Amateur operators plus about six regular visitors to the shack who have electronic hobby projects, though since news of the various radio contacts made has filtered out of the shack the numbers of visitors has increased considerably (or is it the coffee pot and easy chairs that draws them?). To make it more interesting for such visitors we have a world map mounted on the wall showing where we have made contacts, and another showing callsign prefix areas. The small collection of QSL cards that we have received are on display and their number will increase dramatically now that more time is being spent 'on air'.

The unusual area location of the Club, and the Company operation, has resulted in much interest from the people contacted. Most envy us for our work roster and are making a point of trying to keep track of our movements to maintain regular contacts. This interest has also resulted in the Club being included in the 'NutNet' which is a nightly exchange of banter between Amateur Radio stations in Australia and the Pacific Ocean islands. We also make regular contacts with operators in P29 (Papua New Guinea) and we are getting to know PNG very well.

Our Moomba location has also resulted in us having unusual skip conditions and being able to give some assistance to operators trying to establish contact, or having difficulty maintaining contact with other stations—it has been our pleasure

to help, and the service will be continued.

The Club has designed, and has had printed, its own QSL cards which are of a very high standard and include an aerial photograph of the Moomba Gas Processing plant and facilities—all in full colour. All Australian, most PNG, and some of the other countries receive QSL cards direct, and a leaflet briefly describing the Moomba operation is enclosed. All other contacts receive the card only, through the QSL card bureau.

FUTURE PROJECTS

Included are improvements to our antenna system such as the purchase and installation of a 5-element, 15 metre beam, rigging up a Rhombic antenna orientated for Europe, and additional experimentation with the wire antenna.

Improvements to equipment includes the purchase of a full power (400 watts) linear for the transceivers.

Development of a 'MinNet', which will be

a regular meeting 'on air' for Amateur radio operators living and working in mining communities with conditions similar to our own.

Instruction for any employee Interested in obtaining the Novice, Limited, or Full Call Amateur licence (the Club has instruction books, text books and morse practice tapes).

Participation (subject to Company approval) in WICEN (Wireless Institute Civil Emergency Network).

Possible installation of equipment (HF & VHF) for a back-up system and alternative communications centre for the Company radio network, and for 'silent hours' monitoring of Emergency frequencies.

The Department of Communications kindly allocated the call sign VK5GAS on the understanding that it was temporary and could be recalled if it was necessary to use the suffix elsewhere.

Present members of the Club are Mike VK5AMH, Peter VK5APB, Nick VK5NIC/ZAT, Alex VK5ZEB, Buzz and Verne who are studying to pass the exams. The Moomba Amateur Radio Club also boasts an honorary member who is John VK5JM, President of the WIA, South Australian Division, who travels to and from the area on business and drops in for a short QSO from time to time either using the Club's call or his own/portable.

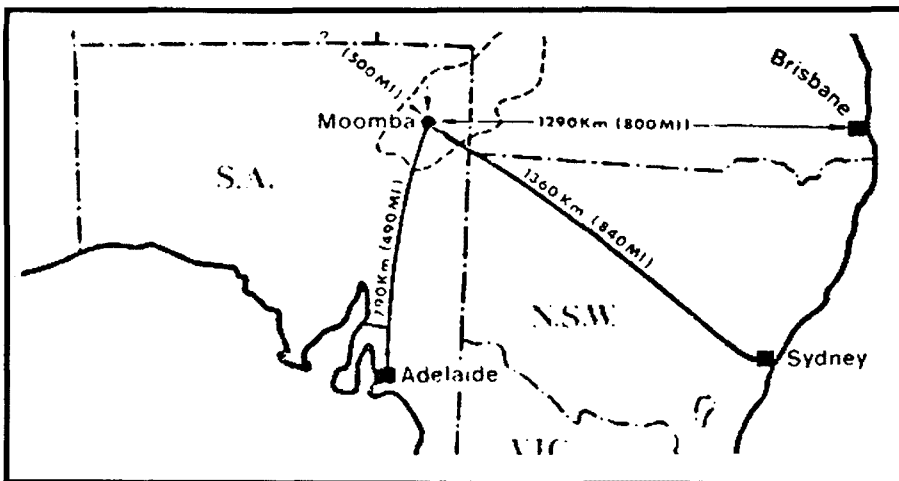
Present equipment at the Club rooms, which is divided into two separate shacks, comprises an FT200 with "home brew" antenna tuner and a FT707M. Both units being able to be fed to either of the beams on 10 and 15 metres or the inverted Vee on 80 metres, also they have a "long wire" which can, with the tuners, be used on 30 metres.

QSLs are 100% by the Bureau or direct to Box 121, North Adelaide, 5006, S.A.

ACKNOWLEDGEMENTS

Public Relations Department SANTOS. 183 Melbourne Street, North Adelaide, S.A., 5006.

Mike VK5AMH



LOCATION MAP
Showing natural gas pipe line and the Cooper Basin

System Loss and Antenna SWR — or How Much Power do you Radiate?

George Cranby VK3GI
Box 22, Woodend 3442

The graph, Fig. 1, tells the story and is the result of some calculations stimulated by a section of Ron Cook's (VK3AFW) "Novice Notes" in the November 1981 issue of "Amateur Radio".

The calculations are really very simple, if somewhat tedious. They are based on well known facts and formulae, and are expressed throughout in terms of unity input.

SWR is calculated by the formula $(1 + \text{reflected voltage}) / (1 - \text{reflected voltage})$; the reflected voltage is calculated as $\sqrt{\text{reflected power}}$. SWR meters are usually calibrated not only in SWR but also in reflected voltage, mostly in %. In this calculation the fraction is used, i.e., 0.6 instead of 60%.

Let us assume, for example, a rather poor feed system with, say, 10 dB feedline loss and a 4 : 1 antenna SWR. The following power flow then exists:

- (1) Input to feedline is taken as unity (1.00).
- (2) Power at end of feedline is 0.1, due to 10 dB line loss.
- (3) The antenna reflection factor, for a 4 : 1 SWR, is 0.36. This is reduced to 0.036 by the feedline attenuation factor of 0.1. The reflected voltage factor is $\sqrt{0.036} = 0.06$.
- (4) Reflected power at the transmitter end of the feedline is 0.0036, due to 10 dB line loss on the return path.
- (5) Reflected voltage at the transmitter is $\sqrt{0.0036} = 0.06$.
- (6) SWR at the transmitter is therefore $\frac{1.06}{0.06} = 1.13$.

It can be seen that the measured SWR of 1.13 : 1 hides a 4 : 1 SWR at the antenna!

This lengthy step-by-step calculation can be much simplified; the process, using reference numbers from the full calculation, is as follows:—

$$\begin{aligned} &\text{Reflected voltage at transmitter} \\ &= \sqrt{(2)} \times (3) \times \sqrt{(2)} \\ &= \sqrt{(2)^2} \times \sqrt{(3)^2} \\ &= (2) \times \sqrt{(3)} \\ &= (\text{line attenuation factor}) \\ &\quad \times (\text{antenna reflected voltage factor}) \end{aligned}$$

In terms of our example this is $0.1 \times 0.6 = 0.06$, the same value as was obtained with the detail calculation.

Table 1 has been calculated by using the short formula for all combinations of line loss from 1 dB to 10 dB and SWRs from 1.2 : 1 to 4 : 1. The reflected voltages for antenna SWRs were taken from Table 1 of Ron's "Novice Notes" except for 2 : 1, which I calculated.

TABLE 1: System SWR.

Antenna SWR	VRF*	Line Loss, dB	1	2	3	5	10
		Line Attenuation Factor	0.794	0.631	0.501	0.316	0.100
1.2 : 1	0.1	Reflected Voltage at Txr System SWR	0.079 1.17:1	0.063 1.13:1	0.050 1.11:1	0.032 1.06:1	0.01 1.02:1
1.5 : 1	0.2	RVAT SWR	0.159 1.38:1	0.126 1.29:1	0.100 1.22:1	0.060 1.13:1	0.020 1.04:1
2 : 1	0.334	RVAT SWR	0.265 1.72:1	0.211 1.53:1	0.167 1.4:1	0.106 1.24:1	0.030 1.06:1
3 : 1	0.5	RVAT SWR	0.400 2.33:1	0.320 1.94:1	0.250 1.67:1	0.160 1.38:1	0.050 1.11:1
4 : 1	0.6	RVAT SWR	0.476 2.82:1	0.379 2.22:1	0.300 1.86:1	0.190 1.47:1	0.060 1.13:1

* VRF — Voltage reflection factor due to antenna SWR.

TABLE 2: Summary, Table 1

Table 2 is simply an easy-to-read summary of the results of Table 1.

Loss, dB	Ant. SWR	1	2	3	5	10
1.2:1	1.17:1	1.13:1	1.11:1	1.06:1	1.02:1	
1.5:1	1.38:1	1.29:1	1.22:1	1.13:1	1.04:1	
2:1	1.72:1	1.53:1	1.4:1	1.24:1	1.06:1	
3:1	2.33:1	1.94:1	1.67:1	1.38:1	1.11:1	
4:1	2.82:1	2.22:1	1.86:1	1.47:1	1.13:1	

Table 3 is the result of power loss calculations. Power loss, in dB, is $10 \log (P2/P1)$, where P1 is the input power and P2 the output power. In the case of an antenna, output power is the power accepted (radiated) by the antenna. This is, in unit terms, $1 - (\text{factor of reflected power})$. Table 3 is mathematically very simple and gives, in the last column, the power loss in dB due to the antenna SWR.

TABLE 3: Antenna SWR Loss, dB.

Ant. SWR	Accepted Power	Loss, dB
1.2 : 1	0.99	0.04
1.5 : 1	0.96	0.18
2 : 1	0.889	0.51
3 : 1	0.75	1.25
4 : 1	0.64	1.94

Table 4 consists of the sums of all combinations of line losses plus antenna losses from Table 3.

TABLE 4: System Loss (Line and Antenna) dB.

Loss, dB	Ant. SWR	1	2	3	5	10
1.2 : 1	1.04	2.04	3.04	5.04	10.04	
1.5 : 1	1.18	2.18	3.18	5.18	10.18	
2 : 1	1.51	2.51	3.51	5.51	10.51	
3 : 1	2.25	3.25	4.25	6.25	11.25	
4 : 1	2.94	3.94	4.94	6.94	11.94	

The graph was then constructed by using Tables 2 and 4. Each point was found by entering, from Table 4, the system loss for a certain line loss/antenna SWR combination, and the system SWR figure from Table 2 for the same line loss/antenna SWR combination. Typically, for a 3 : 1 antenna SWR and 5 dB line loss, we have a point defined by 1.38 : 1 system SWR and 6.25 dB system loss.

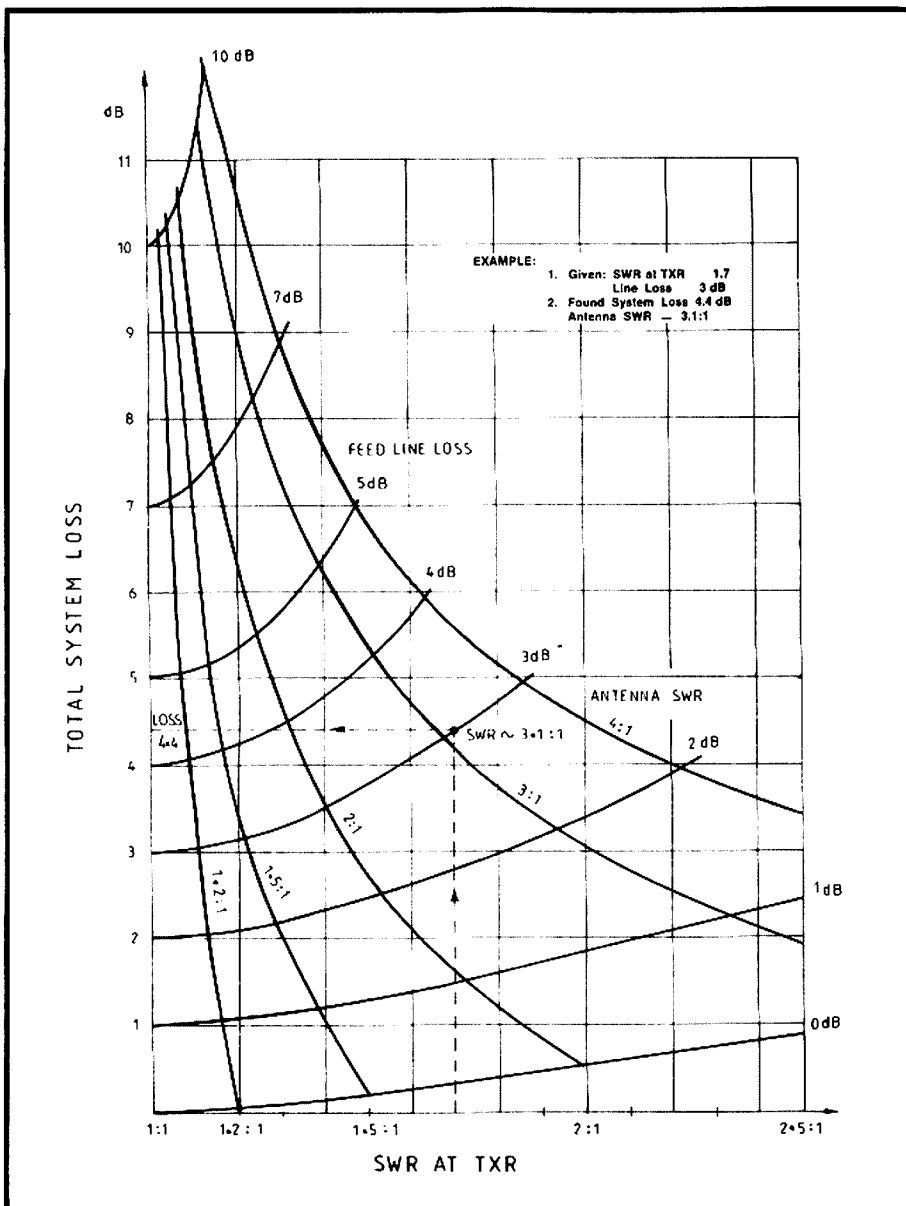


FIG. 1: System loss and antenna SWR chart

By entering all combinations, point by point, and then drawing the various connecting curves, the graph was established. The 0 dB line was constructed from Table 3.

Two parameters must be established to use the graph. One is the SWR measured at the output of the transmitter and the other is the coaxial or parallel feedline loss; this can be obtained with sufficient accuracy from the literature, or from another amateur with access to this information.

It is then possible to find the total system loss and the true antenna SWR. It became very clear from the calculations — as was mentioned in Ron's article — that a high feedline loss tends to disguise the true antenna SWR.

One can conclude from the graph that the system power loss is much more sensi-

tive to line loss than to antenna SWR; one should therefore install feedlines with minimum loss. The antenna SWR, as long as it is kept below 2:1, will not materially affect system performance.

The example quoted on the graph shows quite clearly how it is used, and what information it can give.

I wonder how many amateurs are happily watching the SWR meter in the shack without realizing that their 1.5:1 SWR, together with their 5 dB line loss, hides a 4:1 SWR at the antenna and that this antenna SWR causes an additional power loss of nearly 2 dB. Do they realise, I wonder, that their total system loss of close to 7 dB practically wipes out the nominal gain of their cherished 3-element yagi?

How much power do you really get into the air? ■

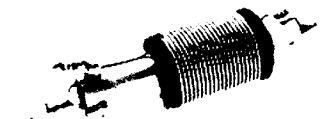
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KW20	20 metres
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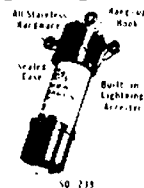
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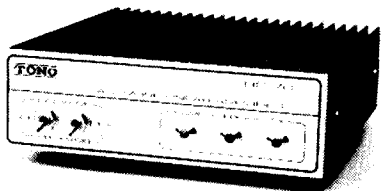
AR SHOWCASE

NEW LINEAR AMPLIFIERS

Authorised distributor for Tono products, Vicom International announce the release of a new range of solid state linear amplifiers for VHF and UHF.

Five models are available for 2m with power outputs up to 210W. One model is designed with the hand-held user in mind offering up to 45W output for 3W input. Most feature an inbuilt receiver pre-amp giving up to 13 dB of gain.

Two models are available for the 70 cm band with power outputs of 40W and 65W. The 65W model, the UC70, also features a high gain receive pre-amp.



Prices and full specifications may be obtained from Vicom International Pty. Ltd., 57 City Road, South Melbourne (03) 62 6931, or at 339 Pacific Highway, Crows Nest (02) 436 2766.

Pictured is the UC70 70 cm linear amplifier. ■

LOW COST 2 TO 2.7 GHz RECEIVING SYSTEM

GFS Electronic Imports of Mitcham, Victoria, have just announced the availability of a low cost 2 to 2.7 GHz down-converter system.

The System, known as System-20, consists of a 24 inch parabolic reflector, feed horn, mast head mounted down-converter, remote mounted power supply/tuning unit and associated mounting hardware as well as interconnecting coaxial cables.

Also available, as an option is a low noise, mast mounted RF amplifier, the Model 2001. It provides 20 dB gain with a 2.6 dB noise figure at 2.5 GHz.

The System-20's parabolic reflector and feed horn have a gain of 21 dBi and a beam width of 13 degrees at 2.5 GHz. This, coupled with RX-2300 down-converter's built-in low noise pre-amplifier, provides a

high overall system gain. The pre-amplifier exhibits a 2.4 dB noise figure with the down-converter providing an overall conversion gain of 25 dB.

The System-20 is continuously tunable over a frequency range of 50 MHz from the power supply/tuning unit. This 50 MHz may be preset anywhere between 2 and 2.7 GHz.

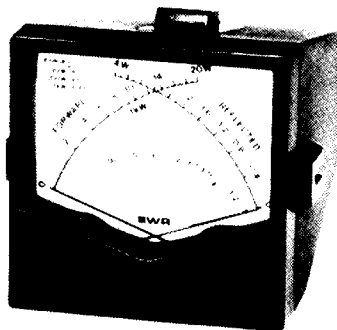
Because of its low cost the System-20 has applications in many areas, including the monitoring of Electronic News Gathering System (ENG), point to point links, weather satellite reception (with the 1.6 GHz version) as well as the 2.3 GHz amateur band.

Cost of the System-20 is a rather remarkable \$399 plus sales tax, while the 2001 low noise amplifier is \$199 plus sales tax.

For further information contact GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. Phone (03) 873 3939. Telex 38053 GFS. ■

NEW DAIWA PRODUCTS

Vicom International Pty. Ltd. the authorised distributor for Daiwa equipment in Australia and New Zealand announce the release of three new meters featuring the famous cross needle principle.



The CN630N is designed with the serious VHF/UHF enthusiast in mind, being identical to the very popular CN630 but fitted with low-loss type "N" connectors. Frequency range is 140-450 MHz and power ranges are 20 and 200W FSD.

The CN510 is a very compact unit covering 1.8-60 MHz with power ranges of 20 and 200W.

The CN540 is identical to the CN510 but covers 50-150 MHz. Both units are ideal for mobile use or for crowded shacks.

Further details may be obtained by contacting Vicom International Pty. Ltd., 57 City Road, South Melbourne (03) 62 6931, or 339 Pacific Highway, Crows Nest (02) 436 2766. ■

ROTATORS

Telex Communications Inc., Minneapolis, U.S.A., have announced the purchase of the Rotator Division of Correll Dubbier (C.D.C.). Production of this famous line of rotators has now commenced at the Lincoln factory for Hy-Gain products.

The product line includes the well known "Tail Twister" T2X, heavy duty rotator for arrays of up to 20 square feet.

Others in the line include the HAM IV which easily handles arrays of up to 15 sq. ft. or the CD4511 for up to 8.5 sq. ft. The lightweight ever reliable, economy AR2XL is a popular choice for lighter weight TV/FM and compact arrays 3 sq. ft.

For further information contact the Hy-Gain distributors:

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CLIPPER CIRCUIT QUIZ

COMPETITION

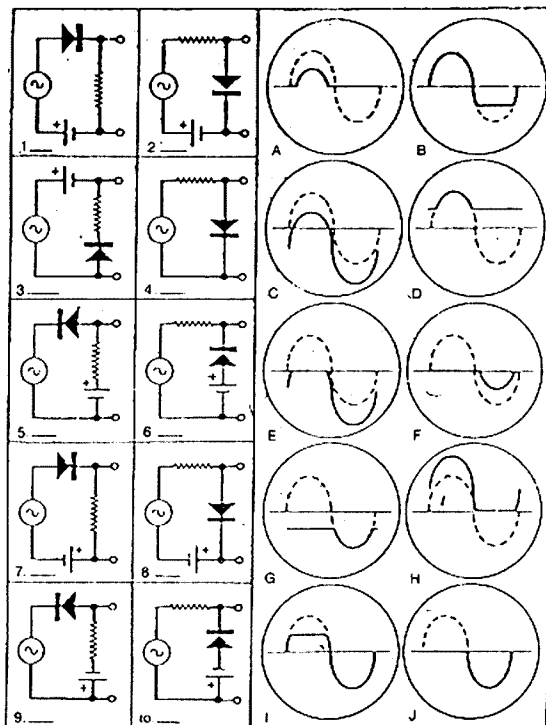


Vicom International Pty. Ltd. have donated a DAIWA CS401, 4 Position Co-axial Switch, valued at \$69, which is to be presented to the winner of this competition. The winning entry will be the first neatest correct answer opened.

A simple circuit consisting of a diode, resistor and battery can be used as a clipper or limiter, or to shift the zero reference level of a waveform. Just what a particular arrangement will do is predictable if you observe the polarity of the net circuit voltage, diode biasing and each voltage drop.

See if you can match the output waveforms (A-J) with the circuits (1-10). In each case, the input is a sine wave with a peak voltage twice the cell's voltage. The resistor is large compared to the forward resistance of the diode yet small compared to its reverse resistance. The dotted lines represent the undistorted output waveform.

HINT: Assume as cell voltage of three volts and see what happens as the input sine wave goes to +6 and -6 volts in 1 volt steps.



RULES:

The contest is open to all financial members of the WIA, with the exception of all people and their immediate families, associated with the production of Amateur Radio. One entry per member, each entry to be handwritten.

Entries must be received no later than last mail, Monday 3rd May and the winning entry will be drawn by the Editor of AR, Bruce VK3UV.

The Editor's decision will be final and no correspondence will be entered into regarding the decision. Results will be published in June AR.

All entries to: AR Competition, Box 150, Toorak, 3142. On the back of the envelope, your name, address, call sign and the answers of a number accompanied by the appropriate letter. ■

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 2 7
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 4 9
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COMPETITION
 WIA
 P.O. BOX 150,
 TOORAK.VIC. 3142.



Amateur Arthropods

An arthropod has antennae, a tough hide, very little brain, and is very short-sighted — and unfortunately a few have crept into the amateur ranks. You can recognise them on air by the way they repeatedly choose the frequency, time, and mode of their activity in a way which causes maximum inconvenience to other band users.

Some more examples are:—

THE 2 METRE TRAPDOORS

The trapdoors have a line-of-sight path of 400 metres or less between their stations, but persist in conducting their rag-chews through the most distant repeater which both can access. They need high power to access the repeater noise-free, so they wipe out the neighbour's TV set as well as needlessly tying up the repeater.

Now for the sixty-four dollar question — are there any amateur arthropods in our club? Of course, everyone would hope not, although at a recent meeting — for a fleeting moment — it almost looked as though one chap sitting near the back had six feet tucked under his chair.

THE 15 METRE FUNNELWEBS

These specialise in long, cross-town rag-chews in the Novice sub-band whenever the band is open, and are very successful in irritating lots of other users. They tie up a channel halfway round the world, and cause interference to local users trying to work weak DX stations on nearby frequencies. The 15 metre Novice band is only 75 kHz wide, so it only takes a few funnelwebs to completely fang out a Saturday or Sunday afternoon DX session for Novice operators. The funnelwebs never consider moving to 80 metres or 10 metres to keep out of everyone's way.

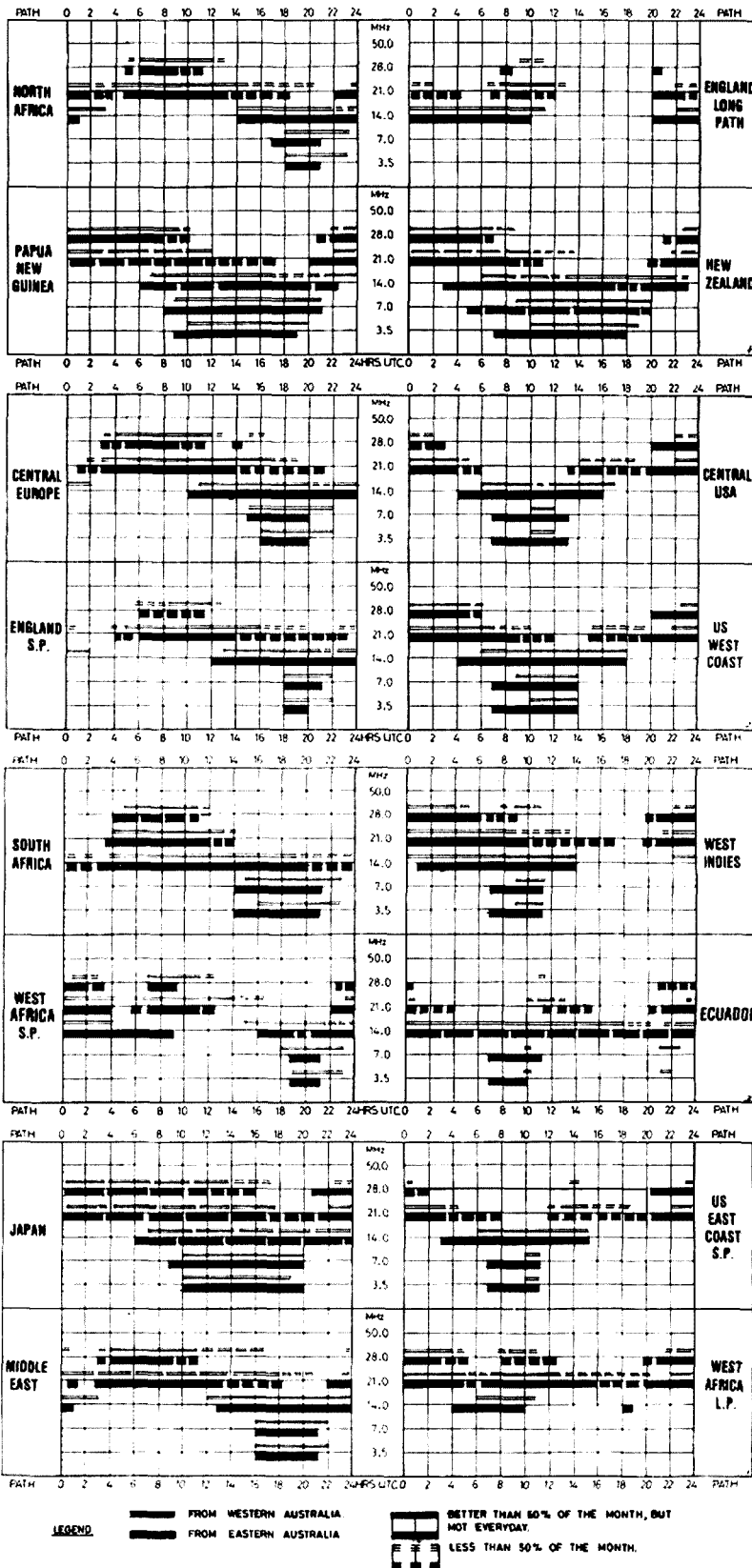
THE 80 METRE EARWIG

In his eagerness to get on the band, the earwig spends most of Saturday evening trying to reduce the SWR on his new dipole. As a result, he makes a channel completely useless over several states at a time when the band is most congested. It wouldn't occur to him to do his tuning in daylight, when the band is relatively empty and he won't be heard over a great distance anyway.

When he's all set up, the earwig can be heard most evenings, for hours on end, in an exclusive QSO with his mate in the next suburb. He doesn't stop to think that he is hogging valuable spectrum space across several states, and that he would help everyone by moving to 10 metres.

IONOSPHERIC PREDICTIONS

Len Poynter
VK3BYE



The WIA is in business for more members. Please help.

Predictions courtesy Department of Science and Environment IPS Sydney. All times universal UTC (GMT).

BOOK REVIEW



In the early days of radio transmitting amateurs were very much aware of developments in the radio communications field. However with the passing of time there have been increasingly rapid advances. The use of communications satellites has become commonplace, while computers are taking an ever increasing role in telecommunications with its rapid diversification. This growth has made it difficult for the amateur to keep up with all current advances.

In his book "Global Talk" (published by Sijhoff and Noordhoff) J. N. Pelton has, in a language that is easily understood, reviewed the current telecommunications explosion.

The communications situation in both the developed and developing countries is discussed, as are the social implications of present and proposed new telecommunications uses.

The information on satellites is particularly interesting to those not actively involved in the field but with a peripheral interest, as also is the chapter on cosmic communications.

In summary, a readable book with a lot of information which would be of interest to the radio amateur.

"Global Talk", J. N. Pelton.

Price: \$11.95 paperback, \$25.00 hardback.

Our copy from —

The Australian Distributors,
D.A. Book Depot Pty. Ltd.,
11-13 Station Street, Mitcham,
Victoria 3132.

VK3ADW. ■

A pedestrian is a man who has two cars, a wife and one or more teenage children.

Tact is the art of making a point without making an enemy.

WARNING!!

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Please ensure it goes ONLY to someone licensed to use it on YOUR bands.

Overseas Visitors

During the 1981/82 Christmas/New Year season, Al Slater G3FXB (DX contestant, FOC Secretary/President and a long-time friend of many Australian amateurs) spent a very pleasant four week holiday in Australia, accompanied by his wife Maud and daughter Dianne.

They travelled from Sydney to Perth via Melbourne, Kyneton, Mt. Gambier and Adelaide. Hosts along the way included VKs 2BPN, 2NI, 3AYI, 3MO, 5MS, 5RG and 6RU, with numerous visits made to other stations along the traversed route.

Highlights of their trip included the

Grampians, Adelaide lights, Indian Pacific Railway, and of course the many wineries visited in South Australia. Al, Maud and Dianne are now back in England but are continually praising the hospitality friendship and cordial welcome they received from all the VKs and their XYLs that they were fortunate enough to meet.

The photograph was taken at a barbecue held in their honour at Rob's VK5RG on 4th January, 1982. Two special guests to meet Al after years of on-air friendship were Jack DeCure VK5KO and Pete Bowman VK5FM.



In the photo are—
Back: Clem VK5GL, Bob VK5MM, Les VK5NJ, Rob VK5RG.

Front: Pete VK5FM, Al G3FXB, Jack VK5KO, Steve VK5ZB/BXG, VK5RG. ■



A recent visitor to Melbourne was Mr. Yoshito Tanaka, JA6VVS, a Trustee of the Japan Amateur Radio League, Inc. Yoshito attended the 11th Pan Pacific Congress of Real Estate Appraisers, Valuers and Counsellors. Alan Noble brought the visitors to an Executive meeting and in this picture Yoshito is the central figure flanked on his right by two friends. On his left is Courtney Scott VK3BNG, Federal Treasurer, followed by Bill Roper VK3ARZ, with glasses, and Bill Rice VK3ABP, Chairman of FTAC, with beard. In the back row, left to right, are

Bruce Bathols VK3UV, Executive Vice Chairman and Editor of AR, Harold Hepburn VK3AFQ, Alan Noble VK3BBM, VK3 Federal Councillor, Peter Wolfenden VK3KAU, Federal President, David Wardlaw VK3ADW, Immediate Past Federal President and Joint IARU Liaison Officer. Unable to attend were Michael Owen VK3KI and Ken Seddon VK3ACS (overseas). Yoshito is active around 21250 kHz Mondays around 12.00-13.00 UTC.

Picture: VK3UV ■

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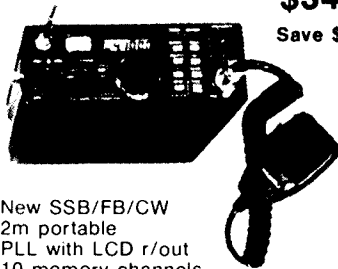
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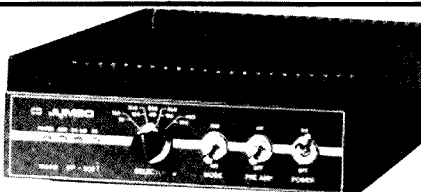
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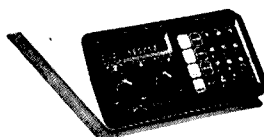
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NOVICE NOTES

Edited by Ron Cook VK3AFW
7 Dallas Ave., Oakleigh 3166

KEEPING THE COAX CONNECTED

In a recent article on preparing for the 30 metre band (AR January 1982) I described a method for attaching coaxial cable to a wire dipole or similar wire antenna. John VK5JG has written to say he has used this method but found that wind movement caused the inner wire of the smaller coax cables to fracture. He also experienced some corrosion problems. Both problems can be greatly reduced by a liberal application of silicone sealant.

As a result of his experiences, John has developed an improved method which is useful for all wire antenna. It is strong and provides an excellent seal for the cable. Fig. 1 shows the arrangement.

The shell is made from a 2 in. piece of 1 in. diameter hardwood dowel or other hardwood timber. A $\frac{3}{8}$ in. diameter central hole is drilled about $1\frac{1}{4}$ in. down the length and the hole is continued through the 2 in. length with a drill that will make the hole

a close fit for the coax to be used. The coax is slipped into the hole, pulled through, stripped as shown, and the inner and braid each soldered to a piece of 12 or 14 s.w.g. copper wire. These wires are clamped on the outside and the assembly is slipped back into the hole, which is filled with Araldite. The longer setting super strength Araldite is used as its penetration is better.

When the Araldite is set the wood can be whittled to shape and the wires bent as required to connect to the antenna. The outside of the shell can be coated with more Araldite. John believes Araldite has good HF insulation properties and the results obtained have not indicated otherwise.

John reports no failures after several years of use. Thank you for a very helpful idea John, it is one I am sure all our readers will appreciate.

There must be many of you out there in "AR reader land" with useful ideas for the novice. Why not drop a short note in the mail and share your idea?

CORRECTION

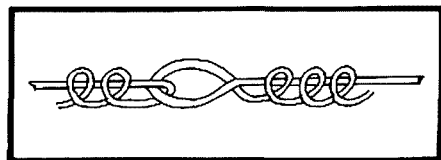
One astute reader, George VK3GI, spotted an error in Novice Notes for November 1981. The last calculation of mismatch and cable loss was shown as 14.4 dB. The correct calculation in expanded form is given below.

Transmitter output: 10 watts.

Power input to aerial after 10 dB coax loss: 1 watt.

Power accepted by aerial with 4:1 VSWR: 0.64 watt.

Reflected power: 0.36 watt.



For a large antenna lengthen the 14 SWG tails and close, twisting back to form a strong loop.

Power reflected and read at meter in shack: 0.036 watt.

Indicated VSWR: 1.13 : 1.

(The error was in the next bit.)

If the aerial radiates all accepted power system gain = $10 \log (0.64/10)$
= -11.9 dB.

That is a loss of 2-3 "S" units, or nearly 12 dB. (Thanks, George.)

George has written an article on the topic of loss in coax and antenna VSWR, which I recommend for careful reading. See page 24.

The moral is still the same. Keep your coax losses low if you want better reports.

LEARNING CW

Did you read the article on learning CW by Alan VK3AMD? If not get a copy of February AR; it's a must for the beginner.



MOBILE FM v. SSB

Noting some official trial reports to evaluate user experience of mobile SSB (with pilot carrier) at about 160 MHz compared with 12.5 kHz and 25 kHz channelling FM, Pat Hawker G3VA, writing in TT Rad. Comm., February 1982, says:—

"These early results indicated that 25 kHz FM was a fairly clear winner, particularly at longer distances, although SSB could (theoretically) provide five times the number of channels. In 'Electronics Letters' (29 October 1981, vol. 17, No. 22, pp. 852-4) A. J. Motley, of British Telecom Research Laboratories, provides further detailed results of these trials, including experience under conditions of co-channel interference. Using the scale 0-4 (4 indicating complete relaxation possible and no effort required, and 0 no meaning understood with any feasible effort), the following results were achieved. Without co-channel interference: 2.4 with 25 kHz FM; 2.2 with 12.5 kHz FM; and 1.9 with SSB. With co-channel interference: 2.4 with 25 kHz FM; 2.1 with 12.5 kHz FM; and 1.8 with SSB. The author comes to the following conclusions: 'These results indicate that using SSB for mobile radio telephony would degrade subjective performance compared with 12.5 kHz channelling and FM by as much as is experienced in changing from 25 to 12.5 kHz FM. Also, SSB would require a higher co-channel interference protection ratio than FM; somewhere above 20 dB seems necessary. However, companding was not employed and may, in practice, improve SSB performance, particularly in the presence of co-channel interference. Also further work (not reported) on impulsive noise blanking shows that the effects of ignition noise can be much reduced.'

'Companding' is a reference to a sophisticated form of 'ACSB' (amplitude companded SSB) that has been developed at Stanford University, USA, and in the UK at Bath University. The transmitted signal is compressed before transmission and then expanded in the receiver by means of very fast AGC circuitry".

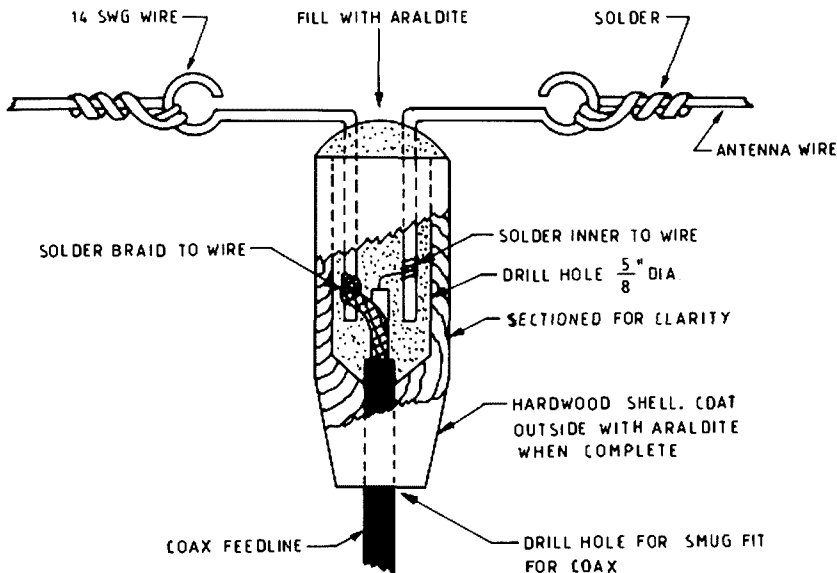
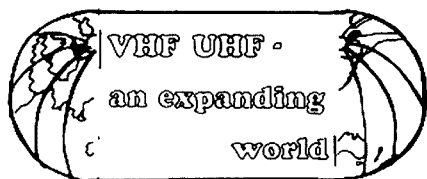


FIG. 1: Construction details



Eric Jamieson VK5LP
Forrester, S.A. 5233

SIX METRES AND TWO METRES

Interesting to note the Solar Flux was very high around the end of January, early February period. On 28/1 to 1/2 it was 156 to 256 with an average of 218.9, and rising to 301 at one period on 1/2. It will be very interesting to see what these figures produce in the way of contacts in the Northern Hemisphere where most of the spectacular activity seems to occur.

It may be worth noting that the excellent 2 metre signals from VK4RO and others from northern Queensland occurred on 31/1 coinciding with the high solar flux, but, of course, this may be totally unrelated to those contacts, but I would almost be prepared to wager there was some tie up. As pointed out last month, there was an absence of short skip contacts at the time of the VK4RO contacts to VK5, signals on 6 metres were strong but not unusually so, so the conditions didn't quite tie up so satisfactorily as they generally do for such 2 metre contacts.

Bob VK5ZRO reported working VK6WG on 3/2 at 2115Z via a repeater whilst mobile, then on 4/2 at 0720Z onwards worked VK6BE and VK6XY on 144.100 then followed with a 70 cm contact with VK6XY at 0955Z. From information exchanged during these contacts it seems the band had generally been open on 2 metres anyway for at least 3 days, once again tying in with the often reported good period around the end of January.

Good 6 metre opening to VK7 from 0915 to 1215Z, then to 11/2 at 1205Z VK8GF 5x9, followed by S7 signals from JA1, 2, 3, 4, 5 and 6, the strong Es pushing the JA signals further south than usual.

To vary the contacts Bob VK5ZRO fired up on 2 metres and with his 28 MHz listening device at 1025Z worked YB0AT via RS6 and at 1050Z via RS8, the Russian satellites, using a vertical antenna on 28 MHz to produce S7 signals. He also worked VK7LZ and VK2BA. Just to prove what can be done if you try, Bob worked VK3XPW via Oscar 8 mode A on 15/2!

20/2: Some excitement in VK4 when it seemed weak CW was being heard around 0130Z peaking NNW and possibly emanating from KL7. When the CW came out of the noise sufficiently here in VK5 it turned out to be a JH7!

21/2: David VK5CK stirring the VK3 camp a bit by sending both 144 and 432 MHz signals that way. Worked Rob VK3BHS at Stawell about 1020Z on both bands, then VK3XDP in Bendigo. Mick VK5ZDR also worked them on 2 metres. VK5LP had to be content with working VK3BHS on 144.050 only! But, as someone else cruelly

remarked, I should be thankful for small mercies anyway!

Bob VK5ZRO continues nightly to have contacts with VK5XRG at Whyalla and VK5ZMJ at Pt. Pirie on 144 and 432 MHz. Signals on the latter band vary from S2 to S9+ depending on conditions. Distances are around 220km to Whyalla and 190km to Port Pirie.

David VK5KK at Artherton on Yorke Peninsula has been working on his 1296 MHz equipment and hopefully will have 40 watts output soon. This should be quite a help when the next contacts are attempted to Albany, etc.

On the 17th January VK5ZRO worked VK6XY, VK6BQ and VK6KJ around 0610Z on 144.100, then followed up with 70 cm contact to VK6KJ who was S9+ with 10 watts. VK5ZMI also worked VK6KJ with 3 watts!

Further news just to hand re 31/1 (that magic day) when VK6WG and VK6KJ were worked by VK5ZRO on both 144 and 432 MHz. Any of these contacts are pretty good as the distances we are looking at are around 2000 km.

1296 MHz CONTACT

Information is a bit sketchy at the moment but it seems Dick VK2BDN worked Brian ZL1AVZ on 8/2 at 1947Z on 1296 MHz for what might yet be a new record, which is presently held by VK6KZ/6 and VK5MC at 1309 miles. It seems the VK2-ZL contact may be slightly longer around 1330 miles. It is understood ZL1AVZ was using 1.5 watts to a 3.6m dish, and Dick VK2BDN 2 watts. Whatever may be the final outcome of this contact, congratulations are due to both these gents for a very fine effort, and it would seem to be the first contact on that band between VK and another country. Well done!

5800 MHz RECORD

While we were talking about the Ultra High Frequencies, I note in December 1981 "Break-In" that the New Zealand record has been extended on 5800 MHz by ZL3FJ and ZL3NW from 138 km to 180.4 km on 10/10/81. The report says: "The record attempt was made in conjunction with a day set aside to check out equipment in preparation for the December Field Day. Signals on 23 cm were colossal, however not as strong as on the ex-commercial 5 cms equipment, this was probably due to the grazing microwave path between the 2 post office sites as the altitude is only several hundred feet at both ends.

Equipment in use at both ends comprised 1 watt Varian klystrons using two 20dB horn antennas with cross coupling for the 30 MHz IF, backend bandwidth was in the region of 200 KHz. Modifications are to be made in the hope of extending the distance still further shortly."

While still in New Zealand I note ZL1AVZ, ZL2KT and ZL1MQ at least worked T32AB on 10/10/81. That's certainly a very rare contact!

SMIRK NEWS

The latest Newsletter from SMIRK contains a number of items worth passing on to readers.

The next SMIRK 6 metre contest will be held on 18-20th June, 1982. This is a preliminary notice of date and information on the contest is to arrive soon in another newsletter.

Membership renewals are now \$3 US, not \$9 as some think. Initial membership is now \$6 US, which includes the dues for that year. Due to high cost of posting newsletters to overseas members it is likely dues by these members will be \$6 US before long. More on this later.

SPECIAL AWARD: The Six Metre International Radio Klub 6-6 Net (SMIRK) has the following to say about a special award.

"During the past several years of high solar activity, a number of 6 metre operators have attained the high plateau of having worked and confirmed 2-way contacts with at least 50 countries on the 50-54 MHz band. This is an accomplishment that would have been unheard of less than 10 years ago when there were only about half that many countries active. There are now over 100 countries actively operating the 6 metre band now, with some operators having worked over 60 and some say, over 70 countries directly on 6 metres. SMIRK will recognize the efforts made by awarding a beautiful trophy to the one operator who can prove that he first made contact with 50 ARRL listed countries on the 6 metre band. Here are the requirements for the award:

"Operators who have worked and confirmed by QSL, 50 countries on 6 metres (no crossband contacts outside the 6 metre band can be accepted), should send Dick Lent, W5NKG, 5634 Seacomber Place, San Antonio, TX 78242, U.S.A., a list showing each of the 50 2-way contacts made. This list must show the full name, call sign and address of the operator applying for the award; the call sign of each station worked; date and time of each contact; mode of emission used; and the name of the ARRL Countries Listed country worked. The applicant must still be active on the 6 metre band.

"This award application must be verified by two disinterested licenced amateur radio operators. The application must be signed by the applicant and the two witnesses, giving full names and call signs. QSL's are not required to be sent with the application but must be available should SMIRK request them for verification. This award will be free to the awardee. Deadline for application is 1st May 1982, postmark. The award is in the form of a golden globe of the world, with the continents outlined, borne on the wings of two golden eagles. It is topped by the number 50, in gold, on a golden horseshoe. It will be an award to cherish. Apply now before you miss the deadline."

Unfortunately, I doubt if the award is likely to be claimed by anyone in Australia as we have had to work under severe disadvantages with our 52 to 54 MHz band instead of the greater part of the world which enjoys a better position at 50 to 54 MHz. Good luck to whoever wins the award, it will be well deserved. It is hoped

SMIRK will continue to recognize in some form or other the other operators who will eventually also reach 50 and more countries.

I did mention in my last notes and will mention here again that I am firmly opposed to those amateurs who are claiming having Worked-All-Continents (WAC) on 6 metres without having worked Australia. I cannot see by the fondest imagination that working some area in Oceania (Pacific area), e.g. Guam, New Hebrides, etc., can be classed as working the sixth Continent. Whether those in Europe or the Americas like it or not, Australia IS the sixth Continent and no claims for working all Continents should be entertained until such time as the operators have, in fact, worked Australia. If such claims are to be accepted, then I could conceivably claim to work Africa if I should work say The Seychelles in the Indian Ocean, or to have worked U.S.A. by working Cuba or Bermuda. Fair go, fellows, do it properly! Just try making that sort of claim for an HF award requiring all Continents!

THE SUNSPOT CYCLE

Graham VK6RO has been trying to assemble for me an excellent set of charts outlining the peaks and troughs of sunspot cycles from 1945 to 1981. They are very interesting, but we are missing the one covering 1958 to 1970 and these charts are contained in the Japanese language CQ ham radio magazine, and we need the graph from the November 1981 issue. Can anyone oblige with a copy please so we can have a look at the full period involved? There is also another chart sent by Graham showing details of reception of 5B4CY, etc., in Japan and I want to include details of this at a later date.

TECHNICAL TIP

Something always suspected, but just recently proved, was that the use of PL259 plugs on coaxial cable for 432 MHz produces a significant hump in the SWR and causes the loss of power.

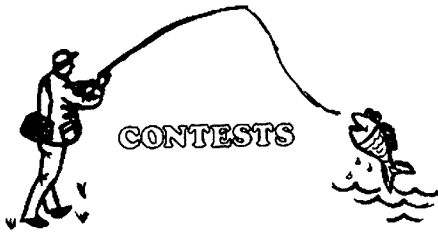
Recently David VK5CK and I (VK5LP) were carrying out tests on the ATN type 16LB 432 MHz antenna (more on the reasons for this later) and using the Bird 47 watt meter with it's N connectors, we were connecting the 16LB with FR1 50 ohm coax with a PL259 plug on the transmitter end. This was converted to N fitting by a short cable with N one end and PL259 the other with a joiner to connect to the coax lead. At some stage we wondered what would happen if we improved the termination, so a special adaptor was found which dispensed with the joiner and converted straight to N. An Immediate improvement was noted. The PL259 was then removed from the coax and an N plug fitted, the SWR went almost down to unity and picked up several watts in output power. So it seems the often used PL259 doesn't really do well at 432 MHz as we have been told for years, it's upper limit for the better constructed types seems to be 144 MHz, and those with poorer insulation no higher than 6 metres.

CLOSURE

This month of April will hopefully see some signals coming from across the Pacific into Australia for what might be a last ditch fling before Cycle 21 closes down. Last year Easter Monday was an incredible day for Australia, with 7 to 8 overseas countries being worked on 52 MHz and a further 7 to 8 being heard on 50 MHz but not worked. Will there be a repeat? Best times to listen will probably still be early morning up to 0000Z and again in the afternoon from about 0730Z onwards, but hopefully other signals will be available at odd hours of the day. Certainly be on the band as much as possible during the weekends and over Easter, and Anzac Day, 25th April will be available as a holiday on Monday, 26th April, this year, another possibility.

May I make a plea to all operators — if there are exotic signals around keep your contacts with them short, exchange signal reports and names and leave it at that; this way the rare ones can be shared by more. And if a rare station appears on the band on more than one occasion and you have already worked him, don't rush in and work him again just to be able to say you have done it again — be fair enough to let others who may not have been so fortunate previously to now try, only go in again when the DX station seems to be calling and getting no response.

Closing with the thought for the month: "The list of public problems that will get worse before they get better looks as if it will get longer before it gets shorter." 73. The Voice in the Hills. ■



Reg Dwyer VK1BR
PO Box 236, Jamison 2614

CONTEST CALENDAR

- April
 - 3-4 POLISH CW CONTEST
 - 17-18 POLISH PHONE
 - 24-2 HELVETIA
- May
 - 29-30 CQ WW WPX CW.

Please do not use the new 10 MHz band for contest operation, there is only a small portion of the band allocated to the amateur service and then it's on a secondary basis. Part of the band has been allocated to low power stations and it could cause interference problems if contests were to be held on the adjacent frequencies.

RESULTS OF THE 1982 ROSS HULL VHF CONTEST

Following is the results of the 1982 Contest. Although the level of activity was not very high, there were some excellent performances by those who did submit a log.

From the results it is obvious that those operators who were able to utilize a compliment of bands had an advantage over the single band operators. The Contest is designed to promote the full and useful operation of these newer frequencies with a view to improving radio frequency techniques in the VHF and UHF regions.

Remember, if we don't use them, we lose them.

Thank you for the excellent quality of the logs submitted and the comments/wishes contained on them.

Now the results.

The overall winner is Walter J. Howse **VK6KZ**.

1982 ROSS HULL VHF CONTEST 7 DAY SECTION

Call Sign	Score	Bands Used				
*VK6KZ	34310	52	144	432	1296	2304
VK2ASZ	7290	52	144	—	—	—
VK2KCI	6992	52	144	—	—	—
VK3YNB	5280	52	144	432	—	—
VK3XQ	5010	52	144	—	—	—
VK7KJ	4912	52	144	—	—	—
VK4DO	4722	52	144	—	—	—
VK2ZQC	4100	52	144	432	1296	—
VK3YRP	3630	52	144	—	—	—
VK2BDN	3532	52	144	432	1296	—
VK3VF	3065	52	144	432	—	—
VK2ZIR	2217	52	—	—	—	—
VK7ZZ	944	52	144	—	—	—
VK2YVY	862	52	144	—	—	—
VK4ZTV	770	52	144	—	—	—

ROSS HULL VHF CONTEST 2 DAY SECTION

Call Sign	Score	Bands Used				
VK6KZ	1150	52	144	432	1296	2304
*VK2ASZ	3034	52	144	—	—	—
VK2KCI	2550	52	144	—	—	—
VK3YNB	2070	52	144	432	—	—
VK2BDN	1952	52	144	432	1296	—
VK3XQ	1936	52	144	—	—	—
VK7KJ	1838	52	144	—	—	—
VK4DO	1464	52	144	—	—	—
VK3YRP	1354	52	144	—	—	—
VK3VF	1011	52	144	432	—	—
VK2ZIR	747	52	—	—	—	—
VK8GF	700	52	—	—	—	—
VK2YVY	336	52	144	—	—	—
VK4ZTV	278	52	144	—	—	—
VK5ZTP	83	52	144	—	—	—

No SWL logs were received up to the closing date of the Contest.

NOTE: As VK6KZ has won the 7 day section he cannot be eligible for the 2 day section. Therefore Robert Lear VK2ASZ has won this section with the highest acceptable score.

The * mark shows a certificate winner. Congratulations to all who entered. ■

Photographs for AR
DON'T KEEP THEM
TO YOURSELF
Send them in — NOW



INTERNATIONAL NEWS

● Stop Press

Just received is a circular from Mr. M. Mili, Secretary-General of the ITU regarding WCY '83, part of which reads:—

"Since the early days of radio, radio amateurs have contributed to the technological and scientific development of communications as an instrument of peace, friendship, and technical education. Radio amateurs throughout the world now have a unique opportunity of helping to strengthen the ITU's efforts to develop the world's communications infrastructures.

It would be appreciated if you could publicize the Year on the largest possible scale and I should be grateful for any information you could give me in this connection and, in particular, on any events which you might be able to organize for radio amateurs during the Year." ■

8J1ITU was the special call sign allocated in Japan to mark World Telecommunication Day, 17th May, 1981.

CHINA

The following preface from "Wuxidian", the monthly radio magazine published in Beijing, January, 1982 issue, issued by Cheng Ping, Secretary General of the China Radio Sport Association and received via JARL and IARU R3 Association will be of interest to many members:—

"Thanks to the support given by all leading bodies concerned and through the active preparation made by departments involved, the Supreme Executive Council of China has officially approved the re-opening and development of the long awaited activities of Amateur Radio in China.

Amateur radio stations to be established shall be organised on club system basis with a leader in charge.

First station to open will be in Beijing, where conditions are already met for operation then followed by other stations to be installed in provinces, regions and cities.

After operating for some time, all experiences accrued from these activities will be put together by gradual steps in order to facilitate the extension of the scope of activities as well as to perfect the system and method of management.

Possible sites envisaged for establishing Amateur Radio stations are: various military physical educational schools, universities, colleges, youth culture centres and science and technical institutions that will meet the objective requirements.

Persons participating in Amateur Radio activities should support the guiding principle of the Chinese Communist Party, devote themselves to the socialistic motherland and obey the national laws and governing regulations of radio communication. Also, they should cherish the idea of internationalism and humanism, have lofty character and respect culture and manners. In addition, they must actively pursue their work and endeavour to raise technical standards, thus devoting to the progress of society and bringing peace to mankind.

Each of the club stations should file application for opening of radio station and acquire licence. For the time being, no permit will be issued to stations on individual basis. Those wishing to take in Amateur must first receive training in this art, pass the examination and acquire certification for operation before participating in the activities of the designated club stations.

Use of frequencies, extent of communication and activities will be, in general, along the lines established in the international Amateur Radio regulations.

The development of Amateur Radio activities will not only be instrumental in training persons with talent in the radio telecommunications and electronic fields but also provide ground for study and experiments of scientific techniques to many of the Amateur Radio enthusiasts. Furthermore, it will be able to promote technical exchanges with ham enthusiasts both in China and foreign countries as well as to enhance the friendship between them.

In particular, the youth can greatly benefit from this development in that it will enlarge their mental vision, raise their desire of taking part in this activity, it will also enrich their scientific knowledge and greatly develop their talent in this field. It will go a long way in making an all-round development of intelligence, virtue, the body and, as a link of four modernisation programs, train potential technical personnel in radio telecommunication technology.

Presently, the China Radio Sport Association is actively making preparation for this program and it will not be too long before BY1PK will be on the air."

IARU R3 ASSOCIATION CONFERENCE

This Fifth Triennial Conference, scheduled for 2nd to 5th April in Manila, has a very full agenda. Apart from considering the reports of each member society, financial

matters require close attention, particularly in relation to future commitments and the level of annual dues payable by the member societies.

There is a wide range of subjects down for discussion, which include:—

- Anticipating the future popularity of the 10 MHz band, the RSGB proposed narrow-band methods of transmission only.
- Another RSGB paper suggests the tone (T) part of telegraphy reports should be abolished and signal strength reports should be simplified to —

- S1 barely perceptible
- S3 weak
- S5 fair
- S7 strong
- S9 extremely strong

as suitable for reports by ear alone and still compatible with S meter readings.

- Standard specifications for QSL cards are agenda items sent in by HARTS, NZART and JARL.
- The World-wide QTH locator system is up for discussion on the basis of accepting both a 'Human Language Code System' (based on latitude and longitude) as developed by JARL and the Region 1 locator based on a "squares" concept.
- The NZART introduced the concept of an "International Amateur Radio Licence" similar to the International driving licence (this idea was accepted at the WIA 1979 Federal Convention).
- An IARU R3 Association Award is put forward by NZART.
- NZART propose more attention be given to the exploitation of the amateur GHz bands, also in the light of Region 1 work on the subject.
- A world-wide co-ordination of member society contests dates is suggested by NZART.
- The WIA submitted papers relating to—
 1. The great importance of CCIR work;
 2. The need for visitors ('guest') licensing as being desirable in overseas countries;
 3. Discussion papers on work done in Australia by EMC and non-ionizing radiation;
 4. A study on the first 5 years of Novice licensing in Australia, including up-grading trends;
 5. Amateur radio involvement in WCY 83.

THIRD PARTY

On application by the WIA the DOC commenced negotiations through diplomatic channels for an ad hoc short term agreement on third party with Brazil specifically for the Sydney-Rio yacht race, which began in January. The eventual reply from the Brazilian Embassy was in the negative on the grounds that the race is being monitored by the Brazilian Maritime Mobile Service and Amateur Stations in any event are permitted to pass on distress calls by third parties. ■



Robin Harwood VK7RH
5 Helen St., Launceston, Tasmania 7250

One of the indispensable aids in my shack that I use in my monitoring, is a copy of the World Radio TV Handbook. This is a most comprehensive and authoritative survey, concentrating mainly on shortwave, of all international and domestic radio and TV broadcasting stations throughout the World, together with their transmission times, facilities, personnel, languages, etc. As well, this 592 page Directory lists the current Standard Frequency & Time Signal Services operational at the present time.

One feature of interest to me especially in the 36th Edition, is a survey of receiving equipment currently available, which can be found at the rear of the Handbook. There are reviews of receivers from the professional models such as the Drake R4245 and the Racal RA6790/GM, the semi-professional Drake R7A (which gets quite an extensive review) to semi-portables such as the Sony CRF-1. All these sets were evaluated by Larry Magne, a well-known Stateside DXer. Personally, I find these comparisons of performances obtained from the different models extremely helpful. The WRTH editors have indicated this survey will be included annually in all future editions of the Handbook. The 1982 Edition is published by Billboard Limited, and is edited by Jens Frost, assisted by Andy Sennit. It should be, by now available in most technical bookshops or depots. My copy came direct from the publishers in Denmark and is certainly well worth the price.

ESPERANTO

Another section I noted in the 1982 WRTH, is a section devoted to broadcasts in Esperanto. In the latter half of the 19th Century, a need arose for a Universal language, especially in Europe with its many differing languages and dialects. So attempts were made to devise an international language. A German linguistic scholar, Johann Martin Schleyer, developed a language called "VOLAPUK" in 1880, based partly on English. It, alas, had its weaknesses and inconsistencies and fell into disuse. In 1887, Dr. L. L. Zamenhof published his book called "ESPERANTO". In it he devised an artificially created lingua franca that is a mixture of Continental European languages with a very simple grammar.

Although it did gain some ground, particularly in Central and Eastern Europe, during the early part of this Century, its use has been mainly restricted to intellectual circles, and has not spread to the vast majority of the populace. There are an estimated 450,000 people worldwide who can speak Esperanto and, as a consequence, there is not a wide listening

audience for programmes aired in this language. Only half a dozen stations are utilizing it, and only weekly at that. Radio Peking and Radio Vaticana probably are the easiest ones heard within this region. R. Vaticana can be heard at 0510 UTC April to September (0610 October til March) on 11740 KHz on Thursdays. When I first encountered this programme, I was stumped trying to identify the language.

CHINA

Now those who monitor broadcasts from China, and wish to submit reports of reception to the various stations, don't just assume that the Programme is in Chinese. Although a quarter of the World's population are Chinese, its language is broken down and fragmented into a myriad of dialects, hindering conversation of people from different parts of the Nation. Fortunately, the written language (or ideograms) is understood by all, despite its 2,000+ characters. These dialects mirror the different regions where they are spoken. For example, Cantonese, Chaochow, Amoy, Hakka, Szechuanese, Changhaiese are all spoken in the regions from which they derive their names. As well, there is a Standard Chinese spoken, known as Mandarin. This, in Imperial times, was the administrative lingua franca and widely used in those circles.

Many SW outlets of PRC Domestic Services do use predominantly Mandarin as well as regional languages. Programmes are also broadcast in the languages of the Minorities such as Mongolian, Kazakh, Uighur, Vietnamese, Tibetan, etc. All stations at some time will carry programmes from Peking (Beijing), but Provincial stations have their own broadcasts, often in some regional dialects. Here are two examples of this: The Fujian Front Station, which broadcasts to Taiwan and the offshore islands controlled by the Nationalists, uses the Amoy dialect at 1100 UTC on 7025 KHz, while another station located nearby has programmes on 7095 KHz in Standard Chinese from either Shanghai or Beijing at the same time. Very soon, you will be able to discern the differences between Mandarin and the dialects.

Many International stations broadcasting to China and S.E. Asia do use Mandarin, but especially Cantonese, as most emigration from China was from its Southern provincial regions, hence it is widely spoken outside of the PRC.

The Soviet Union employs the various dialects in its programmes specifically aimed to the major cities and regions where they are extensively spoken. As well, there are numerous shortwave outlets within the PRC with relays of the Domestic Services, together with special transmissions in Mandarin and/or dialects for the Overseas Chinese. A full listing of these services can be found in the latest WRTH (pp. 193-196).

CYPHER

Tuning across the bands, have you heard stations broadcasting five-number cypher groups in either Spanish or German? For many years now, I've come across these

signals, usually on AM around 6.8-6.9 MHz variable, with a female announcer giving off a long stream of cypher groups. These often last for 15 minutes or so, and are on at different times and channels each day. Recently, I encountered one on our new thirty metre allocation at about 0745 UTC in Spanish. According to overseas reports, these are possibly engaged in espionage, and are reportedly located in either the German Democratic Republic or Cuba. An artificial language is also used sometimes, especially in Europe, where a number of channels between 3 and 5 MHz have been monitored.

There were similar operations launched by NATO countries during the Cold War period, but I don't know if they still use this alphanumeric cypher in Plain Language. Yet anti-Castro exiles in the States are known to be active in clandestine communications to Cuba, so perhaps some of the Spanish "numbers" stations could conceivably belong to them.

Well, that is all for this month. Until next time, the best of 73 and good DXing!

CALL BOOK DATA REMINDER

The Editor is aware that there are still a small number of errors, duplications and omissions as well as uncorrected addresses in the current edition.

The data in the Call Book is only as accurate and complete as the information supplied to the Institute.

PLEASE tell us about any errors, etc., and please tell your amateur friends to tell us too. Write to —

WIA
Box 150, Toorak, Vic. 3142

GOOF DEPT. — Feb.

Murphy claimed his fair share in our February issue:

The article "Towers and the Law" page 14, was written and submitted by Ian Hunt VK5QX, and not John Ingham as noted. Our apologies to both.

Alan Doble's VK3AMD article entitled "Learning the Code for the First Time", page 23, contains a typographical error. The word 'increasing' in the 3rd column, 4th line, should be "decreasing".

Please amend your copy now.

VK3UV

BUYING OR SELLING GEAR?

HAMADS
MAKE IT HAPPEN FAST



Bill Verrall VK5WV
7 Lilac Avenue, Flinders Park, SA 5025

Here are details of two new awards which are now available from within VK.

THE WHITE BULL AWARD

This award is available from the Roma and District Amateur Radio Society, Queensland, to licensed amateurs and SWLs in any part of the world, operating from a fixed, portable or mobile amateur station. The rules for this Award are:—

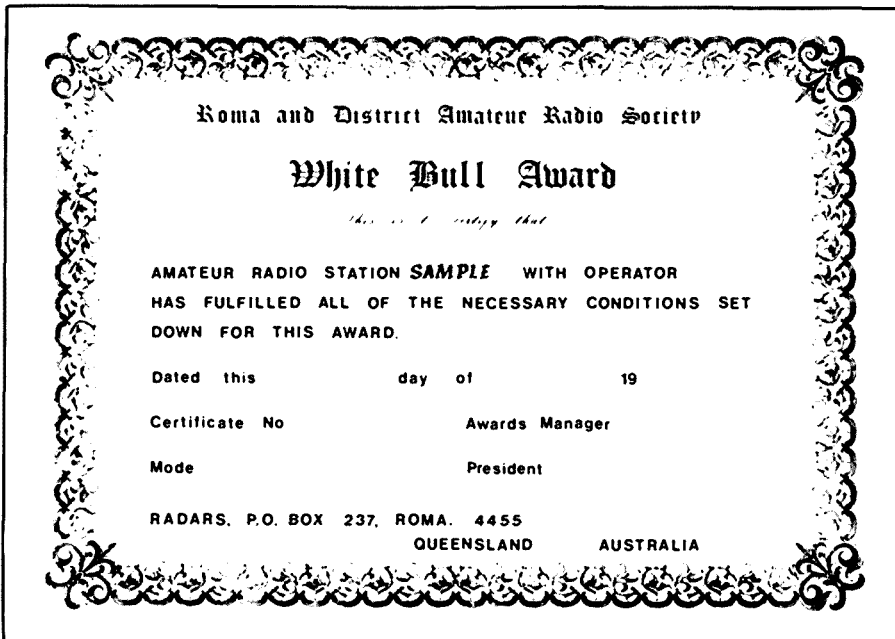
1. STATIONS OUTSIDE AUSTRALIA: By obtaining five (5) points by way of two-way contacts with licensed amateur members of The Roma and District Amateur Radio Society in the Roma District, Queensland, on either CW, FM, AM, SSB or RTTY on any amateur band.
2. STATIONS WITHIN AUSTRALIA: As above but seven (7) points are needed. (Stations resident in Roma Town or Bungil Shire are not eligible for the Award.)
3. No cross-mode contacts permitted.
4. Contacts on MF or HF count as one (1) point each. The first contact on VHF or above is worth two (2) points, all subsequent contacts count as one (1) point.
5. First contact with either club station VK4AEB or VK4NCI (ANY LICENSED BAND) is worth two (2) points, all subsequent contacts count as one (1) point.
6. Stations can only be worked once on any band.
7. Contest contacts not counted.
8. Points can be obtained by calling in on the Club net every Friday night (except third Friday) on 3.615 MHz ± QRM at 1000 UTC.
9. QSL cards are not required. Applicants must send a log extract containing all relevant information (date, time, frequency, mode, signal reports (sent/received), call sign).
10. Contacts made after 1st July, 1981, are eligible.
11. Cost of the Award is \$2 (two dollars) or an equivalent amount of postage stamps. Overseas stations A\$4 (four dollars Australian).
12. Address all applications to:—
AWARDS MANAGER.

Roma and District Amateur Radio Society,
PO Box 237,
Roma 4455,
Queensland, Australia.

DESCRIPTION

This Award is printed in two colours on white card. The illustration of the "White Bull" is in yellow with the surround and

all printing in black. The dimensions are 315 mm x 230 mm. Applicants for this Award will also receive a two-page foolscap writing describing the history of the "White Bull" and giving a very interesting insight into a little known incident of villainy which would probably only be known to the most advanced students of early Australian history.

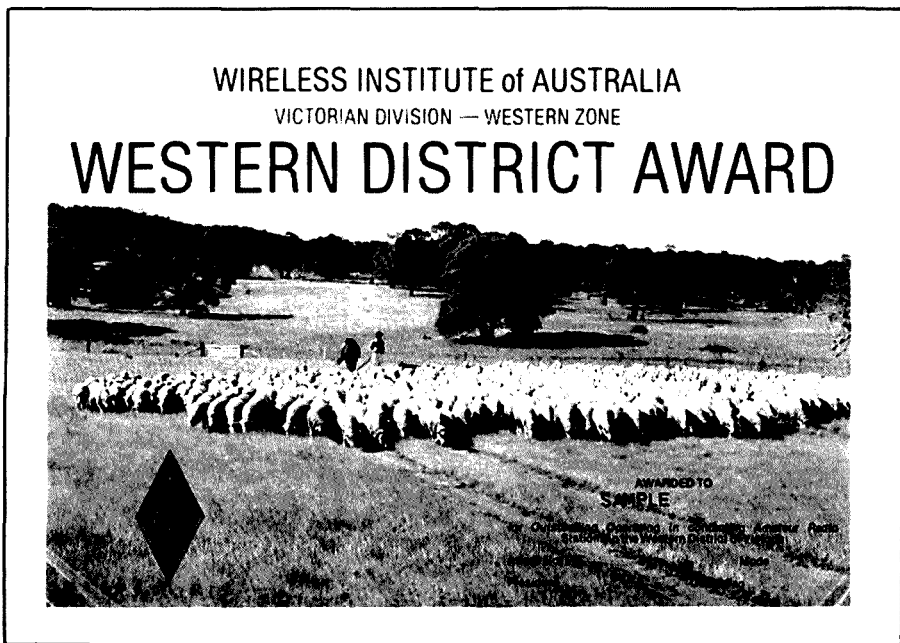


THE WESTERN DISTRICT AWARD

This new Award is now available from the Western Zone, Victorian Division of the WIA. The rules for this award are:—

1. VK STATIONS: Work 10 different amateur stations located in the Western Districts of Victoria (VK3).
2. DX STATIONS: Work 5 stations as above.
3. Any band, any mode, is acceptable.

4. SWLs may apply for this Award.
5. QSL cards are not required. A GCR log extract showing all relevant QSO details is accepted for this Award.
6. The cost of the Award is Aust. \$2.00 or equivalent.
7. Applications may be sent to:—
Awards Custodian, Maurie Batt,
RSD, Rokewood Junction,
Victoria, Australia 3351.



DESCRIPTION

This Award is a very encouraging departure from the norm and is in accordance with my particular personal preference. Other AR clubs, etc., who are considering creating their own award could do well to follow this example. All awards from New Zealand are in the same style. As can be seen from the illustration, the subject matter depicts a rural scene which is typical of the Western District of Victoria, and would perhaps convey to most overseas recipients an idea of the topography of some southern Australian bushland, and also illustrated a principal rural industry of Australia which is well known overseas.

This Award is predominantly green with a blue sky and black printing with WIA logo. The printing is a very high standard. This Award is a credit to the photographer who may have used some sort of movable film pack camera to get all detail in such sharp focus.

The Award is printed on high quality matt paper, measuring 310 mm x 220 mm and is well worth framing on the shack wall.

GOOD HUNTING. ■



No Songs for Hams

Harry Atkinson VK6WZ

294 Middleton Road, Albany, WA 6330

There are no movies going around just now about hams. And no songs about them on the charts.

So, gentlemen, we have to go out there and for the first time in eighty years or so get some mileage for our hobby.

We've been too modest (or too lazy) for too long.

Every time ham radio does something it should not only be reported on your Divisional broadcast and sent in to AR — it should also be brought to the notice of the print and electronic media.

So you provided communications during a flood or bushfire. Or your group has just built the latest and greatest repeater. Tell the media.

You've worked with youth groups on projects like JOTA. See that the radio TV and newspaper reporters get to know about it.

In February, David Cowper ZD7RB, sailing his 41 ft. (or 12 metre) sloop "Ocean Bound" around the world "the wrong way", made his first landfall since calling in at Falkland Islands, at Albany, W.A. ■

Many amateur operators in New Zealand and Australia assisted David with relayed weather data and other material and the last links on the western end of the Bight were Arthur VK6ART and Bernle VK6KJ — the former in Perth, the latter in Albany.

As David sailed into the Western Australian waters the tempo of QSOs built up. His wife Caroline and three-year-old son Freddie were flying out from the UK to meet him in Albany... an old friend from Queensland flew across the continent to be there... and an expert on automatic steering equipment was on his way from England.

The Six Kilo Charlie Travellers' Net... Bernie, Arthur and others were all kept busy teeing up all these things, plus making contact with the local sailing club, harbour authority and suppliers of various goods and services so that everything would be in readiness when "Ocean Bound" arrived.

And all the time David had to keep his overs short to conserve precious battery power to the rig which put out — would you believe? — three watts on 7 MHz!

By Monday, February 8, David was hopeful of landfall on the following Wednesday and activity increased in complexity and tempo.

Shortly after nine Monday morning the Southern Electronics Group handed to each of the five media in Albany — two newspapers plus national and commercial radio and television — a concise briefing which set out the names of yachtsman and boat, Bernie's name, call sign and telephone number, plus names and phone numbers of others likely to help the media get the full story.

The briefing also clearly set out that (a) amateur radio was over 80 years old, (b) it was recognized by almost every world government (c) it had provided consistent radio contact with "Ocean Bound" ever since it sailed out of Plymouth in September last, and (d) ham radio was not to be confused with CB radio or pirates.

This briefing (it was not a "media release" — it was in concise, almost telegraphic style) also gave the media its first intimation of David's ETA.

The briefing paid off. All media gave David and his exploits full coverage and amateur radio got full (and correct) credit.

The ZL and VK content of the "Ocean Bound" radio saga must have taken up hundreds of operator-hours, no one knows how many dollars worth of local and STD phone calls and car mileage — and everyone involved deserves highest commendation.

It took one guy about one hour's work to see that all media in his town got the facts right and that all that much greater effort by all the others was at least briefly mentioned in press and on radio and TV.

Wouldn't it be worth just that little extra effort by someone in YOUR club to "woo the journals" and make some new friends? ■

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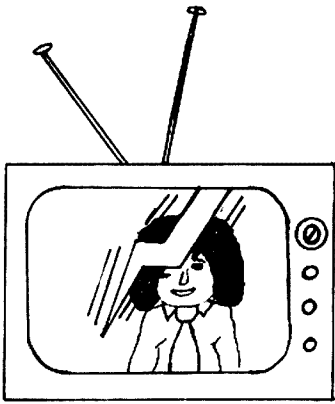
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NATIONAL EMC ADVISORY SERVICE

JUSTICE

"It is an unfortunate fact of life that in the majority of cases, right or wrong, the minority are persecuted by the majority." The Amateur Radio Movement is no exception! World-wide, radio amateurs have been fighting their case against unjust persecutions by authorities over "Radio Frequency Interference" for many years.

The true cause of most of the interference problems has been (and still is in many cases) the susceptibility of domestic entertainment equipment to unwanted information.

After many years of fighting this unenviable battle against superior odds, we are at last seeing some light at the end of the tunnel. A recent DOC review of the "Citizen Band Radio Service" stated in Section:—

4.15.1. A considerable number of submissions relate to interference to Radio and TV reception caused by CBRS transmissions and to the operation of audio and home entertainment equipment.

4.15.2. The Committee understands that the major contributor to this problem is the vulnerability of entertainment equipment and is of the opinion that the solution lies in improved immunity of this equipment coupled with maintenance of existing power and aerial gain restrictions within the CBRS equipment specifications.

4.15.3. The Committee *understands* that action to improve equipment immunity to interference is being pursued.

7/5. A major problem causing interference is the vulnerability of entertainment equipment. Action to improve equipment immunity to interference is being pursued (para. 4.15.3).

POT-POUR-RI

Essendon airport — aircraft approaching from the east reported hearing broadcasting stations (sometimes 3DB, sometimes 3UZ) on 116.1 MHz; several aircraft reported the problem. As the problem could not be heard at the control tower, an airborne search was made, and the interference was found to be located in the Preston area.

After a detailed investigation it was found that the transmission was emanating from a broadcast receiver in a house in Preston. The RMIT investigated the receiver, which was impounded by the RI. The RMIT concluded that the output valve (6V6) was oscillating on 116.1 MHz — caused by a faulty bypass capacitor, and the length of the wires to the speaker

played an important part in deciding the frequency of oscillation. The "oscillator" was being grid modulated by whatever station was tuned-in by the receiver's owner.

During the years 1946-1950 the Department of Transport had a receiving station at Craigieburn. A battery of HF receivers was connected to Essendon by land-lines. Occasionally the tower would report 3LO coming through on 4495 kHz. Each time a technician was sent to Craigieburn the interference had stopped. Many hours of investigations revealed nothing: It was only by accident that the problem was found. Riggers, while working at the top of one of the towers, happened to throw a piece of timber down which struck one of the guys—vibrations caused intermittent reception of 3LO at Essendon Tower. Oxidation between a thimble and a turnbuckle half-way down the guy was enough to create diode action and re-radiate a good 3LO signal on 4495 kHz, despite the fact that 3LO Sydneyham is 7-8 miles away.

PERSECUTION?

A recent example of incredible persecution comes from a NSW amateur:—

"My recent experiences with a nearby resident and his complaint about TVI from my amateur radio station reached a sequel before Christmas 1981, when all cables from my radio tower were deliberately cut to put my station off the air.

The culprit(s) of this action are known but because they were not caught in the act of committing the offence no action can be taken by myself to seek redress for damage caused, according to the police who were called in to investigate the sabotage.

The police subsequently interviewed the suspect resident who naturally denied any involvement in the act!

The events leading up to the cutting of the cables are summarised as follows:—

Over the last three years since the resident moved into the street, he has complained of TVI so often that I had been restricting my on-air operating hours mainly because he would not allow me to observe the so-called TVI while another amateur operated my rigs, comprising a Kenwood TS-520 and a Swan 750CW transceivers.

It should be mentioned that my home colour TV receiver, a Sanyo 53 cm set using a 7 element yagi antenna for reception, is free of TVI with the exception

of Ch. 2 Sydney which has such a low field strength on the Central Coast that TVI on that channel would not be investigated by the Inspectors.

Eventually in December 1980 the Radio Branch of Telecom was requested to assist me to resolve the resident's TVI problems.

An RI duly arrived some days later and he asked me to transmit alternatively between the TS-520 and Swan 750CW rigs using CW and SSB modes on 14, 21 and 28 MHz bands, each rig being run full power into a Hy-gain 3 element triband yagi antenna pointed into the resident's TV antenna.

At the conclusion of these RI supervised tests, the RI said he was not able to detect any TVI when I was transmitting, however he noticed severe HT power line interference.

This resident, however, would not accept the RI's verbal report, so he decided to put his home up for sale and get away from my location, and for about three months after the RI's visit all was quiet and I continued to operate my station with Telecom approval, but a buyer for the resident's home did not eventuate!

The resident then spoke to me one evening to say in very terse words that I owed him \$30,000 compensation for him not being able to sell his home because of the radio tower in my back yard! I replied equally tersely, telling him where to go!!

For the record, the erection and approval of the tower installation was done by my local Council to drawings supplied by Nally Towers of Melbourne.

Anyhow, from this time on no direct verbal contact was kept with the resident but he did speak aloud one day, vowing to cut the cables to my tower to stop me operating the station, he also said that I was not a radio amateur but a "Communist radio spy" because I spent so much time on the air!

After putting up with these threats and abuse, I again called in Telecom in late November 1981 for a final TVI check, but before the RIs could come the tower cables were cut by person(s) assumed to be from the TVI complainant's home, there being no other neighbour with a hate complex for amateurs!

To conclude, two RIs came to conduct the second round of TVI tests, one RI stayed with me in my shack to ensure that I was operating my equipment to a stipulated procedure while the other RI operated the resident's TV set through the

channels, and the only TVI that could be detected was from my TS-520 rig when used on 28 MHz SSB, and as I only use CW on the 10 metre band, then this TVI presence was not pertinent to the complaint!

The RIs told the resident complaining of TVI that my station was not causing interference, therefore I could operate my station with a clean slate. Justice had been done at last."

SHARING

If you have any Interference problems, answers, information or Ideas — don't sit on it, please forward the details and help us to help you. ■

APOLOGY

Due to unforeseen circumstances the information relating to the Department of Communications was omitted from the RFI Directory of Assistance last month. I hope to include this next month.

VK5 OLD TIMERS' GATHERING

The annual Old Timers' lunch for South Australian radio amateurs was held on Thursday, 19th November, at the Marion Hotel, and was attended by 88 of the Old Timers.

This lunch has been held for the last four years with increasing attendance each year, and it is a very happy and enjoyable function where old friendships and old acquaintances are renewed.

This year the guest speaker was Mr. Graham Pitts VK5GE. He is an old time radio amateur who spent most of his life as radio operator in the Royal Flying Doctor Service and he spoke of his experiences, some amusing and some traumatic, in that service.

After lunch, ragchewing went on until late in the afternoon and the thanks of the Old Timers are due to George VK5RX and his committee for a very well organised and enjoyable day. ■



QSP

BRAAGIS

According to Rad. Comm. February 1982 a new voluntary service has begun in the UK to assist the visually handicapped amateur and electronics enthusiast by providing information on the various auditory aids which are available and which will help them in the pursuit of their hobby activities. This service is the "Blind Radio Amateurs' Auditory Gimmicks Information Service". "Auditory Gimmick" is a convenient way of describing any device which will convert a visual reading into an auditory signal which a blind person can use. The service is two-way — it would like to have details of any work already done in devising such aids as well as providing to the visually handicapped person whatever information is available; merely send a cassette outlining the particular needs. No charge is made so IRCs for return postage would help. Organiser is Peter Jones, BEM, G3DRE, 69 Prospect Road, Bradway, Sheffield, Yorks S174JB. ■

MAGAZINE REVIEW



Roy Hartkopf VK3AOH
34 Toolangi Road, Alphington 3078

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

73 MAGAZINE January 1982

Constant Current from a voltage regulator. (P). Mountain climbing expedition. (G). Station Charlie, Wartime underground radio. (G). Microwave test gear construction. (C).

QST September 1981

Universal synthesiser. (P). 432 MHz transmatch. (C). QRP Transmitter. (N).

QST December 1981

Equipment Servicing. (N). Bilateral Transverter. (P). Braille Transducer. (G).

BREAK IN November 1981

Year of the Disabled Issue. (G).

CQ October 1981

Two Chip Transmitter. (G, N).

CQ November 1981

RTTY Special Issue.

73 MAGAZINE February 1982

Simple Varicap VFO. (C, N). Mods to the TR2400. (P). The Father of FM. (G). TR2400. (P). The Father of FM. (G). ■



EDUCATION NOTES

Brenda Edmonds VK3KT
56 Baden Powell Drive, Frankston 3199

I have been asked several times recently for advice on studying for an Amateur licence. Most of the queries come from persons who have made two or more unsuccessful attempts at the exam, and are now becoming discouraged.

My first advice is to urge you to keep trying. You are not alone. Many now active amateurs had to make several attempts. There is a great feeling of achievement when you do finally get there.

The Novice and AOCIP exams are designed to test knowledge and understanding of radio theory over the whole of the syllabus. Some of this can be learnt by heart, but most of it requires an understanding of the basics. There are very few short cuts. Understanding is rarely acquired simply by reading a textbook or attending a series of classes.

Study techniques are a fairly personal thing. Try a range until you find what suits you best. Try reading and summarizing, underlining, reading out loud, re-writing from notes, putting onto cassettes for later playback. Read as many textbooks for each topic as you can, and summarise each so that you build up a comprehensive set of notes to complement the class notes.

Working with one or two others may be useful to maintain enthusiasm and offer mutual support. However, be sure it is a working group, not a social one. Do not take one person's opinions on trust — when there is doubt or disagreement always check from a reference book until everyone is agreed.

An important part of studying is practice in answering multi-choice questions. There are many sets of questions available now. Go through a set after each section studied, check the answers, then check back to see why 'a' or 'e' was the correct alternative. Practice answering sets of questions in a given time span — allow a little over one minute per question.

The time usually comes when it is necessary to ask for help. Here is where it is useful to have contact with other amateurs — the local club is probably the easiest way. Decide what questions you need to ask, and ask specific questions about particular topics.

Finally — exam technique. READ THE QUESTION! Answer the question that has been asked, not what you would like it to be. Mark an answer for EVERY question. Most questions have one or two alternatives that can be ruled out fairly easily, so think carefully about the others, but do put an answer in. Make sure that you transfer your selection to the appropriate spot on the answer sheet — only one alternative per question.

Take your time. Do not become flustered if others appear to be ahead of you, or if they start walking out when you are only half through. Perhaps they only answered half the questions.

I have not said anything about building or using radio equipment. Many people find this very useful, particularly when troubleshooting is involved. A vast amount of theory can be accumulated while trying to work out why the newly built gadget doesn't do its thing. However, it can be very time consuming and expensive.

Next month I hope to make some comments about textbooks and magazines that we have found useful for students. If you have any favourite texts or articles, I would be pleased to hear about them.

The next Novice Trial Exam should be available from the Executive Office shortly after you receive this. These papers are prepared as an aid to class instructors but are available to private students also on request. Members of classes are asked not to send for them without checking first to see if their class instructor intends to use them as a Trial Exam.

Best wishes to all.

73. Brenda VK3KT. ■

COUNCIL REPORT

At the January meeting, Mark Salmon VK2DI advised of his impending resignation as Slow Morse Supervisor for VK2BWI. Council noted the excellent work he and his volunteer operators perform in a valuable service to members and amateurs generally. Any member who is interested in taking over Mark's position can contact Divisional Office.

At the February meeting, Jeff VK2BYY reported on progress with the proposed Dural Fireworks Night to be held on 5th June. To facilitate catering arrangements, 350 tickets ONLY will be sold prior to the night—listen to broadcasts for details. Any member who can assist with parking and catering on the night can contact Jeff on broadcast callbacks.

Repeater Officer Tim VK2ZTM reported that several UHF repeater applications are being processed by DOC. Much of the delay is caused by the fact that these applications must be processed through Head Office in Melbourne.

Following is a report of the 1981 WICEN Co-ordinators' Conference.

WICEN

WICEN CO-ORDINATORS' MEETING as reported by David Mackay VK2ZMZ, Secretary, WICEN VK2: '81/'82.

VK2 WICEN is a fairly large organisation with approximately 150 financial members spread throughout the state in a large number of community areas. Since its re-activation in 1975 VK2 WICEN has been administered by a committee based in Sydney with co-ordinators appointed to train and organise groups of amateurs with a geographic affinity.

Where necessary a Regional Co-ordinator has been appointed to cover one of the states decentralisation regions with special regions defined in and about Sydney where the population density is greater.

To enable the exchange of information and ideas and to provide feedback for the committee, the Regional Co-ordinators meet each year with the Committee. Last year's meeting took place in Sydney over the weekend of 14-15th November. This is the first time that the meeting has been extended to two days.

The weekend started at 1000 hours at the Wireless Institute Centre at St. Leonards with a discussion session. As mentioned above this session required very little effort to start but took some stopping to allow Bruce Purdie, a Senior Paramedic with the N.S.W. Ambulance to start the next session.

Bruce discussed a subject that is very vital to us all, but which many of those at the meeting had not taken much time to familiarise themselves — that is: **PRE-SERVING LIFE.**

Apart from our duty to ourselves, our families and our fellows, to at least be familiar with elementary first aid, WICEN members will find themselves placed in situations where the likelihood of injury is greater. A set of notes on this subject is being distributed to WICEN Co-ordinators, however, any WICEN group which would like further information on how to improve their skills in this vital area should contact the committee.

The business meeting of the weekend was held at the 729 Club on Saturday afternoon. The first item was the official opening of the Sydney WICEN 2m repeater by Chuck Wise, Managing Director of Tandy Corporation of Australia, whose generous donation to WICEN made the provision of the repeater possible. Thanks also go to VICOM and HiQ Crystals for their assistance with the provision of equipment and services.

Howard Freeman VK2NL in the State WICEN Co-ordinators' report, referred to the greater recognition and acclaim that WICEN had received during the year from the Statutory Authorities as a result of WICEN's involvement in major exercises and in emergency operational roles.

This acceptance had resulted from the close liaison established and maintained with the prime emergency authority, the N.S.W. Police Department, and the sterling efforts of the WICEN members activated to assist the authorities. Although WICEN successfully provided communications on behalf of the authorities during the Telecom industrial disputes, the greatest benefit to WICEN was the practical experience and the lessons learnt from the many mistakes made.

During the year three new Regional Co-ordinators had been appointed. Andy VK2NWA for Sydney West and the Blue Mountains; Max VK2BMK for the North Coast, and Jim VK2AJO for the Orana region covering the western area of the state. Sid Ward VK2SW and David Thompson VK2BDT have resigned as Regional WICEN Co-ordinators.

With careful management of WICEN funds during the year it had been possible to repay an outstanding \$600 loan from the VK2WIA Council.

After discussing the value that the WICEN member gets for his subscription, it was decided to maintain WICEN dues at the same level as last year, i.e. \$5.00 for Full and Trainee members and \$3.00 for Associate members.

Howard announced his intention to retire as State Co-ordinator at the end of March, 1982, so that he could make arrangements for his retirement from the work force early in 1983. The position of State Co-ordinator was a full-time leisure activity which, he said, would not have allowed him to arrange his own future.

Neville VK2DR, who normally controls the weekly VK2 WICEN net on 3600 KHz each Thursday at 2130 local time, reported on the low participation in the net, but believed that the many interesting accounts of WICEN exercises and other activities

were heard by a fairly large audience of listeners. Neville would like to hear from anyone who has suggestions on ways to improve the net.

A number of other items of interest were also discussed until time ran out and the room had to be cleared for dinner.

After dinner, Alan Forsyth, representing the John Fairfax group of companies and the Organising Committee of the "Sun City to Surf", presented an Icom IC-720A and power supply to WICEN in recognition of the public service provided on a voluntary basis by WICEN. This fine piece of equipment will relieve the FT DX 400 which could not quite keep up with the pace during the Telecom activation and which was a worry because of its MAINS power supply dependence.

Senior Constable Bruce Gane, of the N.S.W. Police Rescue Squad, rounded off a long day with a well illustrated explanation of the work of the Police Rescue Squads and a case study of the Granville Train Disaster. A lively discussion followed on the role of WICEN in assisting the Police Rescue Squads during major disasters.

On Sunday, Ray Gill, Deputy Sydney Area Co-ordinator of the Volunteer Rescue Association of N.S.W. and Chairman of the VRA Radio Committee, led a discussion on the role of WICEN as the specialist communications squad of the VRA.

After a number of activations this year, a session on activation procedures served to consolidate the many lessons learnt, into a set of guide lines for the future. These guidelines are available from WICEN Co-ordinators and will no doubt be updated as our operational experience increases.

The weekend meeting was scheduled to finish at this point to enable country participants to travel home, but, due to its inertia it continued through the afternoon with two film case studies of fire disasters and videotape of the search for the missing aircraft in the Barrington Tops area in August, 1981.

The N.S.W. WICEN Committee would like to thank all those who contributed to the success of this year's Co-ordinators' meeting by participating. In particular we would like to acknowledge the guest speakers already mentioned, who gave up their time to attend and our other guests—Athol Tilly, WIA Divisional President; Ron Henderson, Federal WICEN Co-ordinator, and Colin Christiansen, representing the N.S.W. State Manager of the Department of Communications.

6 METRE BEACON

Jock VK2ZQX reports on the latest 6 metre beacon, VK2RGB, which is located on Porcupine Hill, immediately south of Gunnedah at approximately 440m above sea level. The beacon runs 6W into a ground plane antenna (which may have been updated to either crossed dipoles or similar omni-directional horizontal antenna by the time you read this) and idents every 30 seconds with 'VK2RGB Gunnedah' followed by a carrier. Congratulations to Jock and

all those involved in setting up the beacon. All reports on the beacon, which can be heard on 52.425 MHz, should be sent to Jock Watson VK2ZQX at PO Box 639, Gunnedah, 2380.

Details on five clubs affiliated with the NSW Division:

SOUTHERN HIGHLANDS ARS.

c/- Telephone Exchange, Bowral, 2576.

Net: Sundays at 8.30 p.m. on 3.615 MHz using VK2BFI.

Meetings: Mittagong Shire Chambers on 1st Fridays.

President: F. Ritchie VK2VGX; V.-Pres.: G. Goode VK2VIG; Sec.: K. Orchard VK2BXY; Others: B. Goodman VK2-ZAG, T. Lee VK2AOS.

Magazine: SHARS published bi-monthly.

Repeater: VK2RHR ch 7350 from Mt. Gibraltar, 50 km SW of Sydney and 850 m ASL. 10W with time out of 3 m and a mobile range of 100 km.

SUMMERLAND ARC

PO Box 524, Lismore, 2480.

Net: Fridays at 1800 EST on 146.8 MHz using VK2AGH.

Meetings: Kadina High School on alternate months.

President: Graeme VK2GJ; V.-Pres.: John VK2KCK; Sec.: Frank VK2KFB; Other: Betty VK2VTQ.

Newsletter: Published bi-monthly by editor Frank VK2KFB.

Repeaters: VK2RIT ch. 6800 at Parrots Nest, 400 m ASL. 25W with 3 m time-out and approximate range of 140 km. UHF repeater awaiting the approval of DOC.

Divisional Broadcasts relayed onto ch. 6800 on Sunday mornings.

TUMUT ADARC

c/- 93 Lockhart Street, Adelong, 2729.

Meetings and classes: Every Wednesday at Tumut High School, NAOCP and AOC.

President: R. Dodd VK2DLZ; V.-Pres.: Vince VK2ALZ; Sec.: Ted Dean L20586; Others: Ross VK2PN, Bill VK2DPZ, Jack VK2DUL, Butch VK2-BYS.

BLUE MOUNTAINS ARC

PO Box 54, Springwood, 2777.

Net: Tuesdays at 8 p.m. on 3540kHz using VK2AUX or VK2NCM.

Meetings: Springwood High School, Chapmain Parade, Faulconbridge on first Mondays (except Public Holidays, when second Mondays).

Classes: Informal AOC and NAOCP at clubrooms, Springwood High School. Contact Secretary (047) 39 3615.

President: Peter VK2DAV; V.-Pres.: John VK2VJD; Sec.: John VK2VPG; Others: Eoin VK2ZR1, Dennis VK2KAF, Noel VK2ZNS.

Magazine: "Ragchew", monthly; editor, John VK2VPG.

Repeaters: VK2RBM ch. 7050 at Blaxland (temporarily) 300 m ASL. 12W with 3m

timeout and approximate range of 10-60 km. UHF repeater application awaiting DOC approval.

Field Day: Mid-November at Springwood High School.

An activity night, which can be anything from practical work to a ragchew, is held at the clubroom on third Monday each month.

TAREE ARC

PO Box 712, Taree, 2430.

Nets: Mondays at 8 p.m. on 28.48 and 146.5 MHz.

Meetings: SES Headquarters, Victoria Street, Taree second Tuesdays.

Classes: Chatham High School, AOC and NAOCP, Wednesdays at 6.30 p.m.

President: G. Hunziker VK2BGF; V.-Pres.: C. Withers VK2BVI; N. Gough VK2KGD; Sec.: M. Richardson VK2-BVQ; Others: G. Tibbits VK2PVF, B. Cross VK2KBB, M. Stahl VK2AHD.

COMING EVENTS

16th April: Close of agenda for 6th Conference of Clubs.

5th June: Dural Fireworks Night — coinciding with 25th Anniversary of opening of Dural VK2WI.

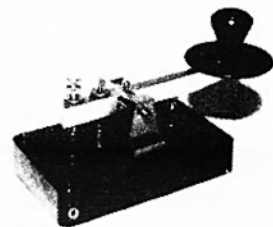
23rd May: 6th Conference of Clubs at Revesby Workers' Club. Host Club: Liverpool ADARC.

N.S.W. members and clubs are invited to submit news for inclusion in this column to PO Box 123, St. Leonards, 2065. News for June AR should reach us by 20th April.

Susan Brown VK2BSB ■

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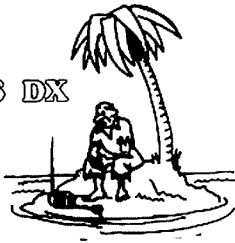


VK2 QSL Bureau, Gosford Field Day — February 21st.

Monday is an awful way to spend one-seventh of your life.

All you need to grow fine, vigorous grass is a crack in your sidewalk.

HOW'S DX



Ken J. McLachlan VK3AH
PO Box 39. Mooroolbark 3138

STOP PRESS: BY1PG active. ZL2BAO heard North American stations with W7PHO as control, working the Club station.

The sunspots may have become a little anaemic but irregular openings have appeared on all bands. Ten metre signals are perhaps not armchair copy but very workable with an abundance of countries and stations to choose from. Fifteen metres provided excellent and consistent openings to Europe and South America with mediocre results being obtained from elsewhere.

Twenty has been very unreliable even to long path openings toward North America (both paths) which were dependable over the last couple of months but the Europeans are starting to show and could provide some interest on long winter nights.

A long standing weekly sched with VE2 on twenty is now starting to show promise, so for VE contacts particularly watch 14.180-200 MHz (avoiding 14.195) on the short path around 1100 UTC.

Thirty metres is not to be overlooked, although no good for awards it does provide much scope for experimentation with antennae, also propagation will be very interesting in the coming months and should provide many pleasant QSO's and listening on both CW and SSB.

Whilst listening around on twenty recently, I was astounded to hear an experienced VK operator incessantly "yodelling" his call sign to work 1A0KM. Skip on twenty was fair to this station, whose "needle" had really got "stuck in the groove" and, combined with VOX clicks, the signal was taking up more than its share of estate, but my heart really went out to his amateur neighbours as their receivers would be taking the brunt of the incessant, also superfluous, use of the call sign which was given about 6 to 8 times per minute..

Will the same thing happen when 3Y0 and other much wanted countries hit the airways, hopefully later this year or early next year? One sure bet is that amateurs in close proximity will not use the "land line" to alert him it is on, before they have worked it themselves. Personally, I would

be waiting until the card was in my hand before passing the word with that sort of behaviour but there is probably a selfish streak in my nature.

Anyway to nicer subjects. Mario has indicated that he and his three helpers will move into the Novice section of fifteen metres when propagation is good towards VK. This will be a transceive operation for working NOVICES only. Wait!!! One will spoil it for all.

"Someone take a list or I will miss out", "What's the call?", "What country is it?" and "Who is the QSL guy if I get him in the log" on the operating frequency was chatter that could have been conducted elsewhere. No wonder Mario IOMGM, the stations QSL Manager, who was operating at the time "packed his bags", leaving them all wondering.

NOVEL SWL REPORT

Towards the middle of February a package arrived from HB9 land which contained an hour recording of contacts that had been made from this QTH at 0130 local time on the first of that month. Of course, the band was ten metres and the QRM, which wasn't worrying me, was unbelievable as heard from Fri, HE9OZH's QTH where my signal was apparently holding the meter beyond the nine on his receiver. His antenna is an indoor dipole in the roof.

Fri, has achieved the EUROPA 300 and 5BDXCC Awards and had the kindness to enclose a small gift for my XYL Bett who is my QSL Manager. Fri will definitely receive a card and letter for thoughtfulness and an unusually accurate report.

QSL BUREAUX

Those that QSL to SWLers can assist the folks that voluntarily sort your cards by placing the country of origin underneath the allotted prefix and number. Due to seldom seeing some of the rarer allocations as used by some administrations it slows the sorting process down, sometimes even that they are put aside until the card's intended destination can be determined.

DX FRIEND

Mike, VE2MCS, who is fifteen years old, is interested in regular scheds with other DX orientated amateurs in VK around his age group. If interested, Mike's address is RR No. 2, Caledon, Ontario, Canada. LONICO.

ESPERANTO NETS

If you are interested in conversing in Esperanto, which is an artificial language based on words common to the chief European languages (refer "Spotlight on SWLing" this issue) then join one of the many nets which cater for VK, Oceania or World-wide participation.

For further details contact Errol VK3GG QTHR, who is the VK representative.

CHECK POINT

For those interested in CQ Magazine's awards and to save the expense of shipping cards overseas, the VK checkpoint is Doug VK3NDY. So for some of these

prestigious awards, mail to QTHR for more information.

SSTV

According to ARRL Broadcast No. 16 from W1AW the FCC has relaxed its rules concerning SSTV transmissions allowing experimentation and operation on all portions of the bands where voice communication is permitted except 160 metres as from the 22nd February, '82. Does this mean that we can see our stateside friends on frequencies below 14.200 and cannot work them on transceive? I don't think so as it probably refers to FCC frequency allocations.

Quite a number of VK's are interested in SSTV and if anyone reading these notes would care to share the month to month happenings of this mode as they hear it, they would be most welcome. A note to QTHR will receive a reply.

NON-APPEARANCE!

PY0 St. Peter and St. Paul's
PY0 Trindade.

APPEARANCE????

VK9 Mellish Reef
VU7 Andamans.
VU7 Laccadives.

STAMPS AGAIN

A number of readers have volunteered their pet waves of getting letters to certain countries unopened. Some of the novel ways include "Tearing the perforations off one side of the stamp rendering it useless", "Punching 2 or 3 5 mm holes in the stamp before it is placed on the letter" and "Some Post Offices have a cash resistor which produces a paper tape, this is affixed to the letter in the same way as a stamp". The latter suggestion would be worth an enquiry with the local Postmaster with a view to ascertaining the nearest one to your locale.

XZ5A AND XZ9A

Sanplo and Laydoh's interest in DXing has waned over the last few weeks according to all that are still awaiting a contact and the QSL Manager JA8BMK has not endeared himself to many VK operators who have direct QSLed with the "necessary" for a prompt return and are still waiting. Please don't blame the operators, they, it is felt, are quite unaware of the happenings, however it is believed that the VK1 Bureau have had a lot of cards with self-addressed envelopes bulk mailed to them. This unsolicited "gift" will be distributed by the time you read this to other Bureaus at their expense and you don't have to be Sherlock Holmes to figure out where the IRC's or "green stamps" have gone. Where all the Co-axial cable, connectors, ARRL Handbooks and other operating aids which were donated in good faith by Stateside amateurs went we will leave for Dr. Watson to solve.

The invaluable W6GO/K6HHD QSL DIRECTORY notes that all XZ9A contacts beginning 15/01/82 to JA8IXM, so good luck if you have worked Laydoh since that date.

HOLIDAYS?

A TROPICAL POLYNESIAN ISLAND WITH WHITE SANDY BEACHES AND A QUIET LAGOON WHICH IS PROTECTED FROM THE PACIFIC OCEAN BY A CORAL REEF. Sounds like a travel brochure but this will be "home" to Jocelyn, ZL2BAO from the 24th of April until the 2nd of May. Jos is taking herself to Raratonga for a DXing holiday and will be looking at joining the YL nets, the ANZA net (which she capably controls on Thursdays) and other nets as time permits. This is one expedition where the Novices will not be forgotten and the three element beam which is going on the plane as "hand luggage" will be pointed towards VK. Slow CW and SSB modes will be used on 10, 15 and 20 metres as conditions permit.

Trying to find a little about Jocelyn proved a difficult task as she is very reluctant to discuss herself but I've found out that there was a fascination since primary school when Jos lived next to an amateur and she was intrigued by the way he disappeared into the garden shed, which was draped with "lots of wires and had wire poles on the roof". Jos was very curious but was sternly bidden "that's no place for little girls" by her father.

Three years ago, through a chance encounter with CB and MAYDAYS whilst on the OM's boat, Jos met some amateurs, who persuaded her to study for a licence. A VHF licence was obtained and this was quickly updated four months later. Twelve months later Jos again faced the Radio Inspector to demonstrate her prowess with the key. Jos describes leaving the RI's as "Now the WORLD is mine". However, for a time Jos was very "mike shy" but Heather, VK2HD soon took her in tow and after being introduced around the nets things became much easier. It was only a few short weeks and Jos's daughter discovered that 75 different countries had been QSOed, so now a challenge was to reach 100 in the first three months, then 150 was the next target. On reaching it Jos was offered a tower, beam and rotator at a bargain price. "What a difference" are her remarks and she has been in every "pile up" since.

Amateurs include 5 Band DXCC, which is coming along slowly, particularly on the lower bands with "home brew" G5RVs and slopers and 100 watts fed into them, however the quote is "I am having a lot of fun and meeting great people."

Jos is always willing to "help out" and finds time to be Secretary of the local NZART Branch, whilst ably looking after the OM and three children. She is very proud to say that amateur radio need not be an expensive hobby as she worked her first 150 countries for less than \$400 on an old Yaesu FT200.

Joselyn ZL2BAO, ZK1??, an enjoyable flight with the Icom 730 and other "hand luggage" and many QSO's to many who will want a new YL country. QSL's are guaranteed and no "RIP OFF'S".

I believe the amateur fraternity needs many more ZL2BAO's!



Jos ZL2BAO

NEW PREFIX

EZ — QSL to Box 88, Moscow via the Bureau. The holders of these call signs are Russian Novices.

Sincere thanks to all who have assisted by contributing, including VKs 3DU, KF, UX, YL, DFD, 4KA, AIX, 5WV, 6HD, IH, NE, 9ZH, and SWL30042.

One closing thought: Have you joined a new member lately? I have and am looking for more.

Good DXing. 73.

SSB WORKED ON THE WEST COAST

10/8Q7BN, 10/A9XZ, 10/C31XS, 10/CR9BH, 10/JT1KA1, 10/PJ7ARI, 10/VK2PJJ/LH, 15/CR9BH, 15/LUSZ1, 20/9G1AP, 20/FP8HL, 20/FYDFOL, 20/JT60UB, 20/LU5Z1, 20/OX3ZM (YL), 20/T32AE, 20/VK9YA, 20/VP2EO, 20/VP2KA, 20/VP8ANT, 20/XZ9A, 20/ZB2J, 40/VP2VD.

SSB WORKED ON THE EAST COAST

(Shown in Band, Mode and Call Sign)
10/CW/YJ8VU, 14/CW/BV2A, 21/CW/3D2CH, 21/CW/9J8HSU, 21/CW/M1C, 21/CW/VS6EY, 21/SSB/9M6MD, 21/SSB/AH0A, 21/SSB/DK6UVH/T15, 21/SSB/GB2ASE, 21/SSB/KA4P/KH4, 21/SSB/PY5BI, 21/SSB/PZ5AA, 28/SSB/A9XF, 28/SSB/CG5AE, 28/SSB/CG5MC, 28/SSB/FO0JTP, 28/SSB/JD1BAT, 28/SSB/NS4B/AH8, 28/SSB/VE3NFR/4U, 28/SSB/VS6CT, 28/SSB/VS6DX, 28/SSB/VS6EM, 28/SSB/VS6GZ, 28/SSB/WB0MKA/KH3.

CW WORKED ON THE WEST COAST

1.8: DJ8FW, EL2FY, EZ2AAD, EZ6ACC, F8VJ, G's, GD4BEG, GM3ZSP, OH0NA, OH5NQ, RB5GEM, RF6FFW, UA3DQH, UA3ZCG, UK2PCR, UK6AAP, UK6DIT, UP2BIO, UT5AB, VS6DO.
3.5: 5Z4CS, EL2FY, GI3IVJ, GW3YDX & GM3YTH, UF6PAL, UM8PAC.

QSL ADDRESSES

- 5B4JK: Box 1671, Nicosia, Cyprus
- 5N0ATW: Box 3197, Lagos, Nigeria.
- 7P8BY: Box 423, Maseru, Lesotho.
- CT2CB: Box 44, Santa Maria Is., Azores.
- E8A8AY: Box 860, Las Palmas, Canary Islands.
- HT1JCC: Box 1122, Managua, Nicaragua.
- N2BVJ/LX: 1501 W. First St., Abilene, KS 67410, USA.
- PA0WAY/A8: Box 5708, Dubai, United Arab Emirates.
- PY5BI: Box 79, Londrina City, Brazil.

LISTENING CW WITH ERIC L30042

80m: DF5CD, DF5KR, F6KAW, F6KLY, GI3IVJ, HA5KKG, HA6QQ, HA7RD, HA0KLE, HG9HB, LZ2TT, UB5NCV, YU1AFI and YU3TSD.

40m: A4XJP, F6APE, FK8DK, KG6RT, LZ2VP, UB5UKF, UP2NK, VK9NL, N6YK/V2A, K9MK/V2A, Y8ADE, YU3TOC/Y and 4Z4AB.

30m: C6ABA, DJ2HH, DJ2VK, DL6NI, DJ6RX, F6HGH, F9NG, G3FRO, G3SED, GI3IVJ, HB9ZY, OK1AGN, OZ1W, P29DH, VK8HA, VK9NL and YJ8VU.

20m: CX5AO, FK0AF, FM7WA, FO0PT, GD8KMZ, HL9KT, IS0HQJ, KV4CI, LU1GK, PA0VDV/PJ7, T30AT, UJ8XCI, VK0AN, VP9DR, K9DX/V2A, WP4BBM, YV1AD, YJ8VU, YBAES, ZK2BGD and 4U1UN.

15m: FK8DZ, KH6KV, KP4EDL, LU9HBJ, OH1BG, PY1ZAE, XE1EFT and YJ8VU.

10m: RA9UMD, UK0CBE, UV0JM, VS6IC and ZC4YC.

OSLers OF THE MONTH

ALL 30m: G3BDQ, P29DH, ZL1MQ, ZL3NE and 4U1TU. ■

Faces Behind the Key and Microphone



Doug NC3ACU

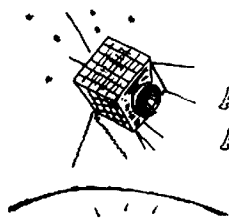


Vince 10SXV



Hannu OH1XX

Join a NEW MEMBER NOW!



**AMSAT
AUSTRALIA**

CORRESPONDENT:

R. C. ARNOLD VK3ZBB
41 Grammar Street, Strathmore 3041.

CO-ORDINATOR:

C. J. ROBINSON VK3ACR.

CORRESPONDENTS:

VK2RX, VK3KF, VK3KW, VK3YQX,
VK4PJ, VK4ZJX, VK5HI, VK5AGR,
VK7PF.

INFO

Satellite information is contained in the regular RTTY broadcasts from WIAW.

Participants in the AMSAT-Australia net now cover all call areas except VK8 and VK9.

EXPERIMENTAL MODULES

Spacecraft Microcomputers (Tony Jeans G8ONO, Chris Haynes, UOS/AMSAT-UK)

High Level Software (Dr. Karl Meinzer, AMSAT-DL, Robin Gape, Chris Trayner, AMSAT-UK)

There are two powerful on-board micro-computers which have access to the s/c experiments, telemetry and command systems, enabling:—

Telemetry surveillance and command and status management.

Experiment data storage and processing.

Dissemination of orbital data, operating schedules and spacecraft news.

Closed-loop attitude control employing the magnetorquers.

The primary s/c computer is based around the RCA 1802 microprocessor and supports 8 parallel ports, 2 serial ports and 16k bytes of d.r.a.m. memory with access to a further 32k bytes of d.r.a.m. memory in the Video Display Experiment. The parallel ports interface directly to the Telemetry and Command systems and to the Radiation, Magnetometer and Speech Synthesiser experiments allowing high speed sampling of data. The two serial ports provide redundant data paths and can also generate a wide range of data formats and rates available to the Data Beacons. It is anticipated that this computer will support the multi-tasking software system — IPS — developed by Karl Meinzer and will provide a useful opportunity to evaluate IPS before the launch of the AMSAT Phase III communications satellites.

The secondary s/c computers based around the Ferranti F100L microprocessor and is configured as a minimum system with serial interfaces to the s/c telemetry and command systems. This does however allow the computer less direct but complete access to the s/c systems. The computer has 2 serial input/output ports and is supported with 32k bytes of cmos static r.a.m. The F100L computer is a 16 bit machine.

The software and accompanying data for both computers are loaded from the ground via the Telecommand link and can be modified or replaced during flight by a Ground Command Station in order to accommodate changes in the mission profile and to allow for the rectification of possible in-flight software or hardware failures.

Attitude Stabilisation and Control:

Two magnetorquer coils mounted on the +y, -y axes of the s/c will provide control over the attitude of the s/c by interaction with the earth's magnetic field, whilst after the initial manoeuvres using the magnetorquers, a 50 foot boom with a 2.5 kg tip mass will be deployed to provide passive stabilisation resulting from gravity gradient forces. The magnetorquer will then be used intermittently to dampen nutation and libration. The magnetorquer produced a field of approximately 50 amp turns per m² (50,000 pole.cms), allowing a maximum acceleration of the s/c of 1

Nets are conducted as follows:—

AMSAT-AUSTRALIA: Chas VK3ACR,
Sundays and other unscheduled evenings 1000Z, 3680kHz Winter, 7064 kHz Summer.

AMSAT PACIFIC: Hari JA1ANG
Sunday 1100Z, 14305 kHz.

AMSAT SW PACIFIC: Bud W6CG
Saturday 2200Z, 28880 kHz.

ORBITAL INFORMATION AS AT 20th FEBRUARY 1982

Satellite	Reference Orbit			Orbit Period Mins.	Angular Increment °W
	Orb. No.	Eqx. Z	Eqx. °W		
AO8	20194	0025.01	74.68	103.179	25.797
UO9	2064	0023.58	140.06	95.211	23.809
RS3	785	0115.85	204.27	118.519	29.756
RS4	779	0042.60	276.28	119.395	29.976
RS5	778	0047.56	277.43	119.955	30.016
RS6	784	0148.98	293.45	118.718	29.806
RS7	780	0007.27	267.60	119.196	29.926
RS8	777	0131.43	288.34	119.765	30.068

Time shown as Hours, Minutes, Decimal of Minute..

SATELLITE STATUS

AMSAT OSCAR 8

Working satisfactorily. Some "mode jumping" has been noticed due to experimentation by Command Stations.

UOSAT OSCAR 9

Still in the evaluation phase. The beacon on 435.025 has been activated from time to time.

RS SERIES 3-8

Working satisfactorily. Some unusual frequency changes occur from time to time which leads us to believe there are more experiments aboard these satellites than have been demonstrated to date. (Watch out for May Day or similar festival for some new occurrence!)

Although no one has written to correct the information given in AR for February, I believe the following to be up to date:—

Satellite	Beacon	Transponder		Robot	
		Up	Down	Up	Down
RS3	29.320		None		None
RS4	29.360		None		None
RS5	29.41	145.91-145.95	29.41-29.45	145.826	29.331
	29.45				
RS6	29.41	145.91-145.95	29.41-29.45		None
	29.45				
RS7	29.34	145.96-146.00	29.46-29.50	145.835	29.341
	29.50				
RS8	29.46	145.96-146.00	29.46-29.50		None
	29.50				

degree/sec/100 sec. The gravity gradient stabilisation should maintain the —z facet (bottom) of the s/c pointing towards the centre of the earth — important for the Camera Expt! The s/c will spin around the z-axis at a very slow rate — around 0.01 r.p.m.

HF Beacons Experiment (Colin Smithers G4CWH, UOS/AMSAT-UK)

Phase-related beacons on 7.050 MHz, 14.002 MHz, 21.002 MHz and 29.510 MHz will support a wide range of ionospheric experiments and observations. The four beacons are each derived from their own crystal oscillator and can be operated independently, however a synthesiser network enables the 14, 21 and 29 MHz oscillators to be phase-related to the 7 MHz oscillator, thus maintaining a constant phase relationship between all the beacons for trans-ionospheric path analysis. The synthesisers can be turned off allowing the beacons to free-run. The beacons can be modulated (on/off a.m. keying) with Morse code telemetry interspersed with a carrier or a continuous carrier upon ground command. The output power of the beacons is 100 mW each with a total experiment power consumption of 1.4 watts DC. The 50 foot stabilisation boom will be exited by the HF dipole antennas and should result in a strong radiated signal even at the lower frequencies.

Radiation Detectors Experiment (D. R. Lepine, Appleton Laboratories, UK, Ian Ferebee G6BTU, UOS/AMSAT-UK)

The radiation monitors experiment employs two LND type Geiger-Mueller tubes to measure integrated fluxes of electrons above threshold energies of approximately 20 and 40 keV. The tubes have thin mica end-windows of thickness 9.35 ± 0.05 mg/cm² respectively, and are filled with neon together with a small quantity of halogen to provide quenching. In addition to detecting electrons the tubes also detect protons of approximately twenty times higher energy.

Each tube is contained in a separate housing which also contains a thick-film pulse-amplifier/pulse-shaper to provide 10V 50US pulses to the on-board data handling system. A single high voltage converter, generating 560V and stabilised to $\pm 20V$ (-40 to $+60^\circ\text{C}$), provides the anode supply for the tubes. A collimator consisting of two circular apertures separated by an 8 mm spacer, is located in front of the tube to define the geometry factor.

Data from the experiment will be telemetered to ground using two separate formats. High time resolution data, where each detector is sampled for ten 0.05s periods every 1s, will be stored by the on-board primary microcomputer and then transmitted to the ground "on command" using one of the general or engineering data beacons. It is proposed to schedule the experiment so that the data accumulation phase corresponds to the satellite passing over the more interesting precipitation regions, i.e. the auroral oval and

polar caps. The exact quantity of data that can be stored during a pass has still to be determined. In addition to high time resolution data for the computer, the experiment also averages the count in every 5s period and makes the result available to the telemetry system where it is transmitted in real time. It is hoped that this feature will be made available on a continuous basis.

Instruments of this type have been used by the RAL Magnetospheric-Plasmas Group on several sounding rocket flights to measure the intensities of electrons producing auroral displays.

Magnetometer Experiment (Dr. Mario Acunia, AMSAT-USA)

A three-axis, multi-range, fluxgate magnetometer will allow the detection and monitoring of geomagnetic storms and their possible effects on radio propagation as well as the study and mapping of the main geomagnetic field, thus providing amateurs with advanced diagnostic and study capabilities. Special emphasis will be placed on the acquisition of real-time and stored data over the polar regions. The basic dynamic range of the magnetometer instrument is ± 8000 nT and the output is digitised by a 12-bit A/D converter. Since the strength of the geomagnetic field is approximately 30,000 nT at the equator and 60,000 nT at the poles, the basic range of the magnetometer is increased to 64,000 nT by biasing the zero level in 16 steps.

Dynamic range: $\pm 8,000$ nT.

Resolution: ± 2 nT.

Zero level stability:

Sensors (-60°C to $+60^\circ\text{C}$): ± 5 nT.

Electronics (-20°C to $+50^\circ\text{C}$): ± 2 nT.

Linearity errors: $< 2 \times 10^{-5}$.

Bias Field Generator:

Dynamic range: $\pm 64,000$ nT.

Quantisation step: 8,000 nT.

Temperature coefficient: 2 ppm/ $^\circ\text{C}$.

Power consumption: 500 mW.

Two outputs are presented for each axis — "coarse" and "fine" — and the full resolution data are available to the primary s/c computer, whilst quick-look data are reduced to 10-bit resolution and presented to the analogue telemetry system with a resulting maximum resolution of ± 8 nT.

CCD Camera Imaging Experiment (Dr. Paul Traynar, UOS/AMSAT-UK)

A two dimensional, charge-coupled device imaging array (GEC MA357) is mounted in the bottom ($-z$) of the s/c central column which, using the gravity gradient stabilisa-

tion mechanism, should point towards the centre of the earth and provide images of land, sea and cloud over a 500 x 500 km area of the earth's surface. The image is formed by integrating the amount of light falling on the 65,536 (organised as 256 x 256) light sensitive "buckets" of the array over a set period of time and then transferring the resulting accumulated charge into a similar, masked storage area alongside. The integration time of the ccd is under ground control via the command system and can be set to any of 16 preset periods between 4ms and 16ms. The spectral response of the CCD is in the visible/red range and should give good haze penetration. The charge "image" in the ccd storage area is then digitised into 4-bit words (each word representing a pixel), and transferred once more to a long-term memory in the Video Display Experiment module. The data now resident in the VDE memory can be transmitted to ground stations at 1200 bps (phase-synchronous a.f.s.k.) through the General or Engineering Data Beacons. The image data is transmitted in a line synchronous manner, i.e. 256 x 4 bits are sent (representing one line of image) in one continuous stream preceded by a "line sync" bit pattern comprising a 32-bit code sequence. The 32-bit code itself comprises an 8-bit word and its one's complement repeated twice. The complete image dump will take approximately 3.5 minutes from the s/c and comprises:

A frame header comprising one line of 16 line sync. codes.

256 lines of 1024 bits (organised as 256 x 4 bits) each preceded by a line sync. code.

The "line sync." code format is:—

"0101101110100100 0101101110100100".

The primary s/c computer has direct access to the VDE memory and it may be possible to carry out on-board processing and annotation.

Lens characteristics:

Focal length: 6.5 mm.

Speed: 1 : 1.8.

Aperture: 1.5 mm f/4.

Neutral density filter: 1/32.

Field of view: 60 degrees.

CCD intensity dynamic range: 35 dB.

CCD vertical transfer clock rate: 6.6 MHz 3-phase.

CCD frametransfer clock rate: 2 MHz.

Power consumption:

Imaging: 1.5 watts (for 1 second).

Store/readout: 2.8 watts continuous.

Tube	LND705	LND710
Approx. energy threshold (KeV)	20	60
Window thickness (mg/cm ²)	0.35 ± 0.05	7.75 ± 0.25
Geometric factor (mm ² ster.)	0.08	0.35
Collimator dia.	8.0 mm	8.0 mm
Angle to s/c z-axis	13°	18°
Filling gas	neon + halogen	neon + halogen
Operating temperature	-50 to $+150^\circ\text{C}$	-50 to $+150^\circ\text{C}$
Sampling rates:		
Stored data	10 per sec	10 per sec
Real time data	8 sec	8 sec



ALARA

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

Margaret Loft VK3DML
28 Lawrence Street, Castlemaine 3450

ALARA CONTEST

The results of our 1st contest were very pleasing to the committee and we extend our thanks to all who participated, especially the OM's, but next year we would love to get more logs from you. 51 logs were received this time, 30 from ALARA members; 10 YL non-members; 10 OM's.

RESULTS

TOP SCORE (ALARA members) in VK call areas: VK2DYL—Geraldine; (club stn) VK2SU—Freda (certificate awarded as we felt a club call was ineligible for cert.). VK3KS—Mavis; also top VK score. VK4-VCE—Margaret; VK5QO—Marlene; VK6-KYL—Diane; also top VK Novice score; VK7HD—Helene.

Top score ALARA member DX countries: ZL2QY—Pearl; P29NSF—Siegi; WA3HUP—Mary Anne; VE7CBK—Bobby; G4EZI—Diana; DJ0EK—Paula; PA3ADR—Agnes.

YL Non-members top score in each Continent: VK3DJN—Jean; ZL1BIZ—Elva; WA2NFY—Lia; DJ2YL—Susy.

OM's top score in each Continent: VK3XB—Ivor; ZL3RK—Mac; N6ARR—Dave; SWL VK4 L40018—Charles.

Thank you once again to all who made the contest so successful and look forward to hearing from you all again after contest number two on November 13th.

CONSTITUTION

The Constitution was discussed on the meeting held on Monday night, 22nd Feb. with 14 members present on the net. All states VK2 to VK7 represented.

All points of the Constitution were agreed on by those present and legal advice is being sought before it is adopted. Congratulations were extended to Geraldine for her control of the meetings on air, it isn't easy, I know, but well done. Good luck, too, in the AOCF class, Geraldine, and to anyone else who is studying for exams.

NEW CALLS

New Callsigns: VK4BSQ ex VK4NBA—Wendy; VK4KAU ex VK4VCE—Margaret; and VK7ZYL—Joan; nice to have you on the net, Joan, and thanks to OM Peter for making it possible.

MEETING PEOPLE

On Sunday I attended the Midland Zone convention and met Judy VK3VBP, from Myrtleford; also met others I had spoken to on air. It was a most enjoyable day and the weather was glorious.

Remember, the next meeting of ALARA will be on Monday, March 22nd (4th Monday); my apologies for the wrong date in last month's column. 3570-+qrm at 1030 Z.

Valda, our treasurer, has been kept busy with subscriptions coming in and also in waiting to hear from girls wanting to join ALARA. Address is VK3VKT Ms V. Trenberth, c/- P.O. Church St., Brighton, so please write to Valda and a copy of ALARA's information sheet will be forwarded to you.

Until next month, good luck to all and take care.

Margaret Loft VK3DML



L. to r.: Joyce VK2DIX, Geraldine VK2NQL, Margaret VK2AND, taken at Gosford Field Day.



A MOTHER'S PRAYER IN THE MORNING

Thank you, Lord, for this glorious day.

Bless the carpet beneath my feet and the bombardment of hot and cold water that freshens my waking skin.

Bless the breakfast I am cooking for my family, and the special music of morning around me . . . doors banging, the clatter of forks and plates, the rattle of lunch boxes, children demanding "mother!"

Thank you for my healthy, available presence that is able to cope with them.

Bless the husband who provides all this. Be with him as he sets off for work; fill him with a sense of his own worth and achievement, enrich and enliven his day.

Bless the school buses and their drivers, let them transport our children safely.

Bless the teachers and that marvellous institution that claims my offspring for the important hours. Please let them be good there, happy there, bright and able to grasp the lessons there, and oh, thank you that they're well enough to be there.

Now bless this quiet house . . . even its confusions and disorder which speaks so vividly of its quality of life. Thank you that I have the time and strength to straighten it.

And thank you for the freedom to sit down with a cup of coffee before I begin.

from "I've Got To Talk To Somebody".

(VK1 DIVISION)

VK1 ANNUAL GENERAL MEETING

The Annual General Meeting of the VK1 Division was held on Monday, 22nd February.

The election of office-bearers for 1982 resulted as follows:

- President: Bill Maxwell VK1MX
- Senior Vice-President: Fred Robertson-Mudie VK1MM
- Vice-President: Ian Coleman VK1KIC
- Secretary: Richard Jenkins VK1UE
- Treasurer: Kevin Olds VK1OK
- Committee: Gavin Berger VK1NEB, Alan Hawes VK1KAL, Barry Bennetts VK1BB
- Federal Councillor: Ron Henderson VK1RH

VK1 WICEN ARRANGEMENTS

As the present list of volunteers to participate in WICEN activities has been found to be unworkable, it has been decided to discontinue use of this list and to set up a new list of operators KNOWN to be available for WICEN activities.

It is also intended to conduct a minimum of three WICEN activities annually:

- A training exercise such as the coverage of the National Junior Tennis Championships.
- A public relations type exercise intended to expose the WICEN group to public view; e.g.: an activity connected with the Canberra Week activities.
- An unannounced "Emergency Call-out" of volunteers on the list to check their availability, equipment, etc.

The VK1 WICEN co-ordinators are Rob VK1ZAI, Dick VK1ZAH and Ian VK1ZAG.

10/10 INTERNATIONAL IN VK1

It might come as a surprise to many VK1 members to know that there is a local chapter of the 10/10 International Radio Net in VK1.

This group, known as the Australian Capital Chapter, meets on air on 28.585 MHz each Saturday morning at 2300 Z.

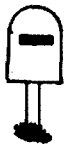
Although there are many other 10/10 Chapters world-wide the Australian Capital Chapter is one of the few that uses the Novice segment of the 28 MHz band.

The local Certificate Manager is:

John VK1KJC (QTHR) or PO Box 36, Cook 2614, A.C.T.

73 DE VK1KV

If you have let your WIA membership lapse in the past year or two, why not seek reinstatement now — just look at what you are missing.



LETTERS TO THE EDITOR



8/9 Glenroy Road, Hawthorn 3122
11/2/82

The Editor,
Dear Sir,

I have just purchased a copy of the 1981/82 Call Book and wish to congratulate the Editor and all concerned for the excellent production. It contains much information I have not seen published previously. I intend sending a copy to a Swedish amateur friend whom I am sure will find it most interesting.

Once again, congratulations!
73. Jack Dunne VK3AXQ. ■

36 Nixon Crescent, Wagga Wagga, 2650
15th February, 1982

The Editor,
Dear Sir,

Many things are written about Morse Code. May I quote my mentor — VK2YA — "I can show you, but I can't learn it for you", you will agree with that, I'm sure. Maybe you have tried, and tried, and then given up, as I did — so now we're even, O.K.! You may have age on your side (an advantage), I'm 40-odd years young.

Let me tell you how I beat it, it may help you — try the same tricks, perhaps. I learnt the letters and numbers in about 10 days, at work, on bits of paper, translating anything and everything into Morse. Then I progressed to 5 W.P.M. tapes. Night after night for four months, then an exam, sending was a breeze, receiving a disaster — I managed two words — THE and SEPTEMBER. Was informed that I had failed — does that sound familiar?

Now the good news. I left Morse alone, unheard for eight months, not a sound — but, you know, it's a bit like swimming — once learnt never forgotten. Last August, I began boning-up on Morse again but with one MAJOR difference — I used head-phones for receiving, and I used tapes with a Verbal repeat. The advantage was that when I got stuck I could find a word and marry the sound to it. If you don't use phones you put yourself at a disadvantage; it is something else you have to contend with at exam time.

I don't claim to be a Morse expert, far from it, but this was my recipe. And I owe thanks to Rex and W.A.R.C.

VK2PGE ■

388 Huntriss Rd., Woodlands
16th February, 1982

The Editor,
Dear Sir,

Re the UN-DU Award as per the Award Manager's article in Feb. A.R., I would like to describe my "adventures in certificate hunting" for this award:

At last I have my QSL Cards returned after making application for the UN-DO award to P.A.R.A. But to start at the beginning: In August, '80, the first application and packet of cards were despatched by airmail to Manila, followed by a second packet in Nov., '80. During April, '81, my certificate No. 11 arrived. But it took till Jan., '82 for my QSL cards to arrive back here in Perth, in a tattered packet, patched up by Aust. Post.

The certificate is large, 500 mm by 400 mm (19.7 x 15.8 ins.) and required folding four times to fit into the A4 size envelope. Due to the parchment type material used, it is almost impossible to remove the creases caused by folding. A mailing tube, large diameter, is needed instead of an envelope. My DXCC is almost 300, but I, too, have about 30 flags missing, and only one gold star is stuck on instead of five (5).

The Awards Manager suggests buying a world map containing the correct size flags to stick on in place of those which are missing. One could do the same thing with the missing gold stars, too. If it comes to that, why not send \$12 US, and just ask for a signed certificate without flags and stars and stick the flags on yourself as you work the country?

Neil VK6NE ■

Similar problems with several other YL's and self with this award. I concur.

Gillian (Jill) Weaver VK6YL

5 Lockhart Court, Kilsyth, Vic. 3137
17/1/82

The Editor,
Dear Sir,

I read with interest Bill Verrall's (VK5WV) columns in December 1981 and January 1982 re awards and QSLs, etc.

In 1969 I started out on the 5B DXCC and concentrated mainly on 7 MHz. Having 100 countries CFD on 7, one day I'll do the necessary to get the piece of paper. I don't think I'll bother with the other four bands for the 5B DXCC now!

At one time back in the early days of radio, when blokes could only afford 5, 10 or 20 watts input to a home-brew rig, a HB Rx and a doublet fed with a bit of twisted lamp cord, getting 100 new countries confirmed was sure an achievement. These days the achievement seems to be to pile on the watts and the antenna gain (nothing wrong with the latter) to get through the dog piles. They have all these nets and lists; to me it seems to be so much rat race. I prefer to fire forth a CQ DX and work whoever comes back first for the sheer pleasure of it, and if a new country or something a bit different comes back all the better. Sometimes one can listen to a dog pile for half an hour and still not know who the target station is. Some of these DXpeditioners must be loo ashamed of their call signs to identify!

IRCs for a direct QSL and to offset the cost of direct QSLing is understandable, but what are these green stamps? Surely not \$20 bills! If so, I'm shocked! Maybe I shouldn't even suggest such a thing! Professional QRMers, policemen and carrier droppers don't even deserve a comment. Neither do half the S9 reports!

For those sincerely chasing an award, QSLs are a good thing if the info on them is correct. Sometimes info on QSLs is not correct, so what's their use? Maybe certified log entries is really the best thing after all.

Some awards will probably always require QSLs. For those wanting cards for these awards, or for any other reason, they should be able to say "Pse QSL" in the QSO and rely on getting one. You hear all sorts of indistinct statements: "QSL OK", "Will QSL", "QSL", "QSL via the Bureau", all of which could mean anything! In many cases the operator who makes these statements couldn't care less if he received your card or not and only QSLs out of courtesy upon receipt of a card. Surely this results in lots of cards going through the bureaux unnecessarily. If someone says "Pse QSL" you can bet your life he really wants it. Haven't you ever cursed yourself for forgetting to say "Pse QSL via Bureau" when working a new country? "Pse QSL" is a precise request, so write one out for him on the spot! Forget the rest, except those you request a card from, of course.

This may seem harsh, but would result in a lot less work for QSL managers and for the amateur in his own shack.

73. Dave Jenkin VK3ABR. ■

52 Cokeham Road, Sompting, West Sussex,
BN15 OAE, England.
30th November, 1981

The Editor,
Dear Sir,

I have intended to write sooner but I have been somewhat unsettled, having returned to live in the UK, and have only just had access to the info necessary for this letter.

I wrote "The Even Simpler Regulator" article as VK2BXF, and it was published in AR some many months ago.

Since then I have heard from Bruce VK3BM in Swan Hill and he has done quite a lot of research during constructing a 25A unit.

His source of 2N3055 devices had a wide range of hfe, so much so, that the current was not evenly shared between the transistors. He ended up using a transistor tester to select 2N3055s of matching hfe and that solved the problem.

So I thought it would be a good idea to mention the matter in AR in case others are having "one" transistor making all the heat!

I have not experienced the problem, perhaps because I have used "good name" transistors — such as Motorola from "Tandy".

I have heard of several regulators up and running successfully, so the article seems to have been accepted very well.

73 es health. Denzil Roden G3KXF, ex VK2BXF. ■

28 Redgrave Road, Normanhurst, NSW 2076
7/1/1982

The Editor,
Dear Sir,

It is now time the amateur radio organisations world-wide consider our tradition of using USB above 10 MHz and LSB below 10 MHz. For those who have been recently licensed the reasons for these practises are perhaps not apparent. When amateur radio was developing the techniques of constructing stable variable frequency transmitters for single sideband suppressed carrier transmissions most equipment generated the SSB at around 9 MHz. This meant that one VFO range gave both 80 metres and 20 metres, virtually the only bands where there was any SSB activity.

Naturally this meant that we had opposite sidebands on each band, and so the tradition persisted.

I believe that we should consider using USB on all bands for the following reasons:—

All commercial usage is USB.

And secondhand transceivers that become available from military or commercial sources will be USB.

WICEN compatibility with military and SES equipment will be enhanced. Already WICEN in NSW has had to work a military helicopter on 80m USB in an exercise.

A small saving would be made in the manufacture of amateur equipment.

73. Barry White VK2AAB. ■

19 Wallis Ave., Tonkley, 2263
20th February, 1982

The Editor,
Dear Sir,

In this age of Eco-nuts, Uranium nuts and Cocoa-nuts we now have a new type — the hand held nut. Whilst not denying the great versatility of these and I must admit to even owning one, they are designed for a different purpose than that which attracts the Hand Held Nut.

Firstly, try the local repeaters and your friends simplex. Then, try those repeaters that you normally work with with at least 10 watts and a beam. Find a spot where you can hear the repeater and then arrange with a friend with another hand held, preferably mobile, to work him on a Sat. afternoon on the day that the local club has its Field Day or Zone Convention. Spend all afternoon finding good (?) spots to work each other.

Furthermore, always stay on the repeater for at least 3 hours. Never use any antennae except the 'Rubber Duck'. Let your mobile rigs, 5/8th, afterburners and beams gather dust. If you reach Readability 3 move and find another weak spot. Finally, let your nicads run down and leave the set on low power.

Further refinements include continued button pushing, lack of call signs. Keep the car window down at 100 k.p.h. and at the end of the day soundly abuse on air the repeater for its deafness, lack of power and proneness to superimpose noise on weak sigs. After all, the designers were a bunch of incompetents!

J. R. Saunders VK2BNY

6/41 Alphington Street, Alphington, Vic. 3078
31st January, 1982

The Editor,
Dear Sir,

Firstly may I congratulate the WIA on the excellent Sunday morning broadcasts.

It is a pity that in recent weeks part of the broadcast has been spoilt by malicious interference.

I do feel, however, that many amateurs who listen to the broadcast may be making the situation worse by commenting on the interference on the channel 5 repeater (VK3RMM) during the call-back. This only seems to give the person who is causing the interference the satisfaction of knowing that they have achieved their objective of disrupting the broadcast.

In the UK we have the same type of problem on many of our repeaters. There we either completely ignore the interference, in which case the person causing it eventually gives up thinking they have caused it eventually gives up, thinking they have been unsuccessful in their jamming, or a group of operators will QSY to an obscure simplex channel and track down the source of the interference, taking appropriate action when they find it.

I am sure that if either or both the above actions were followed in the Melbourne area the problem would be reduced in a short time.

Yours faithfully,

Nell J. Uderwood VK3DHJ/G4LDR.



STAMP COLLECTORS

The International Magazine and Club for Radio Amateur Philatelists are trying to start an international club for Radio Amateurs that also have the hobby of Stamp Collection. A magazine "Ham-Stamps" will be published quarterly with the first edition due in April/May, 1982.

The Club is looking for a co-ordinating Radio Amateur/Philatelist in each country, also membership is now open. Annual subscription is \$5.00 US or 20 IRCs sent to: LA5NM. M. Bjerrang, Box 210, N-9401 Harstad, NORWAY. For any further information and a general newsletter send 3 IRCs to LA5NM.

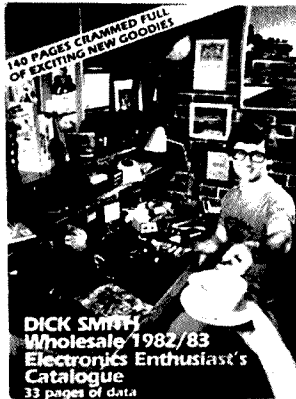
The first two people to send their membership fee will receive a special envelope with a map of Artic areas, special cachets, Norwegian stamps and an envelope postmarked at one of the three visited polar bases which the Norwegian Artic radio amateur expedition operated from in 1981 (value \$2.50 US).

A few amateurs with an interest in stamp collecting are M1C, ZD8TC, JX7FD, JW5NM, JW2CF, G3NBC, LA7RB, SM6CYZ, K0BJ, KA7DBA, O28KW, LA8CE, JW9QH, LA6QM, LA3EU.

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DSE/A248/LM

WIA MAGPUBS SERVICE TO MEMBERS



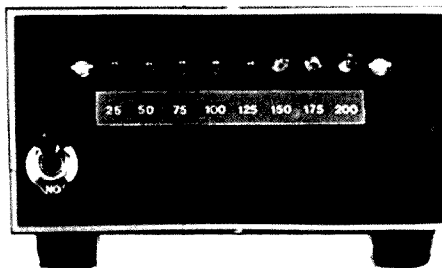
Purchase your reference books, WIA badges, log books and similar items —

- from your Division, or
- direct from MAGPUBS Box 150, Toorak, Vic. 3142

Here are a few examples of prices direct from Magpubs (add postage on weight) —

ARRL Course in Radio Fundamentals	.....	\$4.70 (260g)
DOC Regulations Handbook	.....	\$3.60 (230g)
RSGB TVI Manual	.....	\$3.40 (140g)
AARRL Weekend Projects	\$3.70 (150g)
ARRL Antenna Book	\$5.70 (510g)
All about Cubical Quads, Orr	\$4.60 (150g)

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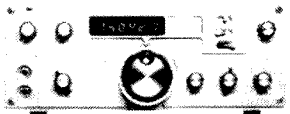
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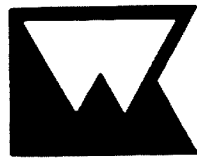


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SILENT KEYS

It is with deep regret that we record the passing of —

Mr. EDGAR WAGNER G3BID
Mr. R. C. B. LILLIE VK2QG
Dr. A. M. MYERS VK5AMY

OBITUARY

Dr. ARTHUR MYERS VK5AMY
Born 28th April, 1910

Merv or "Doc" as we knew him, was a G.P. in Victor Harbor, South Australia, from 1957 to 1st February, 1982, the day of his passing — he died at the operating desk whilst working a Greek station.

Prior to going to Victor Harbour he operated a general practice in Peterborough in the north of South Australia from 1938-1957 during which time he spent four years in the Army as M.O. at Wayville & Cook in South Australia.

From 1930 he was very interested in short wave listening and reporting — in the latter part of 1978 he became interested in Ham Radio. Hugo VK5BC, Jack VK5LR and I exerted some "slight pressure" on Doc to "have a go". This he did with the following results:

- Passed Novice Exam 2nd February, 1979.
- Passed Limited Exam 19th Feb., 1980.
- Passed A.O.C.P. Exam 10th August, 1980 — then aged 70 years.

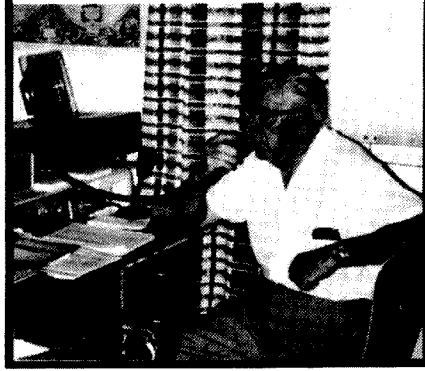
He was active on all HF Bands, 80 to 10, also 2 metres. He worked a great number of DX countries on 20, 15 and 10 metres in the short time available to him.

A well read and learned man with a keen sense of humour, he will be sadly missed by those of us who knew him.

Our thoughts are with his wife, Margaret (Peg) and family.

Bon voyage, Doc.

Bill VK5XB



EMC

(Electro Magnetic Compatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO

**VK3QO,
Federal EMC Co-ordinator, QTHR.**

HAMADS

- Eight lines free to all WIA members. \$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA current Call Book.

FOR SALE

Linear Yaesu FL110, suit FT7 C & C, \$220; Hygain TH3 mark 3 HF triband yagi with BN86 balun, \$240. Ph. (03) 465 2991.

Realistic DX 200 Communication Rx, 5 band, 150-400 kHz and 520 kHz-30 MHz, CW and SSB signals, with manual, good cond., \$150. L31187, QTHR. Ph. (03) 277 1874.

Pye Victor FM Low Band Txcvr., v.g.c., easy to mod. for 52 MHz, AC power supply: Pye type PS 728 240V AC to adjustable 12-14 V DC regulated output, excellent cond., \$25; AWA carphone, type MR-10C, mod. for 52 MHz, less xtals, c/w trans., PS speaker, cables, etc., v.g.c., \$15; AWA remote control unit, type 1A, to suit BS-50 base units, internal PS speaker and handset, excellent cond., \$10; licensed amateurs only. VK3EM, QTHR. Ph. (03) 578-7745.

TH6DX Triband Yagi by Hygain, new in carton, \$395. VK3SP, QTHR. Ph. (03) 842 1841.

Yaesu FT207R(A) Hand-held 2m Txcvr., only a few months old, used as rx only, orig. packing, handbook, charger, etc., \$250. VK2VHQ, QTHR. Ph. (02) 525 7206.

Icom 701 with power supply, IC701PS, handbook, exc. cond., orig. packing, no mods., \$860. ONO. VK3KCW, QTHR. Ph. (03) 329 0016 Bus., (03) 277 7330.

Kenwood TS820S Tx, dig. readout, CW xtal fitted, fact. mod. for novice power, hand mic., absolutely immaculate cond., \$750 firm, no offers. VK3VMO, QTHR. Ph. (053) 32 7569 evenings or weekends.

Icom 22S, 12 mth. old, not used MOB, \$220. VK3AKU, QTHR. Ph. (03) 792 9587.

Video Recorder (b/w), Sony AV-3600CE, with two blank 70 min. Sony tapes, one empty reel, plus a full original service manual, working, very good cond., \$170. VK2ZET, QTHR. Ph. (02) 85 4640 AH.

TR9000 2m Multi-mode Txcvr., \$500. ONO: 28 MHz to 432 MHz (2 MHz) microwave modules transverter, \$180, ONO: AR22L ant. rotator, \$80, ONO, or swap all of above for Tono 700E or similar equipment. VK5ATB, QTHR.

Drake TR-4C, RV-4C remote VFO/PS, v.g.c., \$525; Kenwood TS600 6m Txcvr., new, \$475; Icom IC502A 6m Txcvr., good cond., \$150; microwave modules MMT432/28, 432 MHz to 436 MHz, v.g.c., \$200; Realistic AX190 amateur band Rx., v.g.c., \$100. VK4ZRF, QTHR. Ph. (07) 349 1488 AH.

Generator, portable Honda EM300, good working order, quiet, runs Uniden 2020, \$300, ONO. Peter VK3ANX, YTHR.

Icom IC701 HP Txcvr., all solid state, mint. cond., mic., no mods., manual, \$750; Cushcraft 2m ringo ranger II antenna, improved version, 7 dB gain, new, \$65. VK3RD, QTHR. Ph. (03) 579 5272.

Pye Transceiver MTR1, in steel case, with mic., key and instruction book, also AWA Forestphone, \$150 the lot; Yaesu FT101Z, as new cond., never Tx, with DC-DC inverter, fan, mic., and antenna tuner, FC901, \$800, or exchange for Yaesu 7700/SW with attachments, H. Beaconsfall, 41 Howitt Road, Caulfield. Ph. (03) 528 5090.

Final Unit of Station of late VK2AMQ: IC22A 2m Tx/Rx and matching power supply, IC3PA xtals for repeaters 3, 4, 5, 6, 8, simplex 40, 50, good cond., \$100. Mrs. Haining. Ph. (02) 649 5665 (Saturday only).

Yaesu FR101 Rx, 1.8 MHz to 30 MHz, 21 bands, plus 2 and 6m, AM, FM, SSB, CW/N, CW/W, RTTY, caxton, manuals, \$525; Scalar mobile triband antenna, complete 10, 15, 20, 40, 80m resonators, \$65; MFJ 160-10 long wire tuner, \$20; Kenwood TR2400 2m h/held, complete, manuals, charger, carton, \$250; Yaesu world ham clock, \$20; Ameco PT-2 receive pre-amp., 1.8 to 54 MHz, \$35; Tech TE 15 GDO, \$25. Ph. (02) 57 4648.

Icom IC290A 2m multi-mode, hardly used, mint cond., \$500; Icom IC202 SSB, with Oscar xtals, \$150; Chirnside duoband yagi, 10-15m, \$90; 2m ringo, never used, cost \$60, sell \$45; 2m yagi, 13 elements, wide spaced, 16.1 dB gain, \$35; Crown antenna rotator with cable, \$80. VK3XAP. Ph. (03) 288 4714 AH.

Anadex DP 8000 fast line printer, serial or parallel input, \$610. Mark Webster VK2BAK, QTHR. Ph. (02) 487 1299.

Kenwood TS520 AG/DC, 27 MHz crystal, filled, complete with DG 5 digital readout, TS520S external VFO, all with orig. cartons and manuals, new final just fitted and checked by Kenwood, see wo.king, \$550; Datong Morse lutor, \$95. VK2DUI, OTHR. Ph. (02) 337 5896.

Swan 350 Txcvr and Power Supply, covers from 10 to 80 metres, includes handbook, perfect cond., \$300. VK4VXC, QTHR. Phone (074) 62 1606 (AH), ask for Peter.

Teletype No. 15 Printer, \$55; Teletype No. 14 Tape Perforator Printer, \$35; Teletype No. 14 Tape Reader, \$25; Demodulator, \$25 VK3AYM, QTHR. Ph. (33) 580 8095.

Storm damaged Antennas: Western DX33 (same as Hygain TH3 Mk 3), all traps ok, director and reflector elements require 1 new alum. section each, boom and driven el. ok, \$120. ATN 16 el. 2m long yagi, abt. 7 elements bent or missing, boom, balun and b/and elements ok, \$25.00. Buyer to pick up. VK3UV, OTHR. Ph. (03) 580 6424 (AH only).

Shack Clearance. Kenwood TS-120S, mic. and manual, \$475. Kenwood TR2400 2m FM with ext. spkr./mic., \$235; Galaxy 111 HF SSB txcvr, complete, \$150; Yaesu FP2 DC power supply, \$30; 160/80/40 AM/CW transmitter, 10W OP with AC PS, \$30; Marconi 1155 all band communication receiver, goes well, \$50; IC22 crystals, many channels, \$10 set; Ilexi ant. for KEN 202, \$5; RF speech processors, KEN KP-12, Daiwa RF440, \$60 ea. VK30M, OTHR. Ph. (03) 560 9215.

Marconi Circuit magnification (O-meter), 15-180 MHz, \$125; SP transformer, 240V input, 1100-750-500-0-500-750-1100V out at 500 mA continuous, \$45; also considerable stocks of transformer cores, \$1/kg; wide-spaced variable capacitors, etc. VK3ASC, OTHR. Ph. (059) 89 5995.

Estate of F. A. Bibby VK30L: Yaesu F101 txcvr, handbook; Yaesu FT221 txcvr., handbook; Yaesu FTDX570 txcvr., handbook; Yaesu FT50 txcvr.; Tech TE22 audio generator; Sanwa SWG301 test osc.; VTVM; Osler SWR200; multi meter; tape recorder, R to R: CB txcvr., handbook; Yaesu FT2200G VHF txcvr.; AT5 Tx, handbook; AR8 Rx, handbook; BC432 Rx, handbook; CRO; SCR221J freq. meter with AC supply, handbook; audio amp./AM modulator, 2X616; Heathkit TV alignment generator, handbook; YEW 75/150/300 std. voltmeter with O/L protection; box diodes, approx. 150; assorted switches/meters/wire; Drake SSR1 communications Rx, Wadley, handbook; Mast 35' (Hills telescope). Ph. (03) 836 0707.

Deceased Amateur Station (Complete). In mint condition, less than 3 yrs. old. HF txcvr FT101E, includes, Yaesu h/held mic., 901 spkr., YC-601B dig. freq. display counter, Tokyo HC500A ant. coupler, Daiwa CNC20 SWR and power meter, Yaesu YH-55 headphones, Shinwa 100S low pass filter, Hi-Mound HK708 morse key, Tokyo AM5 all-band trapped vert. ant., HB Irliplex dipole and mast. Complete with all co-ax cables, plugs and instruction manuals, \$1250 ONO. Ph. (03) 544 3115 or VK3VAM, QTHR. Ph. (03) 557 6056.

Yaesu FT101ZD (digital readout model), HF txcvr., exc. cond. (has had little use), \$650 or make an FT101E and FV101B, exc. cond., \$600 ONO; FT101Z, as new, \$600 ONO; D104 mic. on G stand, new, \$100; Datong auto. RF speech processor, as new, \$180; microwave module MML144/25, 144 MHz, linear amp., \$90; Hammaie thurline wattmeter, Mod. 4360, 1.8 to 30 MHz, made by Bird, \$95. VK6NE. Ph. (09) 446 3232.

offer. VK2AZT. Ph. (069) 42 1392.
Yaesu FT501/FP501 Txcvr., 560W PEP, dig. readout, CW filler, Mosfet preamps on 10-15m, \$500; R390A with CV157 and CV116B ISB and RTTY adaptors, \$1000. VK3AAR, QTHR. Ph. (03) 836 4279.

Yaesu Txcvr with Oscar Block SWR200, microphone YD148, key HK706, as new, in cartons, total price \$495. VK2BAL. Ph. (02) 44 4135.

Computer, Dick Smith System 80, with lots of software and books, mint cond., with original packing, etc., \$650 ONO. Ph. (086) 292 099, AH (086) 292 174. VK5AS, QTHR.

Collins 6185 100W AM aircraft txcvr., 2-25 MHz, rack, controller, dynamotor and handbook, original cond., \$195; Collins R390/391 comm. recvr., modules, RF/IF, \$75; IF \$75, 1st osc., \$50; audio, \$75; VFO, \$70; calibrator, \$25; transformer, \$50; R390A VFO, \$70. VK3BFB, QTHR. Ph. (03) 583 1638.

Yaesu FT101E AC-DC, exc. cond., RF speech processor, 160-10m, incl. mic., little used, inspection welcome, \$580. VK3AOC, QTHR. Ph. (03) 527 7919.

Icom 245 2m FM/SSB Dig. Mobile Txcvr, 10W, \$260; Icom 701 HF Txcvr. with power supply, \$950; Kenwood TS120V HF Nov. txcvr., \$380; Yaesu FRG7 .5/30 MHz rcvr., \$230; Hy-Gain 18 AVT all band vert., \$55. VK2BMR, OTHR. Ph. (02) 639 8643.

Kenwood TR9000 All Mode 2m 10W Mobile Txcvr. with mem. scan, GC, all standard accessories, \$450 ONO; pair of Dick Smith 3W 3 channel 27 MHz walkie-talkies in near new cond., best offer, VK4XT, QTHR. Ph. (074) 62 2389.

Shack Clean-Out. Only 2 items remain from my recent clean-out/ups-dating — they are: Alda 103 lully solid state HF mobile transceiver with mic. and handbook, covers 80, 40, 20m, SSB and CW, 100W output, 25/100 kHz callb., noise blanker, this unit has been a faithful performer and is 4 yrs. old, still in exc. cond. with years of use still left in it (made in USA), a gift at \$320. The other item is for you computer buffs: a Radio Shack TRS80 level 2 microcomputer with 48k RAM on board (yes 48k), TV modulator, PSU, soma "games" tapes, 3 comprehensive manuals, the unit is 9 mths. old, in as new cond. Reason for sale — I need the cash! A bargain at \$850 (equiv. today's retail price is over \$1250). VK3UV, OTHR. Ph. (03) 580 6424 (AH only).

TRADE HAMADS

Torolds: Iron powder toroidal cores, ex stock — T44-1, as used in "A REFLECTION COEFFICIENT BRIDGE," QST October 1981, 4 for \$2.55; T200-2, balun core, 2 in O.D., \$4.29 ea., 2 for \$8; T225-2B, a whopper, 2 1/4 in. O.D., 1 in. HT, bigger than 2 x T200-2, \$8.33 ea. All prices above include post-packing. The Australian Acoustic Company, 20-24 Ward Street, Eudunda, SA 5374.

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Amidon Ferromagnetic Cores: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R.J. and U.S. Imports, PO Box 157, Morildale, NSW 2223.

WANTED

Transistors, 1 x 2SA124 and 1 x 2SD65-1 for Sony port. 8-301 TV. VK3AH, QTHR.

RF Power Amplifier Valve, General Electric "Compaction" No. 8950, as used in the final of a Swan Tx "Cygnet" model 300B. VK3BOU, QTHR. Ph. (03) 850 3549.

Tower Wind-up, 80 to 100 ft. write Michael, RMB 2145, Numurkah, 3636. Ph. (058) 62 1965, (058) 62 1705 A.H.

SB620 Heathkit, any cond., details to VK7PF, QTHR. Ph. (003) 44 1345.

Collins R390/391 RF/IF Module Cover and top and bottom cover plates (R390A ok), R390 nameplate, tools. VK3BFB, QTHR. Ph. (03) 583 1638.

Yaesu FT101E Transceiver, in good order. Ph. (08) 384 3471.

Circ. Diag. or Comp. Handbook for C42, set and unit No. 12, also freq. dial film for R210 rx and circ. diag. or handbook for R210, or a complete R210 in working order. L50304, QTHR. Ph. (08) 264 1886.

Trap Vertical Antenna, any type with coil in base. VK2KH, QTHR. Ph. (02) 525 2981.

Creed Teleprinter Handbook (Model 7 Series), copy pages Figs. 61, 69, 70. Instructions Test Set Teletype TS2B/TG, parts. Model 14 T/D. Handbook Model 14 T/Reperforator. Collin Gracie L30060, PO Cavendish 3408.

WANTED TO BUY OR SWAP

Teleprinter Picture Tapes or pictures only. Collin Gracie L30060. PO Cavendish 3408.

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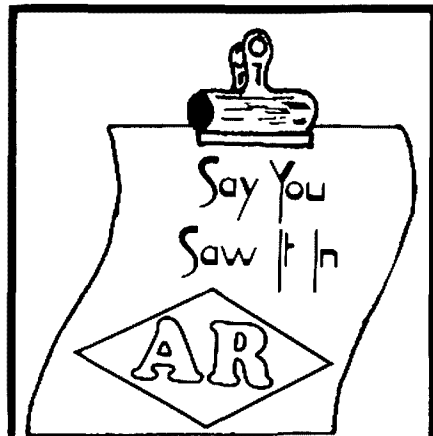
Kenwood TR9000 All Mode 2m 10W Mobile Txcvr with memory scan, GC, all standard accessories, for small all band HF mobile transceiver like FT7B etc. VK4XT, QTHR. Ph. (074) 62 2389.

TENDERS

Tenders are invited for the sale of the following amateur equipment, ex VK1JS (dec.): KW 2000 side-band txcvr. complete with power supplies and access.; Heathkit HM-11V reflected power meter; TS520S Kenwood txcvr.; DG-5 Kenwood dig. display; TS-700G Kenwood 2m txcvr., each separate. The above items can be inspected by appointment through the Curator, 2nd Floor, National Mutual Centre, Darwin Place, Canberra, between 9 a.m. and 4 p.m. Monday to Friday, or by telephoning (062) 46 1699. Tenders in plain envelope marked "Tenders — Radio Equipment", addressed to the Curator of Estates of Deceased Persons, PO Box 515, Canberra, ACT 2601, to be received no later than 4 p.m. on the 14th May, 1982. The highest or any tender will not necessarily be accepted.

RAFFLE RESULT

Elizabeth Amateur Radio Club Raffle for Kenwood TR2400 drawn 14/2/82, winning ticket No. 52.



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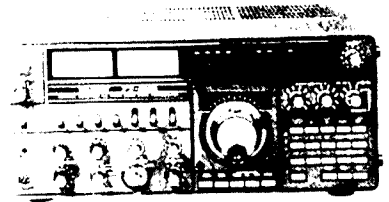
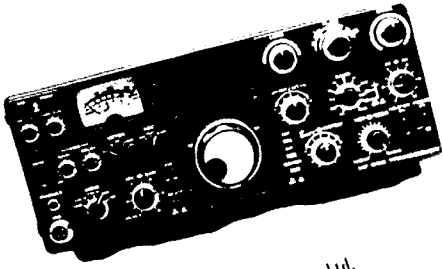
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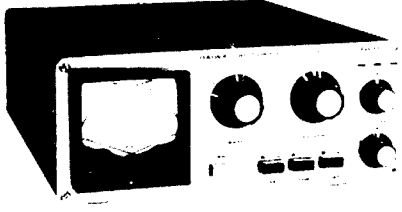
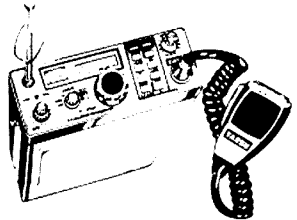


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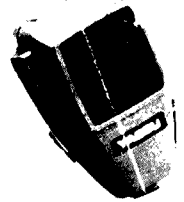
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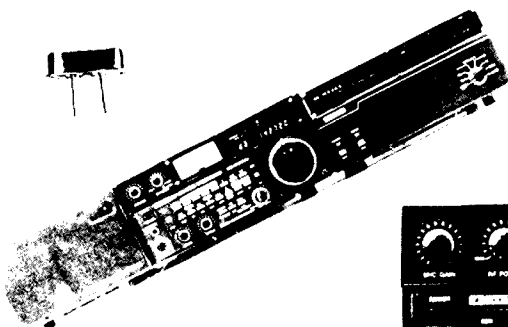
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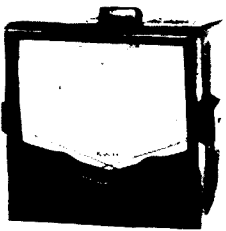
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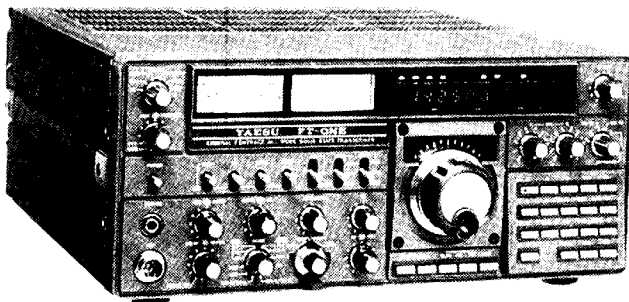


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FT-720R VHF/UHF FM TRANSCEIVER

ADVANCED PLL TECHNOLOGY

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CHOOSE YOUR FAVOURITE BAND

The FT-720R Control Head may be used with either the FT-720V 2 Meter RF Deck or the FT-720U 70 cm RF Deck

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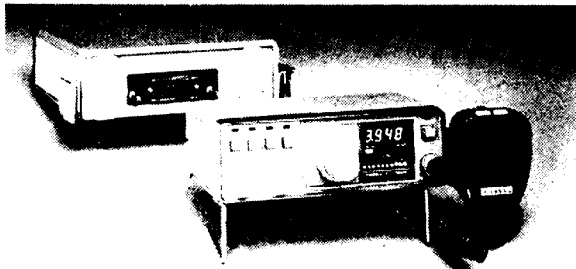
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FIVE MEMORY CHANNELS WITH PRIORITY FEATURE

As many as five memory channels may be programmed, for instant return to a 'favourite repeater or simplex channel'. One of the memory channels may be used as a priority channel, as well and the microprocessor will then search between the priority channel and your main dial frequency!



SPECIFICATIONS:

	FT-720RV	FT-720RU
Frequency coverage:	144.00 — 147.99 MHz	430 — 439.975 MHz
Synthesizer steps:	10 or 12.5 kHz	25 kHz
Power output:	10 watts (RV model) 25 watts (RVH model)	10 watts
Receiver type:	Double conversion superheterodyne	Double conversion superheterodyne
First IF:	10.7 MHz	16.9 MHz
Second IF:	455 kHz	455 kHz
Sensitivity:	0.32 μ V for 20 dB quieting	0.5 μ V for 20 dB quieting
Selectivity:	\pm 6 kHz (—6 dB) \pm 12 kHz (—60 dB)	\pm 12 kHz (—6 dB) \pm 24 kHz (—60 dB)
Power requirements:	13.8 VDC, negative ground 13.6 VDC (RVH model)	13.8 VDC, negative ground
Current consumption:	Approx TX 3.5A (RV model) TX 6.5A (RVH model) RX 0.5A	Approx TX 4.5A RX 0.5A
Case size:	150(W) x 50(H) x 247(D) mm	150(W) x 50(H) x 247(D) mm
Weight:	Approx 2.5kg	Approx 2.5kg

Specifications subject to change without notice.



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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



DURAL — 25 Years on

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amateur radio

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Jeff VK2BYY, pictured at the main console of VK2WI for a Sunday morning broadcast.

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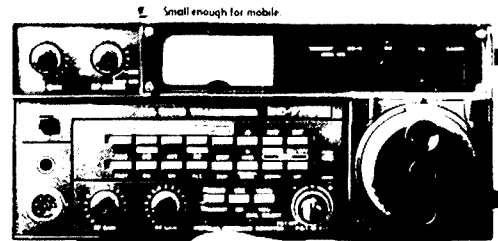
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- CN620A Daiwa X Needle SWR/PWR Meter 1.8-150 MHz.
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WIA NEWS

FEDERAL CONVENTION

By the time most of you read this the 46th Annual Federal Convention will be over. Many observers miss the point that in accordance with Company Law and the Constitution, an annual meeting has to be held. It is also the only forum for discussing Australia-wide matters of concern and interest to the amateur service. The subjects for debate and decision come from the Divisions and from the Executive. These originate from members of the Institute.

If critics of the work carried out by the Federal Convention would take the trouble to do their homework before committing pen to paper, they would have noted that planning for the future of the amateur service and of the Institute both in the short and the long term was discussed at length at the 1981 Convention. A draft plan was drawn up for completion of the fine details during the year so that it may be finalised at the 1982 Convention; subject to debate.

A number of further Agenda Items have been submitted for discussion including a proposal for lowering the age for obtaining

full or limited licences to 14 years, that repeaters may optionally emit beacon Idents, simplification of the RST system, WICEN frequencies on the new band/s, standardising pensioner grade conditions and that guidelines may be desirable for WICEN as affected by Third Party Traffic, phone patching and autopatching.

6m BAND

The relevant part of letters despatched by the Minister of Communications to amateur enquiries about 50-52 MHz are quoted for information:—

"The television industry, and the Government, have recently decided to support the continued use of the VHF band for the main television broadcasting stations and as a result, Channel 0 will continue to be used.

Nevertheless, my Department is actively studying the basis on which amateurs may be permitted to make use of the band 50-52 MHz for the purpose you have outlined.

A decision is pending, and the outcome will be reflected in the Australian frequency table of allocations which will be published shortly."



QSP

CB

The Sept. '81 issue of the I.T.U.'s Telecommunication Journal contains broad details of CB regulations and usage in various countries. The following is a very brief extract in respect of countries which do permit CB listing in this order—frequencies MHz, channels, emissions, max. output power. W. Germany: 26.96 - 27.28, 22, FM, 0.5W. Argentina: 26.965 - 27.225, 6 + others, A3, 5W. Australia, Austria: 27.12, 12, AM/FM, 0.5W. Barbados: 26.965 - 27.405, 40, AM, 4W/12W pep. Belgium: 27 MHz band, 22, AM/FM, 0.5W. Bermuda similar to Barbados. Botswana: 26.965 - 27.405, 40, AM, 4W/12W p.e.p. Canada: 26.960 - 27.410, 40, AM, 4W/12W p.e.p. Costa Rica 26.965 - 27.015 and 49.0, 5W. Denmark: 26.965 - 27.225, 22, A3/F3, 0.5W/0.1W integral antenna. Egypt: 26.965 - 27.405, A3A, 5W. El Salvador—similar to Barbados and add F1A. Ecuador: 27 MHz, 40, AM, 5W. Fiji: 27 MHz, 38, AM/FM, 1W on land/2.5W marine. Finland: 26.958 - 27.230, 23, A3, 5W. France: 26.96 - 27.28, 22, FM, 2W/0.4W integral antenna. Greece: 26.965 - 27.405, 15, 6A3, 5W. Hungary: 26.965 - 27.275, 63, AM, 3W. India: 27.120, 5, 6A3, 100mW. Indonesia: 26.96 - 27.41, 40, AM, 4W/12W. Israel: 26.97 - 27.27, A3, 100mW in. Italy: 26.96 - 27.28, 23, AM/FM, 5W. Jamaica—similar to Barbados. Kenya: 27.003 - 27.273, 46, A3, 1W. Kuwait: 26.96 - 27.41, 40, AM, 4W. Maldives: 27 MHz band, AM/FM, 10W. Mexico: 26.96 - 27.41, 40, A3, 5W. Norway: 27.12, 23, AM/FM, 100mW. New Zealand: 26.425 - 26.75, 14, A3, 2W. Netherlands: 26.985 - 27.225, 22, F3, 0.5W. Portugal: 26.96 - 27.41, 40, AM/FM, 5W. Senegal: 27.05 - 27.925, 24, AM/FM, 3W. Singapore: 27.12, 300mW. Rep South Africa: 27.185 - 27.275, 9, AM, 4W/12W p.e.p. Sweden: 26.95 - 27.26, 24, AM/FM, 3.5W. Swaziland—similar to S. Africa. Tanzania: 27 - 27.28, 23, 6A3, 1W. Thailand: 26.965 - 27.405, 40, AM, 5-10W. Togo: 28.96 - 27.28, 31, AM/FM, 0.1-3W. Uruguay: 26.96 - 27.26, 23, AM, 5W. U.S.A. ■

REPEATER RESPONSIBILITIES

In the USA regulations: "Part 97 stands unambiguously for the proposition that a licensee of a repeater station in the Amateur Radio Service is responsible for the content of the repeater station's transmissions." A petition for rulemaking that repeater licensees be responsible for maintaining only the technical standards of the repeater was denied. QST, Jan. 1982. ■

EMISSION DESIGNATIONS

In QST, Jan. '82, it is noted that the FCC in the USA proposes the use domestically of the new system of emission designations adopted by WARC '79. Comments were sought concerning the use of old designations such as A3 and F3 in favour of the new J3E and F3E. It was pointed out that the new system has three mandatory symbols as follows: (1) type of modulation in the main carrier, (2) nature of signal(s) modulating the main carrier, and (3) type of information to be transmitted. The ARRL agreed with the FCC that the required use of the new system should be limited to the three mandatory classification symbols and that it should not be extended either to the optional symbols or to the band width designations at this time. Implementing the new system, the ARRL stated, will not be a trivial matter. (See AR, September, 1981, page 26.) ■

DXPEDITION FINANCING

"Used to be you went on a DXpedition and paid for it yourself (or you just didn't go). What with the cost of major world jaunts these days, many prospective journeys require aid in getting there and back. The National Capitol DX Association takes a stand that contributions, financial aid, will be considered after the conclusion of a responsible foray. More details from K3KA, new president of the club." QST, Jan. 1982. ■

NEW BANDS — USA BEACONS

The FCC in the USA authorised the use of experimental radio beacons in each of the three new WARC bands (not yet authorised for use in the USA). These beacons will be 3W ERP on 10140 KHz and later on 18108 and 24930 KHz increasing to 30W at a future time. Reports and data from W4MB of Florida. Jan. 82 QST. ■

THAT VEO AND CRRL

According to Canadian News in Jan. '82 QST VEO call signs will be reserved for amateur stations on ships that work primarily out of Canadian waters. Amateur stations on ships that work primarily in Canadian waters will be operated as mobile stations. Current CRRL membership is stated to be 6300. ■

NOT FOR YOU

"Amateurs are often critical of operators in other services who operate outside their authorised bands; let's not expose ourselves to the same criticism." Jan. '82 QST League Lines. ■

FAX AND SSTV

USA "operators holding a General Class or higher licence (will be allowed) to use facsimile and SSTV on all the HF bands." QST, Jan. 1982. ■

CANADA — CUSTOMS

In the November 1981 Canadian budget "Customs Tariff Item 44534-2 was reworded to permit duty free entry of amateur transmitters, receivers, transceivers and related equipment with provisions for WARC bands or with general-coverage receive. The item was not expanded to include antennas, presumably to protect Canadian companies that do manufacture these." QST, Jan. 1982. ■



QSP



ROYAL NEW ZEALAND AIR FORCE

TELEPHONE: WEI 3000 Ext. 886

No. 5 Squadron
RNZAF Base Auckland
Air Force Post Office
Whenuapai
AUCKLAND

16th February, 1982

Dear Sir,

I was the Air Electronics Officer (the communications and sensor supervisor) on KIWI 865, the first of the search and rescue P3 Orions of the RNZAF sent to search for the distressed yacht CYN SAN on 30 January 1982.

Throughout my six hours on the radios, yourself and your fellow hams on 14335 kHz both in Australia and New Zealand, displayed a level of co-operation and dedication with which you should feel justly proud. Without your assistance our job of finding CYN SAN would have been very much more difficult, indeed, without your organisation we would not even have known the vessel was in distress until long after she was totally lost. The South Pacific is a very large area to search without a reasonable starting point so we may never have been able to bring the search to a successful conclusion.

For your information CYN SAN was eventually found some 250 miles south-west of her originally reported position and was finally towed to port in Noumea by the French Navy.

Thank you again for your valuable assistance.

(B. J. GODWIN)
Flight Lieutenant
AE Leader 5 Squadron

This is yet another example of thanks extended to amateurs for their assistance in emergencies — please see AR, September 1981, page 4.

PETER WOLFENDEN VK3KAU
Federal President

"Mayday"

Alan Campbell-Drury VK3CD
10 Colchester Drive, East Doncaster 3109

Earlier this year, in near mid century heat, amateur radio and net operation kept a lone traveller company and probably saved a disastrous situation. This story was written as a tribute to the amateur radio service and the South Australian Police.

It was on January 2nd when things started to go wrong.

The trip had been planned alone, the purpose being to get into the Great Victorian Desert, north of the Nullarbor Plain, where the late Daisy Bates, CBE, had spent much of her lifetime living with and caring for a wonderful doyen of Aborigines.

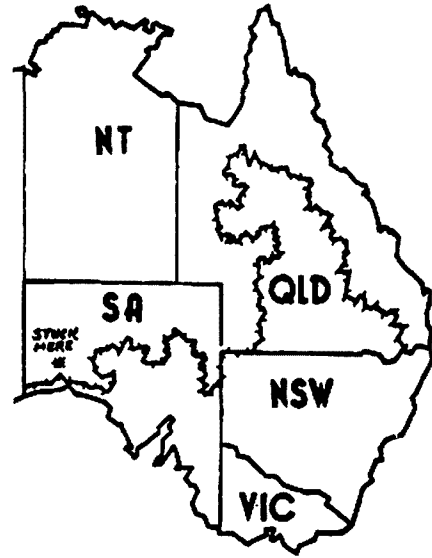
The legendary late Daisy Bates was born in Tipperary, Ireland in 1861 and died in Adelaide in 1951. From the early 1900's she devoted herself to the study of Aboriginal languages, of which she recorded 168 and Aboriginal legends. She wrote about them, and she lived with them sharing their customs, ceremonies, lifestyle and food and caring for the young and old, nursing the sick. No matter whether she was in the outback or in Adelaide she was always dressed immaculately and was an anachronistic figure in a Victorian type costume of high starched white collar, blouse, voluminous ankle length long skirt, button-up boots, white gloves, hat and voluminous fly-veil. We often lunched together at the Grosvenor Hotel in North Terrace. She was an Irish woman of high breeding yet she had ridden camels hundreds of miles droving stock, side-saddle, of course, as that was the lady-like thing to do.

It was summertime and I was chasing the heat but on this occasion it was not the heat that was nearly my demise.

The journey from Melbourne and half-way across the Continent had gone well and the old campervan now had 167,000 kilometres on the clock, mostly made up from many previous successful expeditions. The Eyre Highway was enchanting me once again. Although the traffic these days is increasing at a great rate, every driver still acknowledges the other driver by raising one finger. Last time I did the Eyre Highway each driver raised the whole hand in the fashion of the Queen so it is an interesting observation of our changing times as soon drivers will no longer observe this ritual on one of the world's longest highways.

A radio amateur passed and flagged me down. It was Geoff VK3NZV/VK3YNX headed for Port Hedland. We had never met before but we compared notes and arranged nightly skeds (but if he gets to read this he will understand why I failed to keep them). I was to have skeds with Len VK3VLA too, but these also had to go by the board.

Earlier, I called into the Travellers net but as net control, Art VK6ART had a little difficulty in copying me Pam VK6WP/MM on the yacht "Serendipity II" bound for New Zealand, relayed my QTC from out in the Bight. What a great organisation this net is.



Now I was about to leave the bitumen at Yalata, a little place near the West Australian border, and then I was headed north into the Nullarbor Plain. The track wended its way through the Aborigine Mission Community to link Ooldea on the Trans-Continental. Ooldea was my objective.

As the desert light of day gave way to the fantastic purple light of evening I seemed to be making good progress, looking left and right for some suitable growth, high enough to hang my sixty-six feet of "wet string". This is a simple portable antenna which never lets me down.

Verticals don't work too well planted in the sands of the outback, and just you try radials and counterpoises when you're tired, hungry and clean out of daylight. Getting up that "wet string" is a big enough hassle although I do have it down to a fine art these days. A fishing rod handle with a large casting reel loaded with heavy nylon line and a heavy spherical sinker heaved us as high as possible. You then tie the antenna wire onto the line and haul it up. If you miss your throw, don't attempt to pull it back but instead let the line down again, cut the sinker free, retrieve the line and start again. There are many sinkers, spinners and rocks in trees all over Australia waving in the breeze above many an unsuspecting head innocently working on his barbeque.

If this is not your style then use a temperamental whip, which is invaluable when there are neither trees nor good ground. Arthur VK3AM made me a close-wound forty metre helical whip which is virtually a coil about 18 inches long, which always works well but it does display more fade than the "wet string". A whip is best fitted with a spring-loaded base for easy plugging into its socket and saves the slow frustration of unscrewing it each time for tuning, especially when it is mounted on top of the van.

On past trips into the "mulga" where there have been no trees I have used an extended vertical for the sole purpose of



Daisy Bates, C.B.E.



Leaving Ceduna for the Nullarbor Plain.

hoisting sixty-six feet of light bell wire up in the air. The vertical mast extends to thirty feet and at times I have had to guy it against the winds. There were no high trees here so I made do with my "wet string" very low down which worked well. Unlike the vertical, you don't have to water it to make a better earth Army fashion.

My location was now a few kilometres south of the Dog Fence, but more about that later.

It was a beautiful night as most nights are in this gorgeously arid territory. The stars do not twinkle any more and the days are brutally hot and devastating. The heat takes away your appetite and reminds you how much you rely on litres and litres of water. My once ample ice supply was dwindling but at the same time was providing me with water which I was loathe to throw away.

A "pig-skin" type water bottle is a must. My daughter, Anita, made the excellent choice for a Christmas present some time ago and it has proved more than its worth in the opal fields of Yowah and Lightning Ridge.

I had pulled off the track for the night. The track was rough, stony and at times heavily corrugated but off the track on either side the terrain was sand, but after testing its firmness I considered it okay to put the vehicle into the spinifex as I considered it unwise to block the narrow track in case another vehicle came by. (None did and I doubt if they ever would.)



Nullarbor Camp, north of Yalata, south of the Dog Fence.

I rolled over in my bunk and saw that it was again daylight. The morning was as beautiful as the final hour of twilight. Stark, eerie, silent.

I got up before the seering heat of the plain set in. I mind the remarks of Ted VK5AI mentioning on one of the radio contacts something about "mad dogs and Englishmen go out in the midday sun." So what else is new? When you are out here you can't hide from it.

Ted did try to discourage this trip on the grounds of the risks involved, reasons I could not see at the time. However, he was going to be the first to come to my assistance a little later on.

I had had some difficulty getting off the track at night and next morning I was faced with the same difficulty to get back onto it. But perseverance won through and I was under way again heading north. The only landmarks to be seen are mere place names like Monburo Tank, Broom Tank, Moondrah Tank, Padlinga Tank, Rockhole and Lake I found, which is a salt pan. These tanks and rockholes would seem to suggest water to the thirsty traveller in these parts but one must not be fooled by them. They are relics of days gone by. They have fallen apart and the only likelihood of water could be in the rockholes, but I found none.

Pushing onward, kilometre upon kilometre was rewarding enough in a landscape that knows no change except for the colour variation due to the time of day. The outback plains country—a continuous landscape that you can see at once in all directions, 360 degrees of uninterrupted horizon.

Being out here alone there is a certain feeling of reassurance having radio on board. I have only to switch on the vehicle's main transmitter and I am in touch with the world.

On previous east-west and north-south excursions I have never had to transmit an SOS.

Now and then the vehicle hit some light sandy patches across the track but I was not unduly worried. It would veer slightly but nothing like up at Cameron's Corner, where I near to went through the dog fence broadside.

This mighty fence runs for thousands of kilometres from Eucla in Western Australia up through South Australia, then into Northern Queensland and then snakes its way down to the border of New South Wales. It could almost be likened to the Great Wall of China. In Queensland alone there are 5800 km of it.

We, my vehicle and I, had passed through two fences back in the Aboriginal Community Reserve but now we come to one with a gate in it. This is the Dog Fence.

I did consider hooking up the radio transmitter to it and putting out a CQ DX call, after all it is insulated from the ground mostly by sand. If you could tune it, you would have an antenna nearly the size of Australia, itself.



The gate in the Dog Fence between Yalata and Ooldea. Tracks parallel with the fence used to be camel tracks.

I was now in the area where the late Daisy Bates worked amongst her beloved natives. I had the good fortune to know her back in the days of 1939 when she made a visit to Adelaide.

It was mainly due to my high regard for her that prompted this expedition to Ooldea, a tiny railway siding where she made her headquarters for sixteen years. Maybe some of the natives I met may have been the descendants of some she cared for. Indeed, I photographed one chap by invitation and then he charged me a "dollar" for the privilege and he said if I hadn't been a friend of Daisy Bates it would have cost me two "dollar". I have my doubts if he had ever heard of her and I don't think he knew too much about the "Dream-time" either. His face changed dramatically when I could not provide him with an instant Polaroid picture.



Charlie's picture cost me a dollar and my expression changed but his expression changed when I could not produce the instant photo he demanded.

The northbound track appeared okay but the vehicle still veered somewhat at 80 km/h due to the patches of sand. My reckoning put me more than half way between Yalata and Ooldea bordering on the Great Victorian Desert and the edge of the Nullarbor Plain. The van radio equipment, which had done nearly as many miles as the van in the hot country, was a Kenwood TS520s backed up by my old faithful emergency rig, the tiny Marconi Type A which I used to make my first amateur contact from Heard Island in 1947. I was using the call-sign VK3ACD with four watts across 3500 miles of ocean then.

Before leaving Melbourne I had added "Nulon" to the engine oil as I was assured that if I ran out of oil this teflon additive would get me by with no oil in the engine as it coats the frictional parts. At the rate I was losing oil due to an ill-fitting rocker-cover gasket I took some comfort in this knowledge.

The further I journeyed up the track the greater the feeling of being alone. One can think . . . I did . . . What would I do if any system failed. Then I reassured myself with the thought that there was nothing

that could go wrong that I couldn't cope with. After all, I was carrying adequate (???) emergency equipment. And then there is the radio, but who would come all these hundreds of kilometres to get me?

I was still doing a steady eighty km/h along this sun-drenched track which was, like my mouth, dry and dusty. One cannot imagine that it ever rains, although at times you would think there is rain approaching in the early part of the day, then the sky clears and the searing desert sun beams down again.

Sand, salt-bush, spinifex and mulga are whizzing by when WHAM!!!! It happened about 10.00 a.m. and somehow I could tell it was going to be permanent. The terrain in front of the vehicle didn't seem to change, maybe I was dazed by the glare, but suddenly the van plunged headlong into a metre of fine sand. When this happens the brakes are not necessary any more. I was about to learn that all the emergency equipment I carried was not going to get me out of here and I would fast realise how big this Big Country really is.



The van jacked up for a final attempt to winch it out.

I had had a radio sked with VK5AI (Port Willunga) earlier in the morning and I sensed he thought something was going wrong as he requested another sked for midday which was something we had never done previously, as I am usually well on my way by then and do not believe in "gobbling the mike" whilst driving. This time I would stop though because I did not know what I was heading into. It was on this midday sked that I notified Ted that I was stuck in sand and I was trying to dig it out. It was at this point that Ted seemed concerned and asked for hourly skeds and set about putting the Emergency Net into operation. I really welcomed these suggestions as it simply meant I was not out here alone.

I had a small shovel suitable for digging bog holes, my towing gear was adequate though lacking in length. Ted VK5AI suggested I make a "deadman" out of one or two of my spare wheels. This was good

thinking but out here things are a little different. There was hard ground 10 metres astern but no shovel would ever make an impression on it. So why didn't I carry a crowbar or a pinch bar????

Sweat was pouring off me in the 46C heat of the Nullabor and the radio boys were trying to keep my pecker up. It was good as I was in a situation that I could not handle. I was not too concerned at the present moment but I was not to know how long I might be stuck out here in this beautiful country that was good for nothing except to look at.

The boys kept enquiring about my water supply. I had adequate water, although food was somewhat limited, but it was too hot to bother with eating anyhow.

All day I dug and dug but it is not easy with such a small shovel, which was normally used for walks when nature called. I was rapidly making no progress. What a fool I was to have not brought a long handled shovel along.

The Nullabor is hot yet it is fabulous as in the notes of Daisy Bates, 1913, she says:

"Here there is nothing young that was not long since old. Here there is no germinating potency of nature. The mystery, beauty and freedom of these boundless plains will repel one whose artistic sense demands a more genial scene for its gratification.

"There is solemnity for some, a wierdness for others in this hushed immensity. There is little travel along these desolate tracks. . . ."

Yet with it all and during a time of stress out here, my artistic senses were aroused more than ever before, even more than in the wastes of Antarctica.

Ted VK5AI directed that there should always be at least two stations on the emergency net in case of signal shut-down which was good thinking because out here in this predicament, you cannot afford to lose radio contact.

The net stations asked again if I had sufficient water, which I did and also if I required assistance, but I declined. The wheels were not that far down that I couldn't get something under them. I just couldn't believe that I could not extricate the vehicle by myself. I had the feeling VK5AI did not share my beliefs and seemed most concerned as did Doug VK5DW.

Everything I put under the wheels disappeared out of sight into the powdery sand each time I applied a little reverse power. I dug and dug, but to no avail with the temperature around 46C in the meagre shade that I could create. After a short rest I commenced making up an extremely long towline of about twenty metres which would reach the only tree stump located behind me. It must have been the original "black stump" but it's not there any more, because I winched it out whilst the van stayed put.

Next I set about jacking up all the wheels in turn and placing salt-bush, deadwood and chains beneath them, but al-

ways to no avail. All day I persevered but the chains buried themselves half a metre down in the sand.

I must have drank litres of water during these activities. Maybe I'd quit now and attack the situation again after sundown and see what great joy there may be for me then.

I was becoming water conscious and did not let the water in the wash basin go after washing hands as I may need it to drink, although my water supply could last a week if necessary, perhaps longer. My most valuable commodity now, apart from the radio, was my pig-skin water bag. Although the bag is soaked in warm water outside the evaporation process is such that it ensures cool drinking water inside.

One must use as little water as possible in a land where there is none. Epsom Salts or alum are useful for clearing dirty water to be used for purposes other than drinking, although you could even drink it if necessary. A little of either causes all substances in suspension to flocculate to the bottom.

The van had moved sideways against the metre high embankment of encrusted loose sand as a result of my endeavours to move it. Each time I edged around the van to adjust the aerial an avalanche of powdery sand filled my boots. I was covered from head to foot in this wretched fine chalk-like sand, and I could no longer get at the wheels on the starboard side.

Realising the hopelessness of the situation, I requested assistance in my next radio contact with VK5AI and VK5DW. THIS WAS A "MAYDAY!!!!"

I outlined to VK5DW and VK5AI my type of vehicle, registration number, colour and my driver's licence number for authenticity. I am down in sand on Yalata/Ooldea track about three kilometres north of dog fence. No immediate urgency but assistance requested. Suggest four-wheel drive vehicle.

"We've got to get him out of there." This is what I heard VK5AI say to VK5DW. There was a positive ring to it and a certain finality which sounded reassuring. There was little more I could do from this end now.

VK5AI was located at Port Willunga, some 90 km from Adelaide and was without a 'landline' so it was suggested that VK5DW, in Adelaide, take over and notify the Adelaide police immediately. VK5DW phoned the Police Communication Centre and spoke to Sergeant Jim White, who set the ball rolling.

On the next hourly sked, VK5DW reported to me that Adelaide Police were taking immediate action. They also wanted to know if I had adequate water—the same old question. I imagine that if I had not they would have immediately despatched an aircraft. Such was the efficiency of this Department. The news that they were on their way was gratifying but they could still have trouble locating me. Then I thought of what VK5DW and VK5AI were doing and I realised I was completely in their hands through the medium of the Amateur Radio Service.

On the next sked I asked VK5AI to assume control as he was the strongest signal into the Nuiiabor. Normally the expedition vehicle controls the net but for obvious reasons now I had other things to do. Ted accepted control and on several occasions asked other stations using 7.060 MHz to clear the frequency for an emergency, whilst Bill VK2BC, in Sydney, was doing the same thing, although his signal was very weak with me.

Ted and Bill appreciated the co-operation of the stations that QSYed on all occasions but Ted later commented that none of these stations asked if they could stand by to assist if necessary. They probably were, anyway, but shortly afterwards, when my signal went down Ted could have used their help. Perhaps a "Mayday" is a little unusual on amateur radio.

My new battery was holding up well and I had no worries about the solid 104 Ampere-Hour unit especially made for me back in Melbourne.

Between radio skeds and under the hot Nuiiabor sun, I persisted with digging and jacking, but it was all so hopeless. I thought about a trolley jack but realised I would never get it under the differential as the stern of the van was now sitting flat on its underneath spare wheel.

My plastic bread-board made an excellent base on which to place the mechanical jack but it distorted at an amazing rate under pressure, however it later returned to its natural flatness to such a degree that it could be used again for a bread-board, that is if ever I feel like eating again.

I consumed another litre of cool water and decided to lay down for another rest in the hot vehicle where the temperature was 52C. I had the fan going full blast and all doors and windows open, but there was nowhere else that I could hide from the heat of the desert. My daughter, Jill, gave me the fan for the vehicle and she will never know how vital it has been.

Next day, VK5DW announced that the Police needed more information. They kept asking for more and more information. I felt I was now scratching the bottom of the barrel. I informed the emergency net that I would make further calculations by compass and transmit another fix on the next sked.

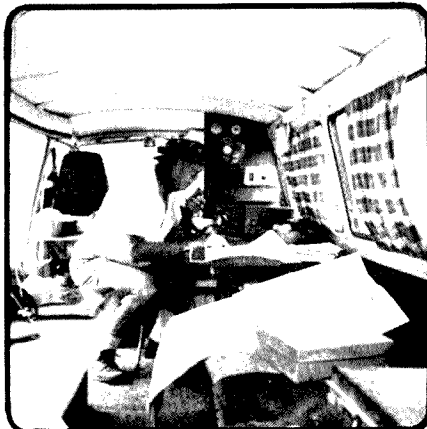
I did my calculations and was now quite confident of my exact position according to all navigational aids I had on board. My main compass had gone beserk so I was using two hand compasses which were extremely accurate. My distance measuring device (Km) on the vehicle showed a calculatable error due to a change of tyre diameter.

My radio call of VK3CD/Non Portable became the joke of the day as Non-Mobile would have been more appropriate. VK5DW laid first claim to my rig and VK5AI to the van in case I didn't make it out. Vultures.

Next transmission VK5DW came up with a QTC which read: "CEDUNA POLICE

WILL HANDLE SITUATION FROM NOW ON." It was short and sweet but it said a lot. At least I could sleep on it tonight.

Next morning came the message: "ADELAIDE POLICE REQUIRE MORE DETAILS ON MY POSITION FOR TRANSMISSION TO CEDUNA."



Making further calculations to transmit to VK5DW.

Very depressing, what further information can I give I suppose I was getting myself knotted up as I told myself a lot of money could be at stake in getting me out of this mess, so I again set about studying the charts and trying to remember any landmark that could be useful. I now observed I was 11 km north of the Dog Fence and not 3 km as I had earlier reported.

Radio communication was keeping up well and VK5AI and VK5DW were doing an amazing job which no-one could appreciate more than I.

VK5WK Nobby was asked to assist when VK5AI had to vacate the frequency during the afternoon. Nobby was coming in to me loud and clear at a time when Doug was having trouble hearing me.

It was so hot that after that sked I dozed off for an hour or so as I was so tired I could have slept for a week with no interruptions, including the radio.

I must only have been asleep for a couple of hours when suddenly a voice at the open back door said, "Hello there." I awoke with a start to look around and it seemed the entire Nullabor was alive with policemen, two very large four-wheel drive vehicles and another belonging to a geophysicist, Ross, who was headed for Watson, up the track. These vehicles all had large diameter wheels and Ross went through the sand that had bogged me down with no trouble and he was in an automatic two-wheel drive.

The Ceduna police, Brad and Darryl, were on their way back from Eucla, WA, when they met up with Lloyd and another policeman from Penong at Yalata and then continued quite a distance together to get me.

Lloyd put a healthy looking cable onto my van and towed me through the sand some 300 metres. How good it is to have

firm earth under my wheels again. These guys were not going to waste time. Somehow they looked at odds with this parched environment as they and their vehicles were so immaculate but I soon realised there was never a doubt that they would accomplish what they had come for.

I ruefully confessed to Lloyd that I had left a fuel dump back where I had gone aground so with no trouble he drove me back to retrieve it. I took this opportunity to broach the subject of reimbursement, but was brushed aside with the comment, "No way. If you can't ask us for help, then who can you ask?" I liked what I heard and that is why I had to write this story.



Help arrives.

Lloyd enquired which direction I was now going to take and I told him I would return to Nundroo on the Eyre Highway.

"Right," the boys said, "you go ahead so you don't get our dust and we'll meet you in Nundroo."

I detected a certain overtone in this remark. More likely they wanted to make sure I didn't attempt to take off northward again. I don't think the dust had anything to do with it. But I needed little urging now that I had firm ground under me again and I set out for Nundroo. I made it back to the Dog Fence taking care to close the gate after me, because I knew the law was following. (I would have done so, anyway.)

I met up with my rescuers at Nundroo and THEY bought me my evening meal there. We had a good discussion and agreed the expedition had turned out to be one of misadventure.

Adelaide Police Communications Centre told Doug VK5DW that they were impressed with the way the Amateur Radio Service had handled emergency traffic as Doug had notified them immediately I had become mobile again and this happened before the news reached them by official channels. The police told Doug that it was surprising how few people had the common courtesy to say "thank-you" when an emergency had passed.

From my end it was pretty impressive how the police came to my assistance in this remote outback region.

L to R: Doug VK5DW, Alan VK3CD/M5, Ted VK5AI and Dave VK5DS.

The expedition failed just short of 50 km to reach its goal, Ooldea. Ironically, back at the turn of the century, Daisy Bates would never have had this problem with her camels.

My special thanks to:
 South Australian Police Communications Centre, Adelaide. (Especially Sgt. Jim White.)

The Penong Police, S.A.

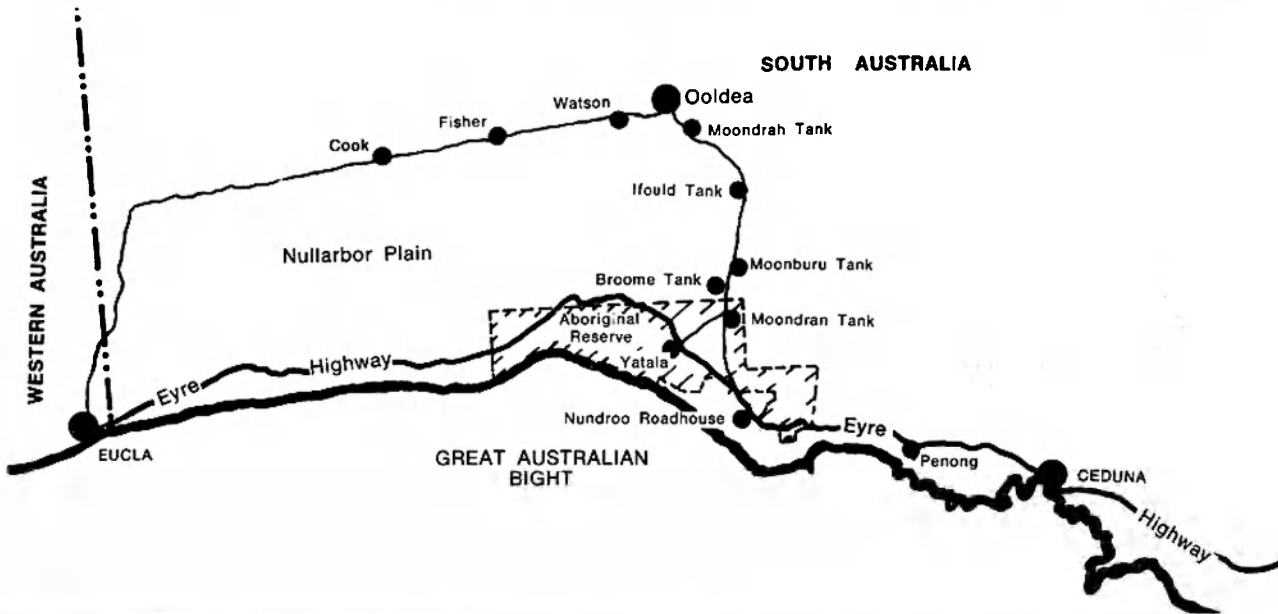
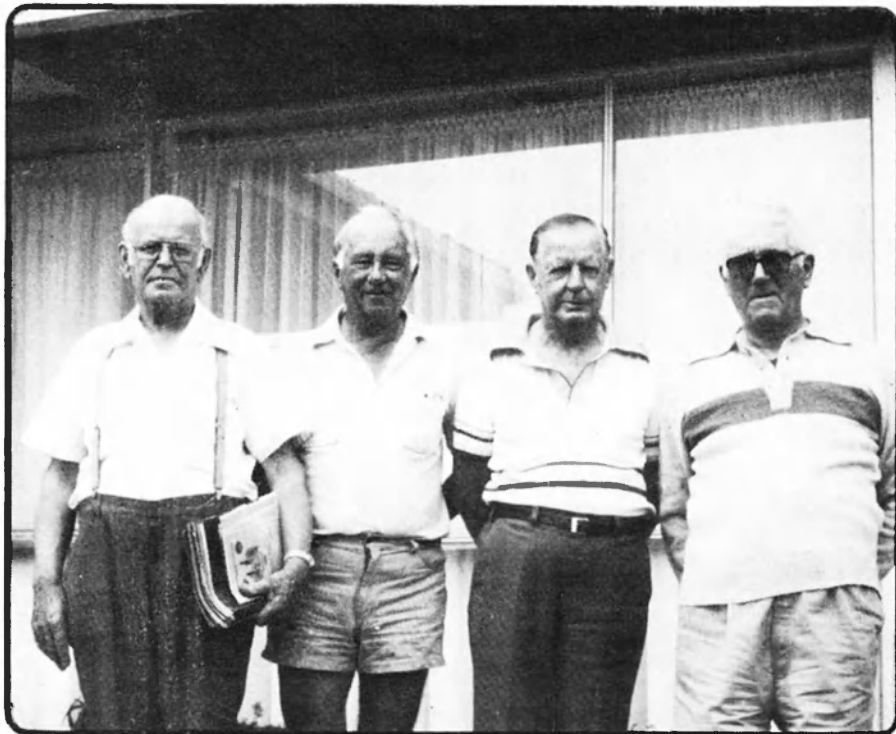
The Ceduna Police, S.A.

The Amateur Radio Service Emergency Net on 7.060 MHz with VK5AI, VK5DW, VK5WK.

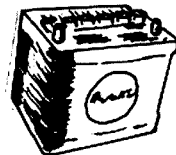
The VK6 Travellers Net on 14.106 MHz which is always there with Keith VK6KC, Art VK6ART, Tom VK6TB, Ken VK3PN, Doug VK3YK.

The Royal Flying Doctor Service. (In case I needed them.)

Acknowledgements: Photo of Daisy Bates, CBE, courtesy Douglas Glass, Adelaide.



New Amps from Old Batteries



Dick Goslin VK3SV
40 Hardwicke St., Balwyn 3103

Why trade in your worn-out (?) car battery for a couple of dollars when with a little effort and the availability of a charger it can provide a useful DC power supply in the shack for several more years.

Before attempting this procedure, adequate protective clothing, safety goggles or face shield and rubber gloves should be worn and all work should be carried out in the open air — with a bucket of water in close proximity in case of accidents.

The method described below kept many private cars on the road when replacement batteries were unobtainable during World War II. Providing the car was started with the crank-handle (no toolkit complete without one!), the "rejuvenated" battery would supply sufficient current for ignition, lights horn, etc.

The main cause of deterioration and eventual failure of a lead-acid battery is vibration, which results in some of the lead oxide paste being dislodged from the plates and settling on the bottom of the case. The battery's amp-hour capacity gradually diminishes until it can no longer supply the high current required by a starter motor. If sufficient paste is dislodged to reach the bottom of the plates, then a cell (or cells) will be internally short-circuited. Either of these conditions will make the battery useless for car starting.

But if the short-circuit or dead paste is removed, the battery can still provide adequate current for radio and other needs, especially in a situation where there is no vibration to dislodge further amounts of paste. Most batteries are in fact traded before reaching the short-circuit stage, and it is therefore recommended that the entire battery be "given the treatment" rather than deal with only a particular cell which may be suspect.

If possible, obtain some battery acid of 1.290-1.300 specific gravity from a sulphuric acid manufacturer or their agents as the job will be more satisfactory if fresh electrolyte is used (about 2.0-2.5 litres for a 12V 9 plate battery). This slightly higher-than-normal SG will also compensate for the dilution caused by retention of water during the washing-out process. Also obtain some distilled water from the same source. The old electrolyte may be re-used (see later), and tap water used for washing out the cells but these may introduce suspended and dissolved contaminants which the recommended method will avoid.

Now to the job itself: —

(1) With cell plugs removed and electrolyte at the correct level, charge the battery fully which will minimise any further fall-out of paste during the wash-out. Continue charging for 1½-2 hours, rocking the bat-

tery from end to end at intervals so that the paste previously shed will be dispersed through the electrolyte by the combined action of "gassing" and rocking.

(2) After removing charger leads, pour the electrolyte into a plastic bucket or large glass jar. The latter is preferable if the electrolyte is to be used again as it enables the settling of solid matter to be easily seen.

(3) Partially fill the battery with distilled water (or tap water), shake, and pour into a second bucket. Repeat once or twice when the amount of suspended matter coming away with the water should be RELATIVELY small. Do not try to get out the "last little bit" as excessive washing may result in low specific gravity when the battery is recharged.

(4) Fill the battery to the correct level with fresh acid and charge to the gassing stage. If the old electrolyte has to be used first decant the clear liquid into a second glass jar so that as little as possible of the solid matter is re-introduced into the battery.

Carry out the work in the open air and protect the eyes with safety goggles or a face shield. A bucket of water should be kept handy so that any splashes onto skin or clothing may be quickly washed off.

Waste material from the battery should be thoroughly neutralised with a mild alkali such as baking soda or Limil, then poured into a hole in the garden and covered with soil.

The writer has for several years used a "rejuvenated" battery to supply up to 10 amps to an old carphone, plus other 12V DC requirements. Battery and charger are side by side on a layer of bricks outside the shack with a timber canopy for weather protection. Old welding leads brought through the wall are terminated at a polarity socket with a voltmeter across it. 240V AC to the charger goes via a switch and neon indicator above the bench.

FOOTNOTE: The trade-in offered for battery replacement is actually the "scrap" value of the lead plates for melting down. A battery from which the last amp. has been extracted will have the same value as when it became unsuitable for car use. ■

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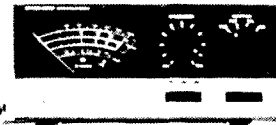
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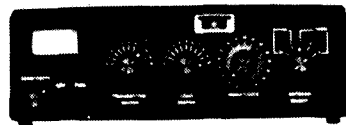


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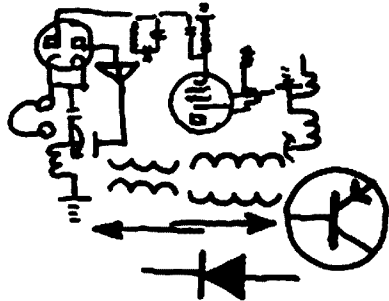
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The VK3ABP Two Metre Converter (1982 Model)

W. M. Rice VK3ABP
54 Maidstone Street, Altona 3018



In November 1962 an article was published in AR describing a simple 2-metre converter using three valves. It became the best-known device of its kind in Australia, and enabled many enthusiasts to hear for the first time the activity on 2, mostly then AM phone.

Although hundreds of these converters were built, time has passed and times have changed. Electron tube technology has been largely superseded. To the present generation of amateurs valves are akin to the swords of the Crusaders, and only slightly more recent. But there is still activity on 2. These days it's FM repeaters, FM simplex, AFSK RTTY, SSB, CW, DX, SSTV, satellites, NBVM, moonbounce, you name it! And you can still receive all this (perhaps excepting moonbounce) on a simple converter into the appropriate receiver.

The time has come for a new 3ABP 2-metre converter. As simple (or simpler) to build, but taking advantage of newer techniques. Not really state-of-the-art; that would imply all on one chip too small to see; but smaller, much more economical of power, and of better performance than its 20 year old ancestor.

PRINTED CIRCUIT

The old converter was on a chassis about 115 mm x 75; the new is on a single-sided circuit board 71 mm x 41, for which the full-size artwork is reproduced in Fig. 1. Component placement is given in Fig. 2, and the circuit in Fig. 3. One of the design considerations was that there should be no unusual components. With this in mind the board was laid out to

accommodate 1/2-watt resistors, the common 1/2-inch square Neosid coil cans (2 used), and a style-D (HC-6/U) crystal can. If special miniature components were used the size could be reduced to about that of a matchbox; but must a converter barely be larger than its antenna connector?

Electrically, the circuit bears some resemblance to its parent. It still uses the arrangement of 3 coils in line, with mixer input sandwiched between RF and oscillator output, signal and oscillator both thereby being inductively coupled to the mixer. But the RF stage is now a dual-gate FET, mixer is a junction FET, and oscillator output at 120 or 130 MHz is derived from a 40,000 or 43,333 MHz 3rd-overtone crystal-oscillator/tripler in one bipolar transistor. Total power consumption is about 10 mA at 12V, i.e. 120 mW. The hungry old valves needed 8 watts just to light their heaters, and then about 6 watts of plate supply. Did someone mention dinosaurs or dodos?

ETCHING THE BOARD

Those who are fortunate enough to have access to the requisite photographic equipment will photograph Fig. 1 full-size, produce a negative (i.e. tracks clear), and use it to expose a board coated with photo-resist, which can then be etched to remove the unexposed copper. But, particularly for a one-off job, there is another way. Photocopy the artwork and stick the copy to the surface of a piece of single-sided copper-coated laminate. Use the copy as a template to drill all the holes. Remove the template, clean the copper with steel wool, and use the holes as a guide to draw the resist pattern on to the copper with a fine felt-tip pen. Pens which

use an acetone-based ink are preferable. If in doubt, try the pen on a test piece to see if it resists the etchant. The inked board will not be as pretty as a photographic job, edges may be a little furry or shaky and track widths less uniform, but what matter? Trim them if necessary with a sharp blade, scraping away surplus ink when fully dry. The board may now be etched in the usual ferric chloride solution, agitating it gently as the copper dissolves. Stop as soon as all unwanted copper has disappeared, wash and dry. The board shown in the photographs was made this way.

DRILLING

Apart from the holes for component pig-tails (No. 65, 0.9 mm, 0.035 in.) there are three larger holes in the board which may be recognised by the two keyways in their circumference. These are drilled to slightly less than the minimum base diameter of a Neosid former, then carefully open out with a round file (and a rat-tail or Abrafile for the keyways) until the Neosid formers are a snug fit. The three formers may now be glued in place, on the non-copper side of the board, using epoxy cement. Check before the glue sets that the slugs are aligned with the holes in the can tops (except oscillator L5, no can) by fitting the cans temporarily. The slugs must be able to turn freely through the holes in the cans.

The components may now be mounted and soldered in. One resistor (the 1500 ohm in the mixer source) is mounted vertically, with its top pigtail bent through 180 degrees and passed through the appropriate hole to the ground plane. All other resistors are mounted parallel to the

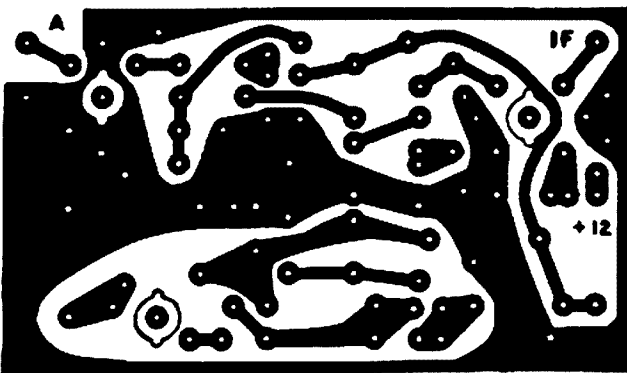
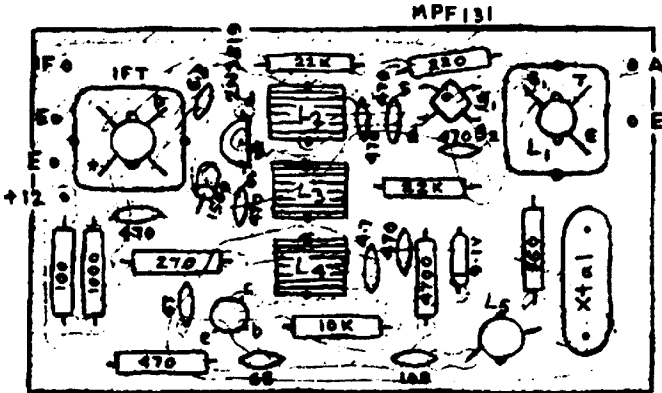


FIG. 1: PCB Artwork



2N2563
FIG. 2: Component Placement

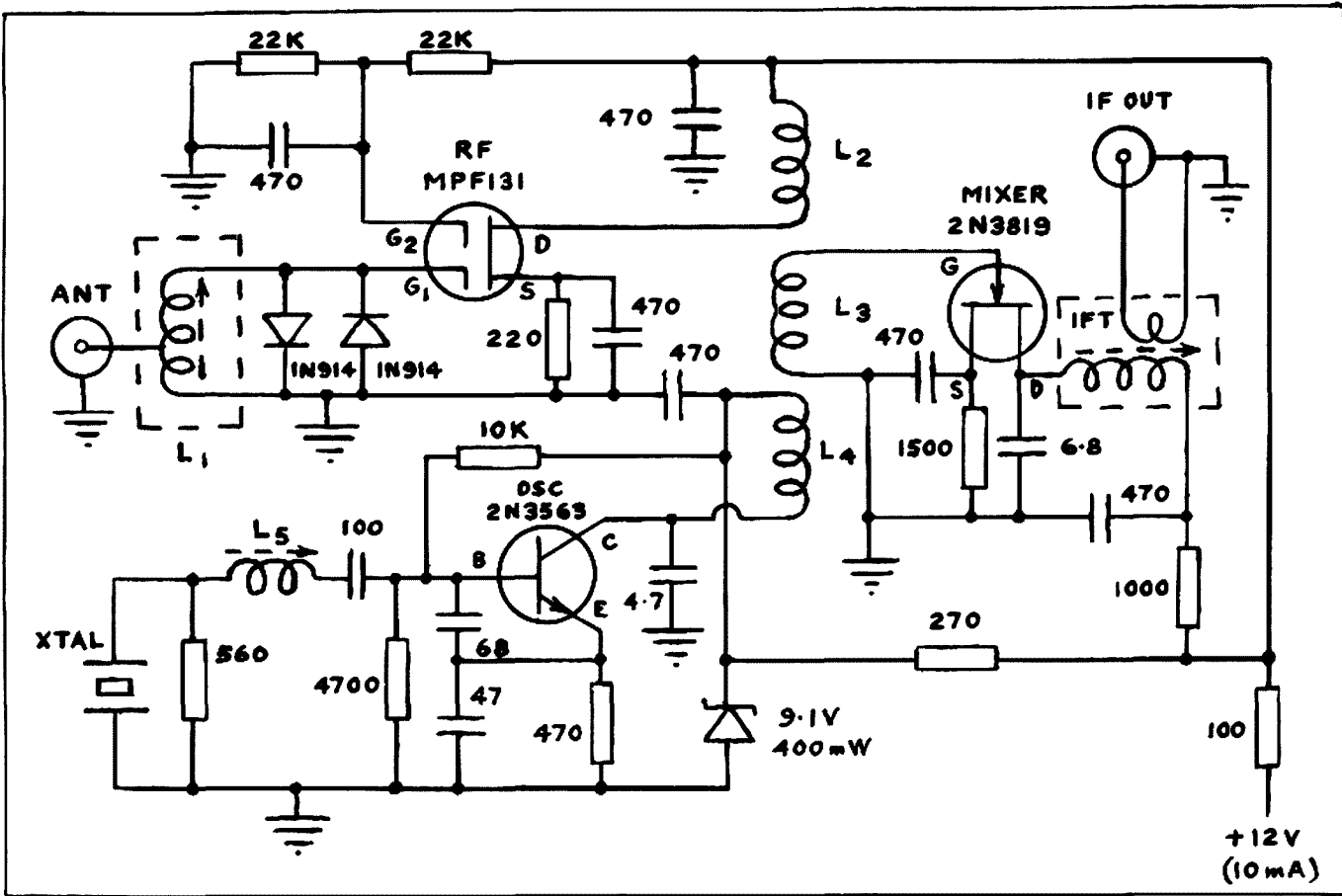


FIG. 3: Converter Circuit

board, their pigtailed being bent neatly at right angles close to the ends so that they are spaced by 1/2 inch (12.7 mm).

The holes for the crystal pins are drilled to clear (No. 60, 1 mm, 0.040 in. minimum) and the pins may either be soldered in, or small spring contacts soldered to the board to permit crystal changing if desired. Of course, a smaller solder-in type crystal may be used if available; the leads will need to be splayed out somewhat.

ALL ELEVEN CAPACITORS MUST BE DISC OR BEAD TYPE CERAMICS. The 6 470 pF items are the usual Hi-K bypass type, but the remaining 5 needs to be more stable. These are the 100, 68, 47 and 4.7 pF in the oscillator circuit and the 6.8 pF in the mixer drain. They should have temperature coefficients of no more than N750. N470 or N220 would be better, but since the dielectric constant (K) of ceramic mixes becomes less as their negative TC is reduced, a given capacitance needs more volume in lower TC grades. A 100 pF NPO (zero coefficient) would be impossible to fit, being about 20 mm diameter. Incidentally, the TC of Hi-K ceramics is usually more than 2000 parts per million per degree C.

There should be no problems with the remaining components, except possibly the input protection diodes. These are most simply located on the underside of the Board, although cunning constructors may

be able to fit them inside the can of L1.

COILS

Winding data for the five coils and the IF transformer is shown in the table. All coils are close-wound. It is recommended that L1 and L5 be pre-wound on a suitable diameter drill or other mandrel so that when they uncoil slightly after winding they will be a snug fit on the Neosid formers. A No. 14 drill (0.182 in., 4.6 mm) is best. The coil may need to be sprung open a little further to slide over the former and when released will lock in place. Leads can be bent and tinned so as to drop into the appropriate holes in the board. The tap on L1 is made before winding, by twisting a small one-turn loop in the wire and tinning it. After the two end connections are soldered in the tap is connected to the board with a piece of scrap resistor pigtail.

This pre-winding technique is not appropriate for the IF transformer because the wire is too fine, but winding direct on to the mounted former is quite simple. Use a dab of quick-setting glue or a little melted beeswax to hold the winding in place. The 3-turn secondary is wound over the "earthy" end of the primary in the same way, perhaps with a layer of cellulose tape between the windings, although this is unnecessary with tough enamel wire. (All windings must, of course, use enamelled wire.)

The remaining 3 coils are simply pre-wound on appropriate mandrels, eg drills of 5/16 inch for 8 mm and 1/4 inch for 7 mm. Their end leads are bent out radially and tinned so that the three coils will line-up on the board on a common axis parallel to the surface.

TRANSISTORS

Many alternative devices may be used in lieu of those specified. The RF stage could be a 3N210, or the wire-lead 40673. Some of the Japanese 2SK types will also suit. Leads on the MPP131 and 3N210, which resemble four-legged spiders, need to be bent at right angles to enter the holes in the board. The top surface of these devices has a small indentation to identify the source connection.

Unfortunately there is a wide variety of pin layouts among the Junction FET's which may serve as a mixer. The TIS58, TIS59, TIS88 and 2N5248 have the same connections as the 2N3819, but the MPP102 which also works well has the drain at the opposite end and source rather than gate in the centre. It can be used by rotating thorough 180 degrees, ie flat side towards IF can, and then crossing over the two leads nearer the centre of the board (source and gate), ensuring by careful bending that they do not touch each other. The same remarks apply to the 2N5245.



PHOTO 1: Showing Underside

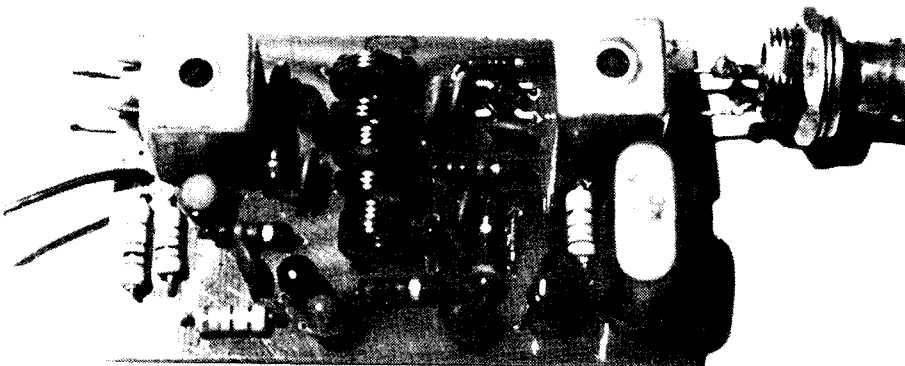


PHOTO 2: Top View

COIL TABLE

L1	6½ turns on 5 mm Neosid, tapped at 1¼ turns	
L2	6 " " 8 mm ID, self-supporting	} In-line, spaced approx. 1 mm
L3	6 " " " "	
L4	5 " " 7 mm ID, " "	
L5	9½ " " 5 mm Neosid	
IFT	43 " " " 3 turn secondary	
Wire, enamelled copper, gauges as follows:		
L1 to L4	22 SWG, 20 B&S, 0.028 inch, 0.7 mm	
L5	28 SWG, 26 B&S, 0.015 inch, 0.38 mm	
IFT	39 SWG, 36 B&S, 0.005 inch, 0.13 mm	
All windings are close-wound.		

The bipolar transistor which functions as oscillator/tripler may be chosen from many possible types besides the 2N3563 or PN3563. Most small NPN types with f_T greater than about 400 MHz will work, for example 2N706, 2N2369, 2SC763, 2SC1687, BF180, BFX89 and BFY90. But beware—not all the devices listed have the same base connections, so check carefully with the appropriate data book.

CRYSTAL AND INTERMEDIATE FREQUENCIES

Mention was made earlier of oscillator frequencies of 120 or 130 MHz, derived from crystals of 40.000 or 43.333 MHz. These are preferred, since the IF for 144-148 MHz then becomes 24-28 or 14-18 MHz respectively, so that the integral megahertz (4, 5, 6 or 7) and decimal thereof may be read directly from the receiver calibration.

If desired, the oscillator could be on 140 MHz to give an IF of 4-8 MHz, the crystal frequency then being 46.667 MHz. Such a low IF does, however, introduce image response problems from signals between 132 and 136 MHz (in the aeronautical band), and also the specified IF transformer will not tune low enough. It could be shunted with additional capacitance (about 150 pF) but would then need to be retuned from one part of the band to another. The transformer as described tunes from about 16 to 24 MHz by adjustment of its slug, and is reasonably broad in its response. However, if optimum performance is needed at 144 MHz with a 14-18 MHz IF the 6.8 pF capacitor may be changed to 10 pF. Conversely, if the IF is 24-28 MHz and the high end is where interest mainly lies the capacitor may be reduced to 3.9 pF.

ALIGNMENT

Several people have already constructed these converters, and found that 2-metre signals have been tunable as soon as power was applied. It may be found that the slug in L5 needs adjustment to ensure reliable oscillator starting. It also has a slight effect (only a few kHz) on the frequency. Having found the local beacon or repeater, the antenna coil L1 and the IF transformer may also be adjusted. Neither tunes sharply, but a peak should be detectable.

The three air-cored coils L2, L3 and L4 will probably be found to need slight reduction of their inductances. This is achieved by "knifing" the coil into two parts which are spread apart slowly with a non-metallic blade while watching for a peak in the received signal. The adjustment of L4 (multiplier output) should hold good for all signal frequencies, but L2 and L3 should ideally behave as an overcoupled bandpass pair. Only the purists will insist on a symmetrical double-humped response with peaks at about 145 and 147. The average user will be content with something approaching a peak around his main frequency of interest!

If sweep and/or signal generators of adequate quality are available, a little time spent in careful alignment could be rewarding, but it is by no means essential. Even the author has not investigated the performance this deeply (yet!). There should be few complaints about sensitivity. Such measurements as have been done suggest that in conjunction with a reasonably good HF receiver having an FM detector, a converter input of 0.1 microvolt should produce substantial quieting. It seems probable that the noise figure should be better than about 3 dB. In other words, for an outlay of about \$20 and a few hours' work you should have no trouble in hearing what's doing on Two! ■

CALL SIGNS

Attention of members is again drawn to the habit of omitting the prefix "YK" when announcing call signs. This is particularly noticeable in the case of phone operation.

Such practice is not in accordance with International requirements and contravenes the Wireless Telegraphy Act. Operators should be careful that they use the full call sign allotted to the station concerned.

- This appeared in AR August 1955 and is again necessary as a reminder.
- Remember that during a "session" of short to and fro transmissions it is only necessary to announce call signs at the beginning of the "session" and not less than every 10 minutes thereafter
- — and this applies equally to contacts through the repeater.
- Separate concessions apply only in respect of WICEN communications.



VK4 Old-Timers Get-Together

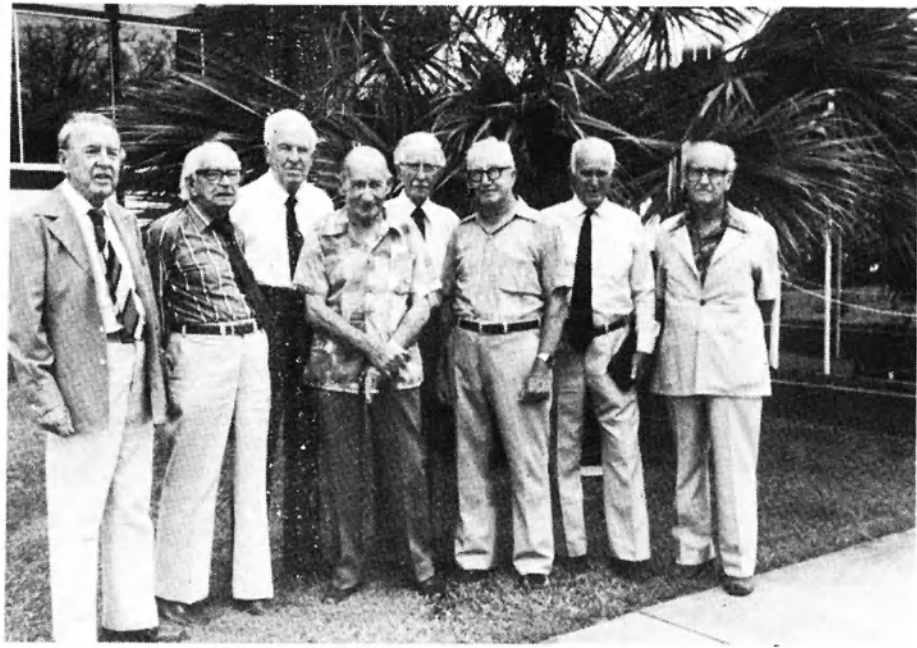
On 24th February, 1982, at Southport RSL Club, there was a "get-together" of OLD-TIMERS whose aggregate ages would exceed 600 years. All were licensed before 1930 (with the exception of VK4FE).

Those in attendance were Perc. Wood, ex-4RO from Ipswich in 1930; Fred Matthews, OBE, ex-4FK, Brisbane, 1924; Col Grant, ex-4JG, Brisbane, 1930; Arthur Burton, VK4FE, licensed in 1937; Leo Feenaghty, ex-4LJ, Brisbane, in 1930; Arthur Walz, VK4AW, ex-4AW, Brisbane, 1926; Vern Kenna VK2JR, ex-4FK, Brisbane, 1930; and Cliff Gold VK4CG, ex-4CG, Brisbane, 1926.

All had a marvellous time and for those that were unable to attend there will be another opportunity in May.

PHOTO (l. to r.): Perc Wood, Fred Matthews, Col Grant, Arthur Burton, Leo Feenaghty, Arthur Walz, Vern Kenna and Cliff Gold.

Photograph, notes and meeting arranged by Peter VK4PJ.



Left to right: Perc Wood, Fred Matthews, Col Grant, Arthur Burton, Leo Feenaghty, Arthur Walz, Vern Kenna and Cliff Gold.

THE NATIONAL EMC ADVISORY SERVICE

Would like to remind all Amateurs of the importance of keeping a very accurate and very detailed record of all occurrences, no matter how small, in any cases of interference in which they are involved. The importance is emphasised if there are difficult third parties or legal involvement.

Well . . . I Can Dream, Can't I? by Bandel Linn K4PP

"We've discovered a new high-speed way to learn the code! This shot will make you a 25-word-per-minute man immediately!"

From 73, December 1981

CHIRNSIDE ANTENNAS

Why not step up to a high performance Duo-band Yagi, the CE-42, 10-15M.

Solid construction. 8.5 DB gain, 25 DB F/B ratio. Electric band switching means only 1 run of coax is required! This alone could save you up to \$50 (not to mention the cost of an additional coax switch) . . . The use of traps combined with independant reflectors provide top DX performance for the DX enthusiast . . . Excellent value for only \$149.

Only one feedline required.

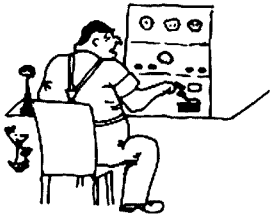
Still only \$149

The CE-52 is also available, which is the same as the CE-42 but on a longer boom and an extra director on 10-15M. Gain 9.5 DB . . . Very good value at only \$195.

Electrical Specifications			
Gain	8.5DB	F/B ratio	25DB
Power handling . . .	2KW PEP	Impedance 50 ohm (at resonance)	
Element Configuration.		Longest element	7.4M
3 elements on 15M.		Boom length	4M
3 elements on 10M.		Wind survival	150K.M.H

Chirnside Antennas are available from various interstate dealers.

Chirnside Electronics Pty Ltd.
26 Edwards Road, Chirnside Park, Lilydale 3116. Phone (03) 726 7353



NOVICE NOTES

Edited by Ron Cook VK3AFW
7 Dallas Ave., Oakleigh 3166

The Dip Meter

After the multimeter the most useful test instrument for the amateur is, arguably, the dip meter or dip oscillator. Back in the days when valves were the only means of rf amplification these instruments were called grid-dip oscillators (GDOs).

A dip meter is an oscillator with a moving pointer meter to monitor the level of oscillation. It covers a wide range of frequencies, say 1.5 to 150 MHz, in one instrument and is equipped with plug-in coils. There is a tuning capacitor to vary the frequency in each of the overlapping ranges and a calibrated scale for reading the frequency. Most instruments have other features which will be discussed later. Essentially the dip meter measures resonant frequency, a most useful attribute as we shall see.

Fig. 1 shows a circuit of a simple dip meter based on that described in the 1977 edition of the ARRL's "Radio Amateur's handbook". A different circuit along with full construction details is given in the RSGB's "Test Equipment for the Radio Amateur".

The circuit in Fig. 1 uses a FET transistor oscillator and measures relative oscillation level by passing part of the gate current through the meter M. The

plug-in inductors extend beyond the body of the dip oscillator and so can be inductively coupled to a tuned circuit as shown in Fig. 2a. The circuit is, of course, our old friend the Colpitts oscillator.

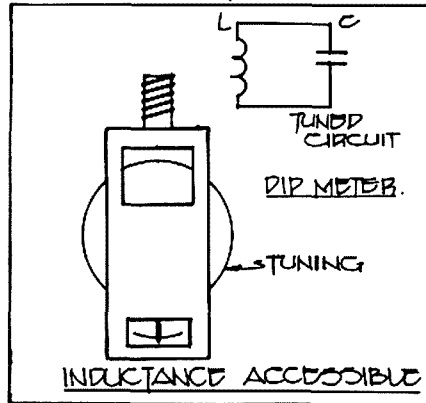


FIG. 2A: Measuring resonant frequency of tuned circuits.

To use the dip meter (DO) select a likely coil and adjust the sensitivity control to give half to three-quarter deflection of M. The DO's inductor is brought within two coil diameters of the test circuit's inductor and C1 tuned over its whole range. If no dip in the meter's deflection is seen

try other coils until the right range is found. Move the DO away from the test coil while rocking C1 back and forth across the dip frequency. When the tip has reduced to only a few needle thicknesses on M set C1 to the centre of the dip and read the operating frequency from the scale. This is the resonant frequency of the circuit under test.

The dip occurs because the test circuit extracts energy from the oscillator most effectively at its resonance. The depth and narrowness of the dip are a measure of the Q of the test circuit. A broad shallow dip indicates a low Q.

APPLICATIONS

1. TESTING TUNED CIRCUITS

Tuned circuits using an inductor which is accessible are tested as described above and as illustrated in Fig. 2a. Often the inductor will be screened by a metal can so mutual inductive coupling cannot be used. The small capacitor C in Fig. 1 allows a probe and ground clip connection to give loose capacitive coupling to screened coils as shown in Fig. 2b. The size of C is a compromise for the HF region but gives too much coupling at VHF, making the dip too deep and broad by pulling the oscillator frequency. Removing the earth clip sometimes helps in such cases.

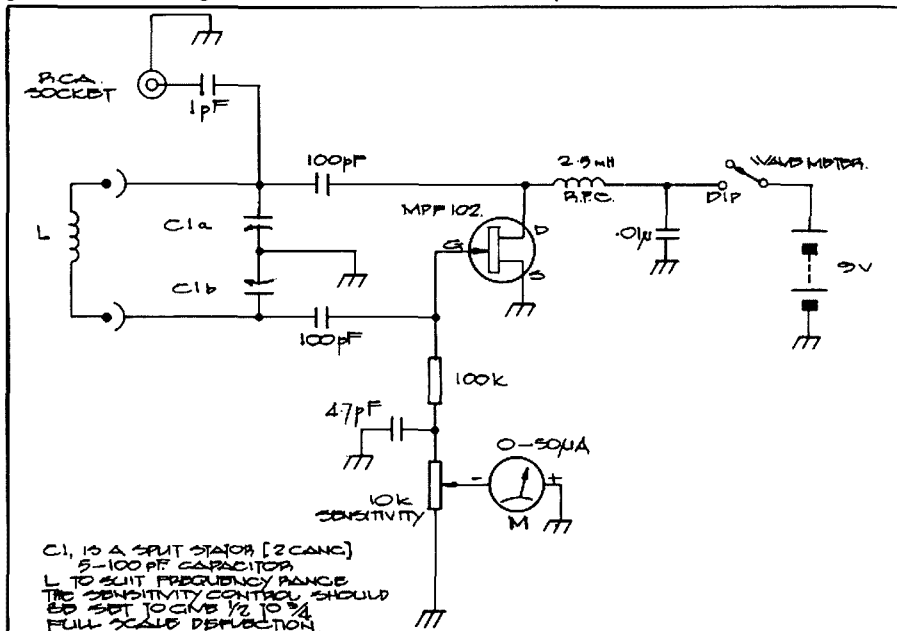


FIG. 1: Dip Meter Circuit

C1 is a SPLIT STATOR [2 GANG]
5-100PF CAPACITOR
L TO SUIT FREQUENCY RANGE
THE SENSITIVITY CONTROL SHOULD
BE SET TO GIVE 1/2 TO 3/4
FULL SCALE DEFLECTION

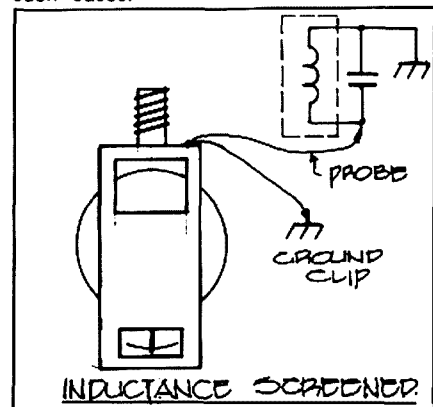


FIG. 2B: Measuring resonant frequency of tuned circuits.

Unknown IF frequencies can nearly always be established without surgery on the equipment if a DO is available. Receivers, transmitters and ATU's can be approximately aligned for first-time operation of variable tuning estimated—a considerable help to the home-brewer.

2. ANTENNA TESTING

The resonant frequency of an antenna can readily be established even if it is well outside the band. Also there is no necessity to run the rig into a high VSWR and risk damage to say nothing of annoying other band users. Fig. 3 shows how a mobile whip installation can be tested. Dipoles, yagis, verticals and their radials can all be tested in this way. When testing a beam the elements should be tested individually as *inter-element coupling* may give erroneous results. Usually it is sufficient to resonate the dipole being driven and cut the reflector and directors according to directions.

3. CAPACITOR SELF-RESONANCE

The usual ceramic by-pass capacitor can cause a problem at VHF because of the series inductance of the leads. A bypass capacitor is not effective if it has appreciable series inductance, hence the obsession for short leads in VHF gear. If the lead length is adjusted to give series resonance of the capacitor and its leads then very effective bypassing is achieved

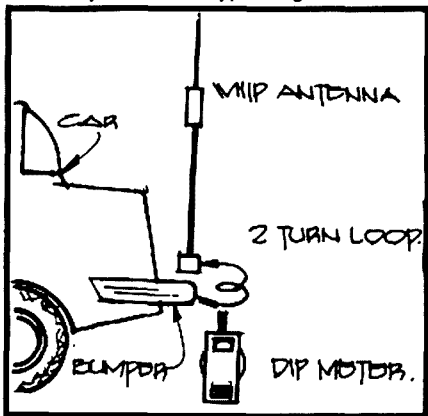


FIG. 3: Measuring resonant frequency of an antenna.

at that resonant frequency. The leads may be bent to form a closed loop or soldered to a piece of thin brass sheet or unetched pcb material to form a half loop. The resonance is found as for a tuned circuit.

The self resonance of RFC's and other inductors can be found by measuring the dip frequency when they are not connected to any other component.

4. CRYSTAL CHECKING

If a crystal is plugged into the DO instead of one of its coils then a good crystal will oscillate and give a deflection on the meter. C1 may need setting to its minimum value. The crystal will oscillate on its fundamental parallel mode frequency. Thus a 27.000 MHz crystal will oscillate around but not exactly at 9.000 MHz. Some crystals cut for low frequencies will not oscillate in the circuit used by the DO.

5. SIGNAL AND TEST OSCILLATOR

The DO may be used as a signal source with either its own plug-in coils or a crystal. Some DO's are equipped with an inbuilt tone oscillator and modulator to produce a modulated signal that is easy to identify and helpful for tuning-up AM receivers.

To tune-up a receiver the DO is set to the required frequency and a short piece of wire attached to the receiver. The DO frequency may need adjusting as the dial does not allow very accurate setting. Adjustments can be made to the cores and trimmers of the IF and rf stages for maximum signal strength. Refer to the receiver's manual for a detailed procedure.

6. ANTENNA PATTERN TESTING

If a DO is placed some distance from the antenna an estimate of the radiation pattern can be obtained by recording the "S" meter reading as the antenna is rotated. A small whip may need to be connected to C1.

7. CW PRACTICE OSCILLATOR

If the DO has a key socket it may be keyed on and off and the modulated signal monitored on a AM receiver. If you have an SSB only receiver then a crystal should be used in the DO and the modulation turned off. If a crystal is not used then keying chirp may be excessive.

8. MARKER OSCILLATOR

If you have a suitable crystal it may be used in the DO to provide marker or calibration signals say every MHz. The frequency may be accurately set against VNG or WWV by adjusting C1. Even if a crystal is not available the plug-in coils can be used to give marker frequencies but they will be inclined to drift and would need checking before each use.

9. MEASURING REACTANCE

(a) Capacitance.

If you have a known inductor (a useful value is 5 uH) then a range of unknown capacitors can be measured. The capacitor is placed in parallel with the inductance and the resonant frequency of the combination measured. The unknown capacitor is calculated from the formula:

$$C = 25,330 / (f_s \times L)$$

where f is in MHz

L is in uH

C is in pF

(b) Inductance.

A standard capacitor (100 pF is a useful value) is used in parallel with the unknown inductor. The formula to be used is:

$$L = 25,300 / (f_s \times C)$$

where the same units are used as before.

An accuracy of around 10% may be obtained with care. It is useful to remember that an inductance measured at 1 kHz will have a different apparent inductance as its self resonant frequency is approached.

10. TUNING TRAPS

Resonant traps are used to make an antenna operate on more than one frequency or to "cure" TVI. In the latter case resonant traps tuned to the transmitting frequency, or a harmonic, are used. The DO may be used to help adjust the traps to the required resonant frequency.

11. ABSORPTION METER

If the oscillator is turned off the DO can be used as an absorption wavemeter. Bringing the DO coil close to an oscillator, or an amplifier with CW excitation, and

tuning C1 will allow the fundamental and harmonic signals to be detected. If the sensitivity control is adjusted to give full deflection on the fundamental then the relative strength of harmonics and other signals may be estimated. The transistor will rectify the signal absorbed by the DO circuit and drive the meter up scale. The DO can be very useful for checking that the generated signal, say from a transmitter, is on the right frequency. On 432 MHz, for example, instead of producing $404 + 28 = 432$ MHz incorrect tuning may give $404 - 28 = 376$ MHz.

An absorption meter may also be used as a tune-up monitor. Some DO's are equipped with an earpiece to enable AM signals to be monitored. (In theory SSB can be monitored if the DO is oscillating but in practice this is rarely achievable to any satisfactory degree.)

If a short whip is added to the DO it can be used as a field strength meter when in the absorption mode.

In all these applications the instrument is tuned until a peak of the meter is reached. Coupling and sensitivity are adjusted to give convenient indications commensurate with light coupling.

IMPROVED ACCURACY

Improved frequency accuracy can most easily be obtained by using a general coverage receiver such as the FRG7, R1000, etc., to measure the dip frequency. In some cases a digital frequency meter may be connected to C to provide a very accurate frequency reading.

So there we have some of the uses of a DO. If you intend to build your own you will need a set of plug-in coil formers. Each coil should give a good 10% overlap of the adjacent coil/s. The DO must not have any internal resonances otherwise it will not be possible to tune each range (without any external resonant device near) without any sudden change in meter level. A gradual drop as the frequency is increased is normal.

Although a range of 0.7 to 250 MHz is possible in one instrument a simple circuit such as given here is probably only capable of covering 1.5 to 50 MHz, a still considerable range. Even with very careful layout and special components operation above 600 MHz is not practical for this type of DO. The coils are too small. Transmission line and cavity resonators are used in equipments for these and higher frequencies.

Special DOs could, of course, be made. ■

* * * *

WINDSCREENS

You must have all noticed that film that develops on the inside of your car's windscreen and makes vision difficult when driving into the sun.

It has been proved to be caused by the evaporation of a plasticiser from the vinyl seat covers.

A mixture of metho, detergent and water is advised as the best agent to get rid of it.



VHF UHF - an expanding world

Eric Jamieson VK5LP
1 Quinns Road, Forrester, S.A. 5233

SIX METRES

Seems to me the general opinion is that in the southern areas, and VK5 in particular, six metres was rather quiet during March. There were a number of openings to JA of course, often only there with the assistance of some Es at the same time. We did hear that Steve VK3OT around 1/3 had worked VK8GB at least and some JA's whilst on his DX-pedition to the Cocos Islands; no more details at the moment.

3/3: 0100Z JA (the A index being 70 at the time), and more JA around 1330Z which is rather late. Col VK5RO must have been feeling very fit as he worked 48 of them! All areas JA1 to 0 worked. Also noted VK2 and VK4 very strong in JA. Report of KG6DX working Greece. 6/3: 1254Z JA1, 2, 7. 20/3: ZD8TC Ted on Ascension Island working VK4PU, VK8GB and possibly others around 0100Z. Ted running 10 watts. About the same time Jerry ZD7BW on St. Helena, running 3 watts, being worked. Good effort chaps, heard Tom VK2DDG also having a go. Around same time a report came through from the Bahamas that VK2DDG and a VK5 had been heard there! Reports indicate C6ADB transmits on 50.010 and listens on 52.010.

21/3: JA7 and 8 0240Z. 25/3: Report of YV5. Also noted Graham VK8GB has been working JA's on 2 metres so apparently such conditions still exist to there similar to previous years. Noted also that Christmas Island in the Line Islands Group in the Pacific has C32AB on 6 metres, so he would be well worth working. On this day also JA's were in and out at odd moments throughout the day, with Russian TV on 48.750 strong.

Es contacts to VK2 and VK4 being made at various times during the month and for this reason the general increase in JA contacts. JA1, 2, 8 and 0 were noted on 21/3 very strong on 50 MHz with signals spread over at least 300 kHz of the band, and some speaking in English up around 50.250 which is unusual. Hadn't heard it for some time, but JA2IGY was observed on 21/3 with quite good signals on 50.008, thus confirming it is on and on frequency. Thanks to John VK5ZBU and Bob VK5ZRO for filling in the blanks in my own observations.

SIX METRE STANDINGS

It seems the suggestion to run a Standings Box from time to time on countries worked and confirmed is meeting with some interest from various operators, and a number have already been received, plus several have since written with upgradings. I hope to have the first list in the June issue and probably upgrade each six months. Appropriate report forms are available from me

for a s.a.s.e. and these will help you to provide the information necessary so everyone can be on an equal footing during reporting. I am still looking at what can be done for two metres and maybe something can be done for this band in between the six metre periods.

LETTERS

Gil VK3AU reports having had a reasonable Es season, with a number of ZL openings, plus H44PT and Japan. It seems quite a few contacts were available in Melbourne after the New Year rather than before! Despite the krud from Ch. 0, on 2/1 ZL, VK2, VK4 were worked. 3/1: ZL. 4/1: ZL, VK1, VK2. 6/1: VK2, VK4, VK6 and VK8GF. 7/1: VK5, VK7. 11/1: P29SIX 0815 to 1030Z, VK4. 12/1: VK2. 13/1: VK6. 21/1: H44PT. 22/1: H44PT. 24/1: VK4. 31/1: P29SIX. 1/2: JAB, P29SIX. 4/2: H44PT heard, also ZL. 11/2: JA, VK8GF. 19/2: VK4. 20/2: VK4, JA1, 2, 3, 4, 5 and 6. Gil tried phoning while the P29 beacon was in but could only raise a recorded voice so that didn't help very much.

Gil reports receiving several JA cards decorated with WAC's and with lists of countries worked and pictures of piles of rare countries QSL cards on six. Quite mouth watering!

As a diversion between Christmas and New Year Gil operated from a power boat on the Murray River on 2 metres in a WICEN net, and to add some spice to life took along an IC502 with 20 watt linear and halo antenna. Between net traffic he worked some excellent short skip with VK2, 3, 4, 5 and 7, and heard but didn't work VK8, VK6 and VK1. He reports it's a bit hard to crack a dogpile with less than 20 watts e.r.p.! However, he didn't consider the results too bad for an antenna only 3 metres off the water and often with 3 to 6 metre high river banks above. Also, having to contend with an outboard motor producing 20 over S9 noise all the time! The noise blanker was useful

BEACONS

Gil VK3AU also mentions the Melbourne 2 metre beacon is off the air at present pending a relocation. The original tower is being moved from one suburban location to another and it is expected the beacon will be located again on the tower, and probably with a frequency shift to conform with the 2 metre band plan. It is also understood VK3RGG, the Geelong 6 metre beacon, is presently off the air.

S.E.R.G. CONVENTION

The 18th Annual Convention of the South-East Radio Group in Mt. Gambier will be held over the Queen's Birthday holiday weekend of June 12-13-14th. The Convention Committee is looking to add some new events with probably more activity on the

Saturday as well.

This is a well attended Convention with a keenly contested test of strength between the South Australian amateurs and those from Victoria, and skill and fun combine to make it a pleasant weekend outing.

Also interesting to note that the S.E.R.G. will be 25 years old in 1986, the year of South Australia's 150th Anniversary Celebrations, and it is proposed to register that fact with the State Committee, so maybe the 1986 S.E.R.G. Convention will be quite a memorable one!

The S.E.R.G. Hook-up is held every Monday night at 8 p.m. local time (1030Z) on 3585 kHz with VK5SR and at the same time on 2 metres on VK5RMG/CH. 6 (Ch. 6900). Anyone able to make contact is welcome to call in.

HOW EASY CAN IT GET?

We who live in the Southern Hemisphere have known for a long time how disadvantaged we are when it comes to outstanding DX contacts on six metres, and the following snippet doesn't help to change that opinion!

Ken Willis, G8VR in Kent, caught the high MUF conditions on 14/11/81 and worked several VE and East Coast W stations crossband using a 4 metre (frequency, not length) beam for 6 metre reception and an indoor 10 metre dipole for transmission. The FY7THF beacon was 9-plus for several hours on 12/11 and another, signing DL3MZ/YV5 was also strong for long periods. . . . Makes you wonder where it will all end! . . . Thanks to "The Short Wave Magazine" and Steve VK5AIM.

NEWS FROM THE WEST

Graham VK6RO continues to feed me information from "CQ Japan" which is of great interest. Each month the magazine publishes a chart of reported and notable contacts on 6 metres and for a long time they have taken a lot of space with 3 closely printed columns side by side. Now, for the first time in many moons there has been a decided drop off in contacts in the Northern Hemisphere with about a third of the usual space being occupied in the March 1982 issue, and with more VK3, 5 and 6 stations taking up some space. It seems the Es assistance has helped those stations further south to be heard in Japan and probably the JA stations are also being more selective in now working the lesser known and further away stations. Very interesting.

The January issue of the same magazine carries a prediction chart for Cycle 22 on 6 metres which shows a smoothed sunspot count of 120 in 1982, 60 in 1983, 50 in 1984, 35 in 1985, 15 in 1986 (the lowest point), 20 in 1987, 40 in 1988, 70 in 1989, and 100 in 1990. They aren't

sticking their necks out at the moment for 1991!

Also included in that issue were some details of early contacts in the 1950's between Bob Greenwood (VK4NG) of Rockhampton and JA1AHS, JA1AEW and JA1TL on 50 MHz, and reported in "About VHF No. 36" at the time. 22/1/57 at 1330Z apparently VK4NG and JA1AEW were in QSO on 7 MHz and noted QRM and signals on 50 MHz. At 1335Z JA1AEW went to 50.1, then 50.72 and were eventually able to make contact with signal reports 5x8, later 5x9. QSL via JARL. This was apparently reported by JA1AHS and were the first overseas QSO's between the two stations. Equipment at the Japan end consisted of transmitter using AM, with 2 x 6AC7 valves, 2 x 6AR5, 2 x 6AR5 to a 2E26 final, running 14 watts. Modulator 6SVJ7, 6SJ7 to 807, antenna 14 MHz short wave!

I think that's a fairly reasonable translation of what occurred; my Japanese is not too good. . . . 5LP.

U.S.A. REPORT

From "The World above 50 MHz" QST and Bill W3XO, March 1982.

"Es in the U.S.A. produced a better than average winter season. From the QTH of Pat WA5IYX in San Antonio, Texas, there were 22 Es openings on 12 different days during December for a total of 1310 minutes of propagation via the E layer. And as 1982 arrived, the conditions continued. New Year's Day brought a widespread opening that included double hop. WB2PMP/4 in Florida worked ZD8TC around 1300Z and appears to have been a Es-to-TE link up.

"Almost everyone who have been active on 6 metres over the past few months will agree that the fall of 1981 has been much better than expected, both in terms of the number of DX countries workable and in the frequency and strength of the openings. The reason we were all so surprised is that the experts say Cycle 21 peaked in December 1979 with a smoothed sunspot count of 164.5. It has always been generally believed that there is a correlation between sunspot count and the 10.3 cm flux that we are accustomed to hearing announced on WWV at 18 minutes after each hour. But WA5IYX computes the daily average 10.3 cm flux for the year 1981 as 202.6. This compares with 144.5 for 1978, 193.0 for 1979 and 199.9 for 1980. The highest peak reached this cycle, 383, did occur in 1979; however, the top reading for 1981 was 305."

Also noted in QST, same issue, we note with regret the passing of Helen Harris W1HOY, widow of the late Sam Harris W1BU. Also the passing of Nathaniel Bishop, ex-W1EYM, who is credited with W6DNS, with making the first trans-continental 5-metre contact on 22/7/1938. The VHF world is the poorer for the loss of these two people.

Mention was also made that Ken Ellis G5KW had been seriously injured in a fall from his loft while putting up a 6 metre dipole. Ken was away from his normal

operating location and on holidays and wanted to keep track of band conditions. We hope he will soon be back to full health.

Moves are afoot in the U.S. to try and rationalise their 50 MHz calling frequencies. It has been suggested the "domestic calling frequency" be 50.200 MHz. The Central States VHF Conference where this matter was being aired realised that spreading the word of the change to foreign operators could be difficult, the assemblage proposed that 50.110 MHz remain the DX calling frequency. This approach was in line with the attempt by a number of Florida stations over the past few years to reserve 50.100 to 50.125 MHz for use whilst engaged in DXing. Those in VK and elsewhere could well bear this in mind. It will take a long time in the U.S. I am sure for this to be generally accepted, so in the meantime you could find some U.S. signals on either spot, 50.200 or 50.110, thus a few extra turns of the knob will tune both. Maybe we should take another look at our own operating habits on 52.050!

1296 MHz.

David VK5KK was involved in a "short" contact on 1296.1 MHz recently when he had a contact with the Central York Peninsula Radio Club station VK5AYP. This occurred on 22/3 at 0525Z over a distance of 100 feet! VK5AYP was running 1 mW to a groundplane antenna and VK5KK ran 50 watts to a 3 foot dish back on! The contact was via SSB.

CONCLUSION

I would like to be able to report next month that Easter brought Australia another batch of excellent contacts as prevailed last year on 6 metres when many overseas countries were worked on the Easter Monday. As I write this my calendar tells me Easter is not far away so we will soon know!

Closing with the thought for the month: "No one is rich enough to do without a neighbour." 73. The Voice in the Hills. ■

WATT IS ELECTRICITY

from "Summerland ARC Newsletter"

Electricity is a colourless odourless gas which burns with a bright flame.

Light grows from a bulb.

An amp is a little animal that crawls along a wire. An Amp lives in an OHM. In summer an AMP lives in a COULOMB. POLARISATION is the changing of an OHM into a COULOMB.

An AMMETER is an animal that eats AMPS.

A BATTERY fires AMPS round a CIRCUIT. An AMP rides round the CIRCUIT on a MEGACYCLE. MEGACYCLES are parked on a GRID. Flemmings Right Hand Rule states that: All AMPS must ride their MEGACYCLES on the right hand side of the wire. A CHARGE OCCURS when all the AMPS run down the CIRCUIT at the same time. All AMPS meet at an ACCUMULATOR.

An OERSTEAD is an OHMSTEAD FOR ORSES.

A JOULE is a fight between two AMPS. You receive a shock when an AMP isn't wearing any shoes.

EDITOR'S NOTE: When WATT had read this he invented the STEAM ENGINE as a decent alternative . . . and was then prematurely retired to the old VOLTS OHM.



10 MHz AVAILABLE IN JAPAN

On 1st March, 1982, Mr. Noboru Minowa, the Minister of Posts and Telecommunications, gave permission to Mr. Shozo Hara, President of JARL, for JA amateurs to use the 10 MHz band as follows:

1. Assigned Center frequency: 10.125 MHz.
2. Classes of emission permitted: A1, A3J, A3A, A3H, F1, F4 and F5; however, in no case the occupied bandwidth shall exceed 3 kHz.
3. Frequency band permitted to work: 10, 10.100 - 10.150 MHz.
4. Maximum power permitted: 500W for those stations provided with a frequency measuring instrument, and 10W for those provided with no frequency measuring instrument.
5. Amateur stations using this band shall cause no harmful interference to the stations in the Fixed Service using the same frequency band.
6. Amateur stations are permitted to begin the operation on this band from 1st April, 1982.

For bandplanning of this band, JARL already decided that only narrow-band methods of transmission should be used within the limits of classes of emission permitted, while following the international decisions by the IARU regional organizations.

3rd March, 1982

Shozo Hara JA1AN
President of JARL ■

Taree Amateur Radio Club

(Notes from AGM)

The continued growth of interest in Amateur Radio on the mid-North Coast of N.S.W. was well demonstrated by the excellent attendance at the Annual General Meeting of the Taree Amateur Radio Club. Twenty-four licensed operators with many friends and associates attended the meeting to review a successful year's activities.

The Club President, Geoff Hunziker VK2BGF, elected unopposed for yet another term (congratulations, Geoff — a terrific example of service to A.R.) received the full support of members in planning many more social meetings for 1982. These social get-togethers alternated with regular business meetings, certainly keep the Club ticking over.

WICEN Co-ordinator, Chas. Withers VK2BVI, reviewed a busy year which included assisting in the search for missing aircraft in the Barrington Tops area and co-operation with the VRA unit. He also forecast significant involvement in the 1982 Southern Cross Car Rally which is expected to be a major project for 1982.

A presentation was made to Meg Stahl VK2AHD, who had served most efficiently as Sec./Treasurer for two years and had finally achieved her great goal of a full call sign. Meg is a real inspiration to anyone who has despaired of ever achieving 10 w.p.m. morse. Persistence really does get its reward in the end.

From Mike Richardson VK2BVQ, Hon. Sec. ■

Foozle Department

During photographing by the printer, prior to printing, of the computer program for Great Circle Maps, page 16, April 1982 AR, part of line 530 had been cut off.

Line 530 should read:
530 PRINTTAB(S); A\$; TAB (30); B\$; TAB (50); H; TAB (60); D; TAB (70); K ■

HOW'S DX



Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138

As Indicated in a stop press heading in this column last month CHINA is on the air but for the present you will have to brush the dust off the key and listen around 21.037 MHz if you intend to have BY1PK in the log. They (it is a Club station) have been taking up residence around this frequency at 02.00 to 03.00 UTC daily. Genuine reports of working the station and any QSL info would be appreciated.

forwarded to this QTH at regular intervals over a long period and it is believed every conceivable aspect from welfare of the crew, medical supervision, media coverage, to the invitation of trained DX operators who have additional skills to offer on such an expedition embarking to the Antarctic.

Many prominent names regularly appear throughout the copy received and more are being added weekly. Present planning intentions for the multi thousand dollar excursion to the Antarctic wastes is late '82 or early '83.

As with other projects of this nature finance has and is a major problem because the Australian operator genuinely interested in DX is a small percentage of the Amateur fraternity and an infinitesimal part of our country's population, therefore assistance has been sought from areas which carry a high density amateur population.

To go or not to go has yet to be decided, because of the reluctance of some DX Foundations to commit many thousands of dollars which is members subscriptions and donations to such a project, as they have lost out previously and had their fingers singed by unscrupulous organisers who have done the wrong thing.

Whether it goes ahead or not, it is my personal belief that the basic conception of the proposed venture should be shared with all readers so that they may quote it to their overseas friends. This will dispel rumours and save the embarrassment of not knowing what is going on in one's own backyard and getting away from the "I can't tell you, it's secret" syndrome, and it is intended to bring you up to date with progress of the group's goal monthly.

This will be a true and accurate report which will be exclusive to AR culminating in a lengthy pictorial article of the actual happenings en route, on the islands and the return back to the home port. So for up to date progress follow each month's summary and when discussing it please emphasize the source of your information.

Personal opinion is that it is a credit to the very small talented group who have dug deep into their pockets with no hope of recouping the massive initial expenses incurred, so that VK amateurs will be recognised as a progressive DX country which is giving a non-profiteering contribution to the specialized facet of DXing which is part of our hobby.

BUSY, BUSY, BUSY

25,720 contacts in one year. This incredible number is the total of QSO's that

Dick KV4AA made in 1981. Dick retired from day to day chores so he could become more active on the bands, and I think these figures proved he has achieved this as his total for the six year period from 1976 is now 195,000. A friendly greeting and a quick QSO before Dick has his breakfast, can be had by VK's on 14.202 MHz when the band is open. Dick's QSL's are 100% either direct or via K6PBT.

DX ISLANDS

JOHNSON ISLAND

WB0MKR/KH3 is operating from Johnson Island and the news is that he will be there for the rest of 1982. Particularly active on 20 metres. QSL manager is KB2RV.

AUCKLAND ISLAND

ZL3AFH/A can frequently be heard around 14.005 MHz at 0730 UTC.

MACQUARIE ISLAND

List of those wanting to work VK0AN are quite often taken by VK6AJW or VK6IH, whilst VK0AN is often found around 14.165 MHz on Saturdays at 1000 UTC.

WILLIS ISLAND

14.332 MHz is a good place to keep an "ear to the radio" for VK9ZH. Tony meets Gill VK6YL, his QSL manager, each Tuesday and Thursday at 0930 UTC on this frequency. He is also frequently heard on the Open House Net, same frequency after 1030 UTC. Tony will be on the island until June and as yet it is not known if there will be an amateur in the replacement crew.

TUNISIA

For the next two years 3V8AA will be in Tunisia to complete his five year contract. Fridays on 28.605 MHz at 1400 UTC is a good place to hear him, and at other times he can be found near 28.535 MHz.

THE COLVINS

As many would know, Iris and Lloyd recently spent a very successful time in Guyana. During their 20 days there they worked 144 countries and had in excess of 9000 contacts. VK's had their fair share via the courtesy of the Caribbean Net and many gained a new "YL" country as a bonus.

DX SILENT KEY

Bob Roberts 9K2DR passed away suddenly in January. Bob was a very popular and well known DXer from Kuwait and his QSL card with the crowing rooster on it would have been a very welcome "new one" to many. Bob will be sadly missed.

CW ON THE NEW 10 MHz BAND

There appears to be plenty of activity on the new 10 MHz band since January 1. Plenty of G stations have been heard and



DXPEDITION: VK0 HEARD

Over the last few months a small group of dedicated DXers from VK6 have been unobtrusively investigating the viability of launching a genuine attack at removing VK0 Heard Island from the top ten wanted DXCC countries.

This group, who call themselves the VK6 DX CHASERS CLUB, in their own quiet way have joined forces with a combined mountaineering, photographic and scientific expedition which is prepared to stay in the area for a considerable period.

All are long standing members of the Institute and for no personal gain or reward wish to see this lonely Australian island activated in the Amateur spirit following up with a pipeline QSL arrangement that will leave no doubt to the genuine card seeking DXer that he or she will receive the much sought after pasteboard for working a new country, promptly and at a minimum financial outlay.

Copies of all correspondence concerning every aspect of the operation have been

worked. Many are inquiring why there are not very many VK's to be worked. Kevin VK3AUQ has worked well over 200 different stations in less than three months and he has not even been trying. Some of his better countries are: C6, DL, EA, HB9, HB0, LA, LX, OE, VP2E and so the list goes on.

PREFIXES 6D AND XF

These prefixes emanated from Mexico and were used to celebrate the 50th Anniversary of the League Mexicano.

For QSLing the prefixes are sorted thus: XE1 = 6D5 or XF1; XE2 = 6E5 or XF2; XE3 = 6F5 or XF5; XE4 = 6J5 or XF4, suffixes still remain the same. (e.g., 6D5C1 would be Nellie XE1C1.)

Cards are 100% according to the operators BUT the way a couple of operators were quoting their QTH's it would be wise to go direct if you really want the card otherwise cross fingers and via the QSL Bureau:

"NO" QSL BUREAU

THERE IS NO QSL BUREAU ON MONT-SERRAT . . . A few years ago some visiting amateurs set up a QSL bureau on Montserrat, stayed a short time then left behind all that they had started. As the Montserrat Amateur Radio Society does not intend to establish a bureau there all stations operating from Montserrat should nominate their QSL route being either to the home call direct or via a nominated manager.

This information from Alex VP2MM also states he is not a QSL manager for any station although it is listed in the latest American callbook.

CLYDE VALLEY DX GROUP

A group of amateurs from Strathclyde in Scotland have formed a DX group and intend mounting a major assault on the four extreme points of Scotland during a three week period in August 1982, exact dates are yet to be finalised.

The points to be tackled are:

1. Mull of Galloway (South)
2. Ardnamurchan Points (West)
3. Dunnet Head (North)
4. Buchan Ness (East)

The expedition hopes to operate from each location in turn beginning at the South point then West, North and East in that order. Two stations will be operating continuously for 48 hour periods from each location, covering most of the HF bands.

Each of the four locations will issue a distinctive QSL card for that location and contact with all four locations will entitle the successful station or SWL to claim an exclusive certificate.

A special call-sign, GB4GM, has been issued for the duration of the expedition.

Further Information from: Gordon Hunter GM3ULP, Clyde Valley DX Group, 15 Quarry Road, Law, Carlisle, Strathclyde, Scotland.

ZS5CS & ZS5DC, John and Diane

A bedroom that overlooks a valley jutting out into the sea, looking out to a harbour on one side and the Indian Ocean on the other and a lighthouse shining down upon

them after dark, a garden with such tropical shrubs as pawpaws, avocado, poinsettias and hibiscus and a large swimming pool. Envious? This is the idealistic life of John and Diane.

John and Diane's interest in radio stems from wartime when he was in the Royal Corps of Signals and 2nd Independent Parachute Brigade and Di was in the WRNS Royal Navy Communications as a Bunting Tosser.

About 6 years after the war ended John and Diane uprooted themselves from England and headed to Kenya to try their hands at farming. During their seventeen years of farming they became involved with a radio scheme which helped the lonely farmers and elderly which in turn encouraged them both to get back into Amateur Radio. Both passed the necessary exams. A Heath do-it-yourself kit and a dipole helped them to work the world whilst living on the side of an extinct volcano looking across Lake Nakuru which had half a million flamingoes on it.



Diane ZS5DC

Eventually Government changes made it necessary for them to move on and the move was to Mahe in the Seychelle Islands living right on the beach. As there was no reciprocal licensing it was necessary to sit for the exams again and then they found what it was like to be a much wanted prefix. Di was issued with the call VQ9DC and John claimed VQ9BP. Operating was a ball from Mahe with a DX-pedition to Desroches thrown in for good measure. In the first week 140 countries were worked.

As Diane has severe arthritis they decided to settle in Durban on account of the climate and life seems to be a "ball". They are both members of the Police Radio Reserve which necessitates a few evening watches each week, they are both very interested in theatre, opera, ballet and most music except loud disco. Diane enjoys knitting and tapestry and most particularly "her radio hobby". John is a member of the Royal Signals Radio Society and Diane belongs to the RNARS and would love to get into a VK RNARS Net. Any time that is left is taken up with reading.

The current gear is a HW10 QRP rig, a 9 year old KW2000E and a TS120S to a



John ZS5CS

TA33 Jnr. aerial 30 feet high which is the legal height for their area, and two metre VHF equipment is also close at hand.

Diane can be heard quite frequently on the ANZA net and loves to talk with as many people as she can find.

KENWOOD CONTEST

The Kenwood Contest, with a prize of a TS 830S has been won by Don Howison VK2DXH. Don has worked extremely hard for two months to carry off the prize in this contest and is now eagerly looking for time to operate his new rig.

Don is also building a 5 element band-pass yagi for 20 and 15 metres in his spare time. Good DX Don and enjoy that hard earned prize; perhaps you will "wet its" head with a new one, country that is.

SOUGHT AFTER

Active in the WPX contest and much sought after was 1A0KM. Under the control of Mario 10MGM, which is the QSL route, this operation went like a well tuned Rolls Royce — three to four contacts per minute was the going rate for a couple of hours as heard in VK and some of it was heavy going, particularly when short skip conditions were in to neighbouring European countries. The operators were in control at all times, quite a change to some operators that are heard when faced with a challenge.

PENGUIN DX???

Allan VK0AN will be signing /P probably by the time you are reading this. He proposes to carry the transceiver and the vertical he will use as a "back pack" about 12 kilometres across undulating terrain and camp in one of the six Biology huts which are scattered around the island. Each hut has a generator, gas heating and adequate canned provisions, these being serviced by the Supply Ship when it visits each year for the change of crews. Allan, good luck, good DX and don't forget your log book as it is a long walk back to camp!

TRINIDADE

PYOTA/B. If you were one of the lucky ones, QSL to Ricardo de Souza Carvalho, R Capita Resende 206, C/10, Apto 201, Cachambo 20780, RIO DE JANEIRO.

Even though this QTH is that of PY1VOY, it would be prudent not to use the call

EDUCATION NOTES



Brenda Edmonds VK3KT
56 Baden Powell Drive, Frankston 3199

sign on the envelope and the stamps could use some special treatment before being posted.

SCANDANAVIAN QSL's

Stig, LA5NM wishes all to know he is now QSL manager for the following stations: JW5IJ, JW5NM, JW5FD, JW8KT, JW8LU, JW9UV, JX3P, JX7FD, EA6ET, ED6ET, HM1TR, HM9A, HM0S, HS1AMB, LA1H, 9V1VV and 9V0VV.

The awareness of DX and sharing it with fellow Amateurs seems to be catching, as the credits are growing each month and this allows a broader coverage to be documented from all over VK. Ladies and gentlemen, thank you one and all, particularly to my XYL Betty for her assistance in preparing and correlating the column and calls such as G3NBC, VE2AFU, OK1MP also WORLD RADIO, QTC and RADCOM for info and ideas. From VK it would be remiss of me not to mention the following contributors: Eric L30042, VK's 2DPN, 2DXH, 3UX, 3PA, 3AUQ, 3BOE, 3DFD, 3DHF, 4AIF, 6HD, 6IH, 6NE, 6XI and 6YL.

Good DXing. 73. ■

LISTENING CW WITH ERIC L30042

- 3.5 MHz:
JA's. VK9NS, 3D2WR.
- 7 MHz:
CM2ZU, CT1UP, G3UOF, HK3YH, KP2A/KP1, OZ7WZ, PJ7ARI, T30AT, VK2RJ/LH, VK9NS, VK9XT, VK9YC, VK9YM, VK9YT, VP2EV, ZK2BGD, ZM7VU, 4X4FU.
- 10 MHz:
DL2GG/VV5, DL300, F6FGN, G3N1D/A, GD4BEG, G131VJ.
- 14 MHz:
CO8TL, DJ7UX/EA6, FM7WA, HI3JIF, HK1ANP, HZ1AB, VK9NM/LH, VK9NS, VK9YT, VK0AN, VQ9CW, YD3BAX, ZM7VU, 4K1H, 487WP, 5W1DC, 5Z4CX, 9J2BO.
- 21 MHz:
CX1DZ, EA6NC, HL1AQ, HP1XEK, JD1BAK, KV4CI, LU9HBJ, SV1DO, T30AT, VK9NL, VK9YC, VO2CW, VP2MIX, XE1EFT, YV4AU, ZF2FR, 5W1OC, 9H1CH.
- 28 MHz:
A4XJP, CR9BK, D2PI (2145Z), EL0AU/MM3, KL7PZ, KA7JGP/KH2, LU2DCJ, P29PS, SL3AG, RA3RKO, UA0QGB, VK9XM, VK9YC, VK9YM, VS6EY, VU2VTM, YB0ACP/5, YV1DTL, Y55XL, 3B8BH.

QSLers OF THE MONTH

A4XJP, E1BEK, FP8AA, FPOGAP, G3HTA (10 MHz), HC1SC, HK100, HL1CX, J28CI, OA4FW, SV1GR, TI2BGA/5, VP9CB, XE1HHT, ZK2AD, ZL3AFH/A, 5W1DT, 8P6QL.

QSL MANAGERS

3D2WR (JH7OHF), EL0AU/MM3 (VS6GP), VK9NM/LH (DU5CO), ZM7VU (F6DYG), 5W1DC (DL3GU), T30AT (G3XZF), VP2EV (K8ND).

SSB WORKED ON THE EAST COAST

14/3V8DX, 14/4U1UN, 14/5V7RE, 14/8P6AH, 14/8Q7BN, 14/9O5MA, 14/CP1DM, 14/FC9UC, 14/HZ1TC, 14/J73RM, 14/JT1AO, 14/JT60UB, 14/S79WHW, 14/TF5TP, 14/VK9YM, 14/VP2MO, 14/VP2VD, 14/VP8ANT, 14/VP8LP, 14/ZB2J, 14/ZF1SB, 14/ZK1CG, 21/T32AE, 21/VK6FGD, 28/3V8AA, 28/9M8PW.

SSB WORKED ON THE WEST COAST

1.8/CW: OL1RK, DL7HU, G3RFS, G4AKY, GM3ZSP, GW3YDX, JH6OFX, KP4KK/DU2, VK9YM, W4OWJ, W6RW, W8ANO.

1.8/SSB: VK9YM, W8IMZ.

21/SSB: 3C0AC.

3.5/CW: 3D2VU, 5W1DC, 5Z4CS, A4XJO, E19J, EL8H, G131VJ, GU5SD, T30AT, UL7CAD, UM8PAC, Z55LB.

7/CW: J3AVT.

DX HEARD ON THE WEST COAST

1.8/CW: 5Z4CS, LA1EKO, OH0XX, OK1DFF, UA9XCF.
3.5/CW: J3AVT, OAA4WD.

The appearance on the market of a couple of new Novice textbooks prompts a few comments on books available.

Two new books — "Into Electronics" produced by the WIA NSW Division Education Service and "The Novice Operators Theory Handbook" by Graeme Scott and Sandy Bruce-Smith, both appear to be very useful additions to the resource material for Novice classes. I would like to discuss these and a few other examination manuals next month.

What is pleasing is the increased range of books available in recent years, and the more ready supply of them by suburban booksellers. Perhaps this is another spin-off from the CB boom.

The DOC Novice syllabus suggests as texts the ARRL and RSGB handbooks or the Radio Handbook (Editors and Engineers, Ltd.). I have not seen the latter — I haven't really hunted for it — but I think most people would agree that both the ARRL and RSGB are rather daunting for the real beginner. Many Novices graduate to them quite soon, and find their value as a reference for later on.

I personally prefer the RSGB, despite the extra cost, for explanations, diagrams, and readability. However, the two volume format does mean that the section you want is usually in the volume you can't find at the moment.

For some years our classes have used the New Zealand Basic Radio Training Manual. This is much less elaborate than the others but still more detailed than necessary for Novice level. It conforms

fairly closely to our Novice Syllabus, and is reasonably easy to understand.

Another useful small volume is "Basic Electronics", published by Electronics Australia. This is probably the easiest to read, as it is written in a very informal manner with historical background to some sections. It includes notes on Hi Fi and television, but nothing on interference. A reference index at the end would be a useful addition.

In the "Teach yourself" series, "Radio", by David Gibson (Brockhampton Press) is a simple, well illustrated volume which some students have found helpful as a starting point. It is now a bit outdated — although there may have been a new edition since my copy. It deals only with components, receivers and antennas — no transmitters, test equipment, propagation, or interference.

If any of you have references which you consider especially useful for any section of the course, I would be interested to hear of them. Many instructors would welcome a reference list matched to the Syllabus.

Best wishes to all who are sitting for the May exam. If there is any way I can help, please let me know. For those who are unaware, I now have enough D.O.C. exam tapes to fill a C60 tape at both 5 and 10 w/m. If anyone has sent me a tape for copying onto, and not received a reply within a reasonable time, please write again in case the system has broken down.

* Items thus marked are normally available through Divisional Book Sales. ■

INTERNATIONAL NEWS

RECIPROCITY

DOC has announced the completion of reciprocal licensing arrangements between Australia and West Germany for nationals of each country. The licence equivalents are:

Australian	W. German
Full Call	Class B
Limited Call	Class C
Novice Call	Class A

IARU

The membership of the IARU at the end of 1981 stood at 113. The last two societies to join were those of San Marino and Andorra.

CHINA

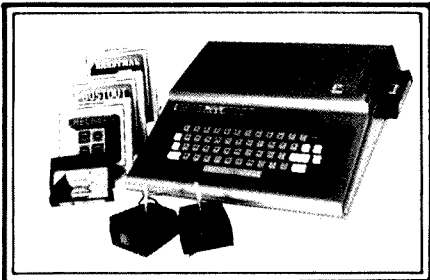
Six delegates from JARL, by invitation of the Radio Sport Association of China, visited China from 17th September last year. A visit next day was made to the station housing BY1PK in a room of the China Radio Sport School near Tiantan

Park in Beijing (Peking), a new school building, including a shack for BY1PK was under construction; 3-element yagis mounted on the roof were in use for SWL purposes. A visit to Hangchow found the delegation talking with a group sailing radio-controlled model yachts on Lake Xi for which no licences were needed. They visited Tunxi and joined in the national fox hunting contest on foot using the 80m band. The visit concluded with discussions about amateur radio in Shanghai.

WORLD STATISTICS

Latest IARU statistics showed there were 1,148,157 radio amateurs in the world. In round figures 195,000 in Region 1, 481,000 in Region 2 and 471,000 in Region 3. Main centres of amateur populations were: Japan 446,000, USA 392,000, W. Germany 42,000, USSR and Argentina 26,000 each, UK 25,000, Canada 21,000, Italy 17,000, Brazil 14,000 and Australia 13,000. ■

AR SHOWCASE



MICROCOMPUTERS

It has been four years since Tandy first introduced their TRS80 Microcomputers to Australia.

Firstly we were introduced to the Model I which was highly successful, then followed by the Model II which was aimed at the businessman and not for the personal or educational user.

This had to be rectified and in September 1980 the TRS80 Pocket Computer evolved. This fully-contained Pocket model weighed 170 grams, and had a computing power of 1.9K of RAM which was extremely useful for many applications ranging from engineering and aviation to personal finance, education and entertainment.

April 1981 saw the introduction of the TRS Model III, a desktop model which fits many applications for home, school or business.

Now, in 1982, we have the TRS 80 Color Computer. This computer makes computing enjoyable for the whole family and is easier to use with its many features such as the instant loading Software Paks, vivid colour graphics, programmable sound, expansion disks and Joysticks, and Color Computer connects simply to any colour television set.

For further information contact Tandy Electronics, P.O. Box 229, Rydalmere, N.S.W., 2116, or your nearest Tandy dealer.

MOBILE DIPOLE

Scalar's Ground Independent Antenna models are designed for use on vehicles where a groundplane is either not available or is insufficient to use a standard whip antenna.

They are efficient alternatives which overcome customer objection to the drilling of holes in the vehicle roof, or where

it is not practical to instal a standard mobile whip antenna in the roof due to obstacles such as racks, ladders, beacon lights, etc. They are specifically designed for use with a guttergrip, boot lid fitting, wing mirror on larger vehicles or ski bar clamp.

Two models are available:—

1. Covering the frequencies 140-180 MHz. Cat. No. 'GRH'.
2. Covering the frequencies 450-520 MHz. Cat. No. 'GRN'.

Both are field tunable to frequency. Both are ideally suitable for use by amateurs in the 2 m and 70 cm bands.

Available now from any Scalar office in Melbourne, Sydney, Brisbane or Perth.

NEW ANTENNAS

Vicom International Pty. Ltd. announce the availability of three new vertical antennas. All are of rugged construction for long life and are supplied with high quality hardware.

The GPV5 is a 2m collinear comprised of two $\frac{1}{2}$ waves in phase with decoupling radials. Height is 3.1m. Gain is approximately 6.5 dB.

The GPV7 is a 70 cm collinear comprised of three $\frac{1}{2}$ waves in phase. Decoupling radials are also fitted for optimum performance. Height is 1.7m. Gain is 6.8 dB.

The GPV720 is designed for operation on 2m and 70 cm. Design is again of the collinear type. Height is 1.1m. Gain on 2m is 2.8 dB and on 70 cm 5.7 dB.

All three are now available from Vicom International Pty. Ltd. at 57 City Road, South Melbourne (03) 62 6931, or at 339 Pacific Highway, Crows Nest (02) 436 2766.

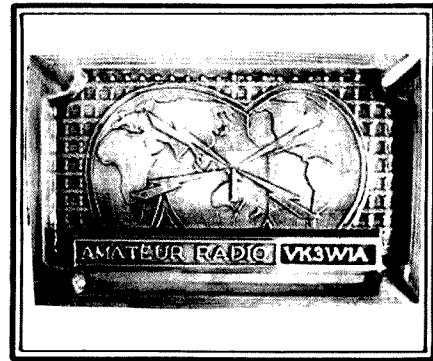
"SATELLITE TVRO DIGEST"

An announcement came recently from GFS Electronic Imports of Mitcham, Victoria, that they would soon have available, on a subscription basis, the new magazine "Satellite TVRO Digest".

The magazine, published monthly by Satellite TVRO Technology, Iowa, USA, is a technically orientated magazine designed around the construction and applications of equipment within 3.7 to 4.2 Gigahertz satellite TV band.

Some examples of features included in Satellite TVRO Digest over the next few months are articles on: GASFET LNA Biasing techniques, 70 MHz IF strip, LNA Downconverter Combinations, Audio Demodulators, PLL divide by 2 demodulators, Single Conversion Image Rejection receivers as well as systems articles on such subjects as Digital TV and Block Conversion Receivers.

Twelve months subscription rates are \$60.00 and further information can be obtained from GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria, 3132. Phone (03) 873 3939, Telex 38053 GFS.



NOVELTY WALL PLAQUE/ASH TRAY

As a side interest to amateur radio, Bruce Saxon VK3BWV and his wife Pam VK3NSB, produce novelty pottery ware.

Among the pottery they produce is a specially designed ash tray/wall plaque.

The plaque is fully glazed with a high quality deep golden brown finish, measuring 18 cm x 27 cm.

They are custom made with your own individual call sign embossed in white on a maroon background.

There is provision on the back of the plaque to insert a piece of string etc. to enable it to be wall mounted.

In my opinion the plaque is too attractive to be used as an ash tray, so mine is mounted in a prominent place on the wall of my shack.

The cost of each personalised plaque is \$10.00 (allow \$5.00 extra for certified mail) and covers cost of production only.

Delivery date is approx. 6 weeks from date of order.

Something new, novel, professional and different for Australian amateurs.

OVER 33,000
CHANNELS

J.I.L.SX-200

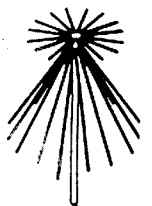
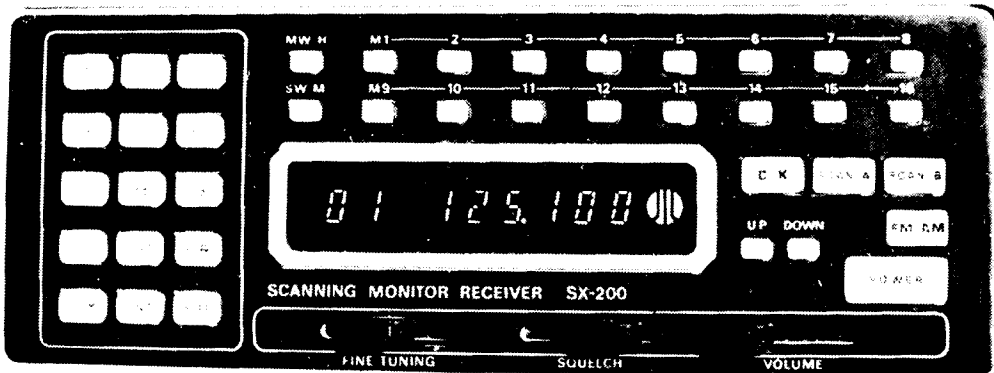


J.I.L.

Monitor thousands
of frequencies

FEATURING:

- Airband
- Australian low-band



A range of accessories is available including Broadband or High Gain BASE Antennas.

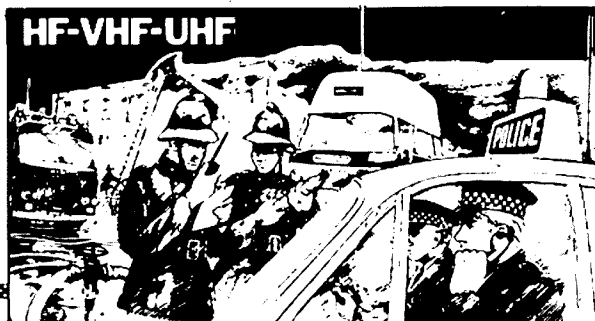
PROGRAMMABLE SCANNER DOES IT ALL. 26 - 180MHz, 380 - 514MHz.

SPECIFICATIONS

- **Type:** FM & AM
- **Frequency Range:**
 - a) 26-57.995 MHz Space... 5 kHz
 - b) 58-88 MHz Space... 12.5 kHz
 - c) 108-180 MHz Space... 5 kHz
 - d) 380-514 MHz Space... 12.5 kHz
- **Sensitivity:**
 - FM... a) 26-180 MHz 0.4uV S/N 12 dB
 - b) 380-514 MHz 1.0uV S/N 12 dB
 - AM... a) 26-180 MHz 1.0uV S/N 12 dB
 - b) 380-514 MHz 2.0uV S/N 12 dB
- **Selectivity:**
 - FM..... More than 60 dB at -25 kHz
 - AM..... More than 60 dB at -10 kHz
- **Dimensions:** 210 (W) x 75 (H) x 235 (D) mm
8-1/4 (W) x 3-1/4 (H) x 9-1/8 (D) in.
- **Weight:** 2.8 Kgs.
- **Clock Error:** Within 10 sec./month
- **Memory Channel:** 16 Channels
- **Scan Rate:**
 - Fast 8 Channels/sec.
 - Slow 4 Channels/sec.
- **Seek Rate:**
 - Fast 10 Channels/sec.
 - Slow 5 Channels/sec.
- **Scan Delay:** 0, 3 or 4 seconds
- **Audio Output:** 2 Watts
- **Ant Impedance:** 50-75 ohms
Whip or External Antenna with LO/DX Control (20 dB ATT.)
- **Freq. Stability:**
 - 26-180 MHz ... Within 300 Hz
 - 380-514 MHz ... Within 1 KHz

The JIL SX-200 represents the latest **STATE-OF-THE-ART** technology in the development of Scanning Monitor Receivers. It has many features that previous have not been available on receivers of its type.

For example the tremendous frequency coverage, which encompasses all of the following bands:— **HF & UHF CB, 27 & 155MHz MARINE, Australian LOW BAND, AIRCRAFT band, VHF SATELLITE band, 10Mx, 6Mx, 2Mx and 70CMx AMATEUR, VHF HIGH BAND and UHF TWO-WAY band** — as well as many others. Other features include detection of **AM** or **FM** on all bands, Squelch Circuitry that can be used to **LOCK OUT** carrier only signals, Fine Tuning control for off channel stations, **240 VAC** plus **12VDC** operation, Squelch Operated Output that may be used to trigger a tape recorder or channel occupancy counter and accurate Quartz Clock.



\$512



\$8 P&P

ACCESSORIES

- Service Manual \$10 + \$1 P&P
- Scan-X Base Antenna \$48 + \$8 P&P

JIL SX-200

A BETTER SCANNING MONITOR RECEIVER

HIGH QUALITY AND PERFORMANCE

JIL have designed the SX-200 as a high quality, high performance programmable scanning receiver at a realistic price, design criteria which are not born in many other receivers of its type.

MECHANICALLY RUGGED

The JIL SX-200 is ruggedly built using EPOXY-GLASS printed circuit board and double sided through hole plating techniques. Easy access and servicability is maintained throughout its design.

4 BIT MICROPROCESSOR WITH ONBOARD ROM AND RAM

A powerful 4 Bit PMOS Microprocessor, the uPD553, is used as a controller in the SX-200. Its features include 2000 x 8 ROM and 96 x 4 RAM onboard as well as up to 80 instructions with a 3 level subroutine stack.

EXTREMELY LOW SPURIOUS COUNT

Even though the SX-200 covers over 33,000 Channels JIL, through careful design, have been able to reduce the number of internally generated spurious signals to an extremely low level. Not the case in most other scanning receivers.

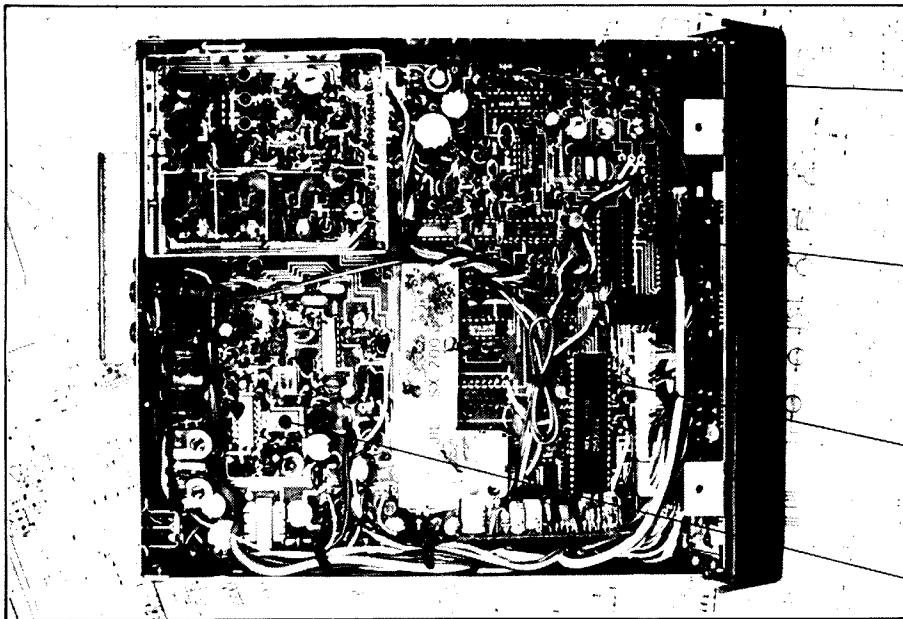
Monitor thousands of frequencies including many Military & Civil

HF-VHF-UHF



FULLY TRACKED RF AMPLIFIERS

The SX-200 makes use of 3 separate RF Amplifier Stages. They are divided into 6 bands, each band having its own electronically switched coils which are fully tracked with the receiver frequency using Varicap Diodes. Maximum performance is thus gained over the entire operating range of the set.



Rugged Double Sided Epoxy Glass Circuit Board.

2K Cmos RAM

4 Bit Microprocessor

Crystal and ceramic I.F. filters.

SX-200, RUGGED CONSTRUCTION AND EASY SERVICABILITY.

AVAILABLE FROM

W.A.: Letco Trading Co. (09) 387 4966, N.S.W.: Emtronics (02) 211 0531, QLD: CW Electronics (07) 397 0808, S.A.: Jensen Intersound (08) 269 4744, Plus many other regional outlets, contact GFS for your nearest stockist.

AUSTRALIAN AGENT & DISTRIBUTOR

GFS ELECTRONIC IMPORTS

Division of GD & JA WHITER PTY. LTD.

15 McKeon Road, Mitcham, Vic. 3132

PO Box 97, Mitcham, Vic. 3132

Telex: AA 38053 GFS

Phone: (03) 873 3939, 873 2652

DURAL —

25 Years of Service

by Jeff Pages VK2BYY
62 First Avenue, Berala, N.S.W. 2141

After many trials and triumphs Dural, the official home of VK2WI, this month celebrates its 25th anniversary.



Late Jim Corbin VK2YC, Div. Pres., turning the first sod on 5th August 1956.

In the mid-1950's the NSW Division of the Wireless Institute of Australia purchased a 5 acre property at Dural, a semi-rural district approximately 25 km north-west of Sydney. This was to be a home for the Division's station VK2WI, and in May 1957 the building was officially opened. The original transmitting equipment consisted of a BC610E 500W AM transmitter, two AT14 350 W AM transmitters and a 100W two metre AM transmitter. Broadcasts were conducted on Sunday mornings on 80, 40 and 2 metres, and the station was also used for weekly WICEN nets.

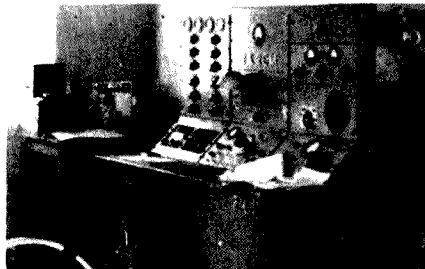


Official opening, 15th May 1957.

BURGLARY

Throughout the 1960's the station conducted the WIA broadcasts until in 1969 the site was burgled and much of the equipment was either taken or damaged. As a result the broadcasts were transferred to the Division's Crows Nest station (VK2AWI) until such time as the Dural facilities could be restored.

Considerable work was carried out during the early 70's. A few broadcasts were conducted from Dural, and this period also saw the establishment of the Division's 2 metre repeater and VHF beacons. However, for various reasons the attempts at restoring the broadcast facilities were unsuccessful, and the broadcasts continued to be conducted from Crows Nest.



First station as it was at Dural in 1957.

REPAIRS

Such was the state of affairs when in late 1977 the Dural Committee came into existence with the aim of establishing an 80 metre transmission from Dural to supplement the 40 metre transmission from Crows Nest. One of the first jobs was to bring the building and grounds back into some semblance of order, and several working bees were held to paint the interior of the building and cut back the undergrowth.

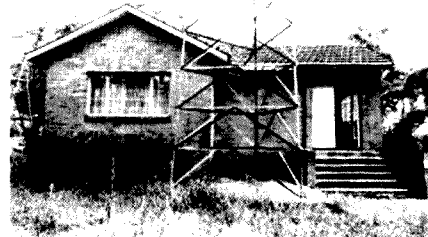
NEW TRANSMITTERS

An 80 metre dipole was strung up and an attempt was made to fire up one of the old transmitters, but this produced more fire-works than RF and was soon abandoned. At about this time three AWA J54800 transmitters became available and these were snapped up as they were in quite good condition. Indeed, before long, one of the new transmitters was producing a healthy 500W of AM on 80 metres.



Working bee on 12th August 1956 with (l. to r.): VK2's EO, GE, ANP, AAJ and EN.

On the VHF side, the 2 metre repeater was in the process of being upgraded, and was used as a source of broadcast audio for the other transmitters. The original 6 metre FM transceiver, an AWA BS50, was repaired and returned to service on 52.525 MHz. Audio from the repeater's receiver was routed through a solid state 8 channel distribution amplifier to the rest of the station. Transmitter selection was from a small panel of illuminated pushbuttons which operated a rack full of relays connected by a maze of jumper wire. A valve amplifier drove a monitor speaker in the control room, and the whole system regularly crashed when relay contacts fouled. Still, in spite of these difficulties, the station continued to gradually take shape. A big improvement took place when 70 cm links were installed to convey program from Crows Nest. An additional 2 metre FM transmitter was also installed to provide automatic linking into the Central Coast repeater, and later, repeaters in Wollongong and Oberon also joined the network. Three wooden poles 20 m in height were erected to replace the collapsing guyed poles which had previously supported the HF dipoles, allowing the 80 and 40 metre antennas to be properly installed.



Front view of station building.

In 1979 there were rumblings of discontent from listeners on 40 metres who were receiving a poor signal from Crows Nest. Tests were conducted from Dural using a borrowed SSB transceiver and the results were so good that this almost became permanent. Attempts at getting the J54800

earmarked for 40 metres operating had proved less than successful, until in mid-1980 500W of AM burst forth onto 7146 kHz. Many were sceptical about using "ancient modulation" but the 40 metre transmitter proved to be an instant success. The 80 and 6 metre transmissions from Dural were on relatively minor frequencies as far as broadcast coverage was concerned, but the appearance of a solid AM signal on 40 metres really had an impact, and this event was a significant milestone in the restoration of VK2WI.



Dural's antenna towers. Left is the 12m tower with beacon and 6m antennas; right is the 30m tower with 70 cm and 2m repeater antennas and link antennas.

A REPEATER

From here on things moved quite rapidly. The 70 cm repeater (VK2RUS) was established at Dural and became part of the broadcast network, and a 60W 10m SSB transceiver was added to provide local coverage on this band. This left only 6 and 2 metres SSB originating from Crows Nest, and plans were drawn up for a combined 6 and 2 metre SSB transceiver for Dural. The time had come to seriously consider originating broadcasts entirely from Dural, and with this in mind Divisional Council approved the construction of a new station audio and control system to replace the rack of relays.

In fact time was running short for the old audio system as the addition of the 6 and 2 metre SSB facilities would have exceeded the number of audio channels available from the distribution amplifier. It was decided from the outset that the new audio system should be carefully designed and not just thrown together, and in fact several ideas had been put forward at various times since the formation of the Dural Committee.

CONTROL ROOM

The control room at that stage consisted of two booths, one of which was fitted out with acoustic tiles and contained the control panel mentioned earlier. This was to become the new studio, and the other booth became the engineering position. Two surplus AWA console frames were obtained and these became the basis for the studio and engineering consoles. In preparation for the new system, 16 ten-pair cables were run from the engineering booth to outlets in the transmitter room, carpet tiles were purchased and laid in the control room, curtains were fitted to the outside window and the desktops were covered with laminex. At the end of 1980 the old audio racks were ceremoniously dismantled and an interim audio system was installed to provide continuity of service until the new consoles were completed.



Three J54800 AM transmitters with matching power supplies. Far left is a rack containing beacons with 6 and 2m SSB transceiver on top.

In July, 1981, the studio console was completed and the Division's two broadcasts were transferred back to Dural. Construction of the engineering console took a further six months, and in January, 1982, the new audio and control system was completed.

Each console may independently select any combination of up to sixteen transmitters and receivers. For broadcasts, the consoles are linked together so that audio from the studio is routed through the engineering console. This leaves the announcer free to concentrate on his job of reading while the engineer has full control of the station. To simplify the engineer's job, the system is preprogrammed with two combinations of transmitters which may be operated by a single switch. The appropriate combination is made available at broadcast times by the built-in 7 day digital clock, or either combination may be manually selected at any time.

All of the control functions are handled by a 2650 microprocessor which is located in the engineering console. All audio switching is done by CMOS analog switches under the control of the microprocessor, eliminating the need for relays. A modern front-loading cassette deck is located in the engineering booth to provide broadcast tape segments.

The system has been designed to simplify as much as possible the task of

conducting broadcasts, while providing sufficient flexibility to cope with other activities such as WICEN activations. In all the station has some 15 transmitters, including three beacons and two repeaters, and at the time of writing broadcasts are conducted on 9 different frequencies (see the WIA Directory for a list of frequencies).

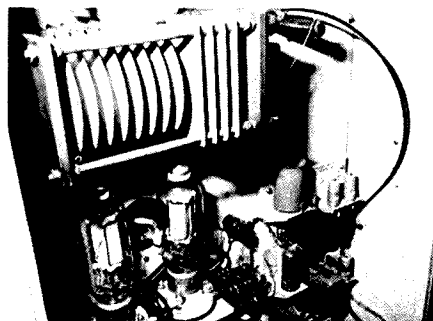


Plate tuning capacitor and finals of the 40m J54800.

On HF there are the three J54800 AM transmitters. Two of these are operational on 80 and 40 metres, while the third is being prepared for service on 160 metres. Each produces 500W output from a pair of 810's. There are also two Collins 32RS-1 SSB transceivers which are used for 80 and 40 metre callbacks and as a backup for the AM transmitters. These transceivers run 100W PEP on up to four crystal controlled channels in the range 1.5-15 MHz.

On 10 metres a converted CB base station coupled to a 60W solid state linear amplifier is used. A combined 6 and 2 metre SSB transceiver, designed and built by the Dural staff, provides 10W PEP on these bands. These three transceivers share their antennas with the three beacons, with antenna switching automatically occurring at broadcast times. The beacons are all solid state and run about 25W on 28.262 MHz, 52.420 MHz and 144.420 MHz. A 70 cm beacon, to operate on 432.420 MHz, is awaiting licensing.

An AWA BS50 is used for broadcasts on 6 metres FM. This is an all valve 50W transceiver, and will shortly be replaced by a solid state unit which is presently under construction. On 2 metres FM there is the link transmitter on 145.6 MHz which provides a direct link into three surrounding repeaters.

REPEATERS ALSO

The lineup is completed by the station's two repeaters, VK2RWI and VK2RUS. The 2 metre repeater on channel 7000 is fully solid state and runs about 35W through a six-cavity duplexer to a bank of four folded dipoles at a height of about 30 metres above ground. The repeater's control logic consists of a 2650 microprocessor which provides the various timing functions, identification, off-frequency and weak signal indications, an anti-button-pusher func-

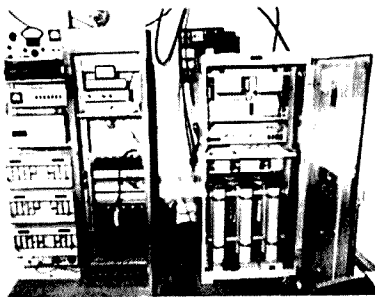
VK2 MINI BULLETIN

Susan Brown VK2BSB

42 Waratah Cres., Macquarie Fields, N.S.W. 2564

tion as well as extensive remote metering and control facilities. This repeater is completely home-brew and replaced the valve system which was in service prior to 1978.

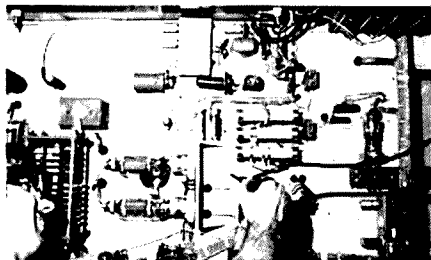
The 70 cm repeater on channel 8525 is also fully solid state and runs 10W from an AWA 15M transmitter and a Philips Westminster receiver. A four-cavity duplexer feeds a Scalar collinear antenna mounted on the top of the main tower at a height of about 32 metres. At present discreet logic is used for the control unit, but it is intended to replace this with a microprocessor based system similar to the 2 metre repeater.



Right: 2m repeater; Centre: 70 cm repeater; and Left (top to bottom): deviation meter, cavity filter, 12V distribution panel, 2m transmitter and three 70 cm transceivers.

The reconstruction which has taken place over the past four years is due solely to the efforts of the Dural Committee, which at present is made up of Roger VK2ZIG, Jelf VK2BYY, Charlie VK2BXX, David VK2AYO, Phil VK2BQC and Colin VK2DYM. John VK2ZPC and Doug VK2ZYM (now VK5ZYM) have also served on the Committee.

The Dural site is also used for various social functions, the largest being the annual fireworks display with an attendance last year of over 400 people. Each October the station hosts several groups of scouts for the J.O.T.A. and the bush setting is ideal for this. Visitors are welcome to look over the station on Sunday mornings and assistance is always required at the regular working bees.



RF section of 80m J54800.

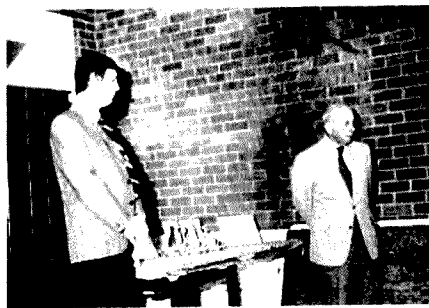
Although concentraion has been on the recent history of the station, mention must be made of the many people who have contributed over the past 25 years, both at Dural and Crows Nest, and whose efforts behind the scenes have made possible this service to members. ■

AGM REPORT

A total of 78 people attended the 1982 Annual General Meeting of the NSW Division held on Saturday, 27th March at Crows Nest. The Chairman, Divisional President Athol Tilley VK2BAD, opened the meeting at 10.03 by welcoming all present. After accepting apologies, the meeting then received and adopted the 1981 AGM minutes, the President's Report and the 1981 Annual Accounts as circulated.



Bill Hayes VK2AJL receiving his Merit Certificate.



Divisional President Athol Tilley VK2BAD presenting silver tea service to Bill Hall VK2XT.

Divisional President Athol Tilley presented an inscribed silver tea service to Bill Hall VK2XT in recognition of Bill's ten years' service to the Division as QSL Officer. The meeting thanked Bill with sustained acclamation for his consistent voluntary work on behalf of all NSW amateurs, whether members of the Division or not.



Howard Freeman VK2NL receiving his Merit Certificate.

The President then made presentations of Merit Certificates to Howard Freeman VK2NL, retiring State Supervisor of WICEN, Bill Hayes VK2AJL, Divisional Library Officer, and Mark Salmon VK2DI, retiring Slow Morse Supervisor. The meeting thanked all three by acclamation.

Returning Officer Roger Henley VK2ZIG then announced that as only seven valid nominations for Council had been received up to 25th February, there was no ballot and the new Council for 1982/83 is Susan Brown VK2BSB, Peter Jeremy VK2PJ, Gordon McDonald VK2ZAB, Tim Mills VK2ZTM, Jeff Pages VK2BYY, Stephen Pall VK2PS and Athol Tilley VK2BAD.

Keith Howard VK2AKX moved a vote of thanks to the retiring members of Council, Henry Lundell VK2ZHE and David Thompson VK2BDT. The meeting carried the vote by acclamation.

The meeting then proceeded to the notices of motion, as advised on the agenda paper. Motion 8a recommending that Council purchase suitable commercial property in the Parramatta or surrounding area as future Divisional headquarters and at the same time sell the Atchison Street property was carried. Motion 8b that Article 96 be changed so that the quorum for a Conference of Clubs be no less than 25% of the total clubs affiliated was carried. This motion will now proceed to the Attorney General's Department for approval, and the change to the Articles does not come into effect until this approval is given. Motion 8c was not proceeded with as the notice given was incorrect in specifying a change to Article 96 instead of 93.

Motion 8d recommending a change to the meeting time of the AGM to a time outside normal commercial hours was carried. Motion 8e recommending that the Division adopt as policy that upper side-band be used on 160, 80 and 40 metres was lost. Motion 8f recommending that Council charge for circulation of Council minutes to Affiliated Clubs was lost.

Roger Henley VK2ZIG was re-elected unopposed as the Division's Returning Officer for 1982/83. A motion expressing a vote of thanks to Council and the Dural

operators were moved by Harold Wright VK2AWH and carried by acclamation. Before concluding the meeting, the Chairman complimented members for the high standard of debate. He then declared the meeting closed at 12.23 p.m.

COUNCIL REPORT

At the March meeting, letters from Telecom and DOC Sydney were received advising that the interference problem being experienced by VK2WI on channel 7000 and several other repeaters was being investigated. Since the meeting, Broadcast Officer Jeff Pages VK2BYY has been advised by Telecom and DOC that the transmitter causing the interference has been repaired. Council would like to thank all those who responded to our requests for reports on the interference.

Council received a reply to our request for curtailment of daytime test pattern transmissions on TV Channel 0. DOC Melbourne have advised (eight months after our initial letter to DOC), that "the hours of test transmissions have been set to assist service organisations with their installation of suitable receiving aerials. Although, as you have noted, the use of Channel 0 is temporary, potential viewers require a reasonable lead-time in which to equip for the, as yet relatively unfamiliar UHF TV transmission. You may be assured that the Department is actively considering options to improve the present Channel 28 coverage throughout the Sydney metropolitan area in anticipation of the SBS more widely promoting this service."

HOMEBREW COMPETITION

This year, for the first time, the NSW Division is conducting a homebrew competition as recommended by a recent Conference of Clubs. Henry Lundell VK2ZHE drafted rules and scoring tables for the competition last year, and copies of these rules are available from Divisional Office. All Affiliated Clubs also have a copy of the rules.

Entries for the competition must be received at Divisional Office by November 31st each year. Local judges, usually from a club, will judge entries and scoring and documentation will be sent to Divisional Office. If you are interested in entering the competition, contact your local club or obtain a copy of the rules from Divisional Office.

One club which is conducting a local competition is Oxley Region Amateur Radio Club at Port Macquarie. Their competition is in two sections, both to be decided at the Oxley RARC's Field Day over the Queen's Birthday weekend in June. Thanks to Lewis VK2LS for providing the following information:

(1) HOME BREW RECEIVER CONTEST

Entries are invited from ALL AMATEURS for a Home Brew Receiver designed for use on any amateur band or bands, constructed from parts reasonably and or commonly available. To decide the winner, a panel of 3 judges will apply a point score system allotted to the following factors:

- (a) PERFORMANCE
- (b) SIMPLICITY
- (c) COST

Judges decision shall be final. Final judging, and the winner, will be announced at the Field Day on Sunday, 13th June. All entries will close at 2 p.m. sharp on Saturday, 12th June. Trio Kenwood have kindly donated a "Grid Dip Meter as the Kenwood Trophy for this contest.

(2) HOME BREW ANTENNA CONSTRUCTION AND ERECTION CONTEST

This contest will be held at the Annual Field Days at Port Macquarie over the Queen's Birthday weekend also. Details are as follow:

- (a) Antenna must be multi-band, capable of working on all of 80 - 40 - 20 - 15 and 10 metre bands.
- (b) No adjustment of any tuning device is permitted.
- (c) SWR must be 2:1 or better on all bands mentioned.
- (d) Entrant must be one individual person only.
- (e) All masting and necessary hardware to be supplied by entrant.
- (f) Existing trees and local structures in or outside contest area must not be used.
- (g) Contest erection times will be 10 a.m. to 2 p.m. on Sunday, 13th June.
- (h) Judges decision will be final.

These are two unusual competitions which are to be held at the Oxley Region Amateur Radio Club's field days on the Queen's Birthday weekend in June, at Port Macquarie.

TOWER FUND

Many thanks for the following recent donations to the Division's tower fund from L. Marsh VK2DWH \$5, L. Peasley VK2BLP \$10 and the Qld. Division \$27.

Details of two clubs affiliated with the NSW Division:

Armidale and District Amateur Radio Club
Net: Last Wednesday on 28.495 MHz at 7.30 p.m.

Meetings: Last Wednesdays at Organic Chemistry Building, U.N.E.

President: M. McGregor VK2NXU; Vice-President: K. Ward VK2YFW/NOI; Secretary: D. Boundy VK2BAE; Other Committee: J. Rogers VK2ACW, N. Johnson VK2NWX, K. Merliden VK2VCB, F. Hansen VK2IZ, R. Hansen VK2VUX, H. van der Drift VK2VCC, T. Wolfenden VK2-AZA.

Goulburn Amateur Radio Society

C/- PO Box 350, Goulburn, 2580.

Net: Sundays at 2100 on 3615 kHz using VK2BTZ.

Meetings and classes: Second Wednesdays at Goulburn Police Boys' Club, Avoca Street, Goulburn.

President: Henry VK2BUT, Vice-President: David VK2NAW; Secretary: David VK2-BDT; Other Committee: Monty VK2JQ, Barry VK2DBA, Jim VK2BO, Scott VK2-VUT.

COMING EVENTS

23rd May, Sunday: 6th Conference of Clubs at Revesby Workers' Club, commencing 10 a.m., 26 Brett Street, Revesby. Talk in on Channel 7000 and 28.47 MHz. Smorgasbord lunch available from 12 to 2.30 p.m.

5th June, Saturday: Dural Fireworks Night. Only 350 tickets to be sold PRIOR to the night. Listen to broadcasts for further details of the day's events, as this is the 25th Anniversary of the opening of Dural.

VK6 REPEATER



Photo shows the repeater site.

During late 1981 the Tic Hill Repeater Group ran a raffle to help bolster funds as money was fast running out.

On the 1st February 1982 the President, Trevor VK6MS, drew the four winners. They were:

1st Prize, an IC22S, kindly donated by Vicom and won by Tony, now VK9ZH, on Willis Island.

2nd Prize, a voucher for \$150.00 from Willis Trading, went to Graeme VK6ZGK.

3rd Prize, a 5/8th 2m whip and fittings from Scalar, went to Cyril VK6CR.

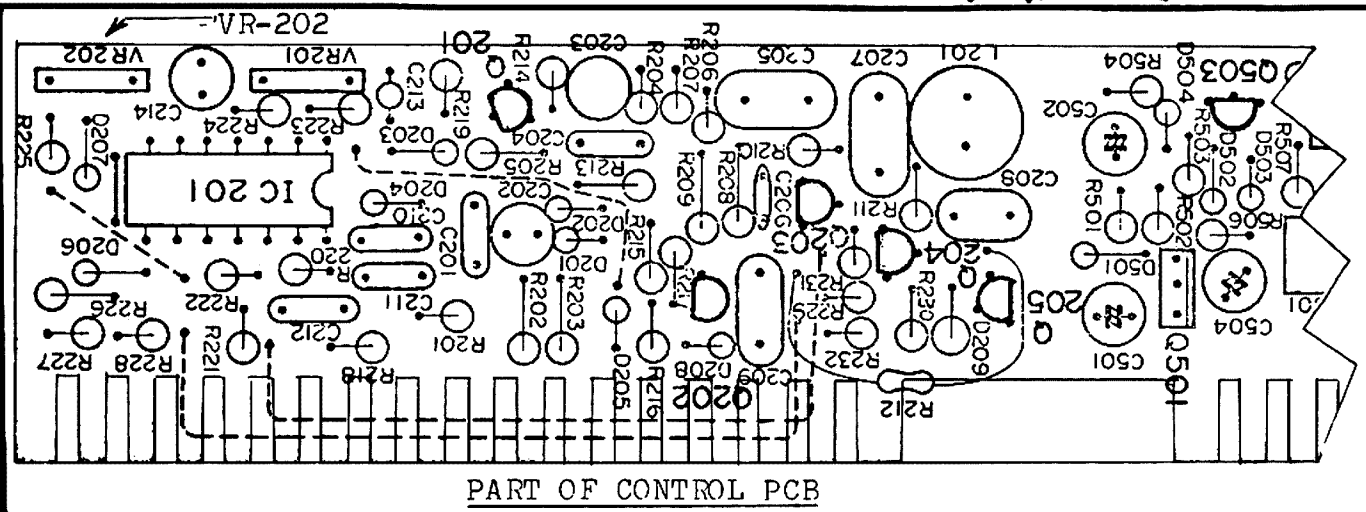
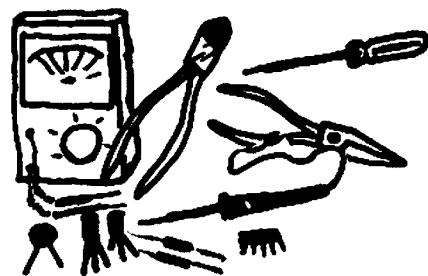
4th Prize, won by Ruthanna WB3CQN, was three years membership of the WA Repeater Group.



Trevor VK6MS on right, drawing the winners from a lottery number system arranged by Alyn VK6ZGA, on left under the careful eye of Douglas VK6ZMG recording all for the Sunday morning broadcast.

SERVICE BULLETIN

or do your own repairs??



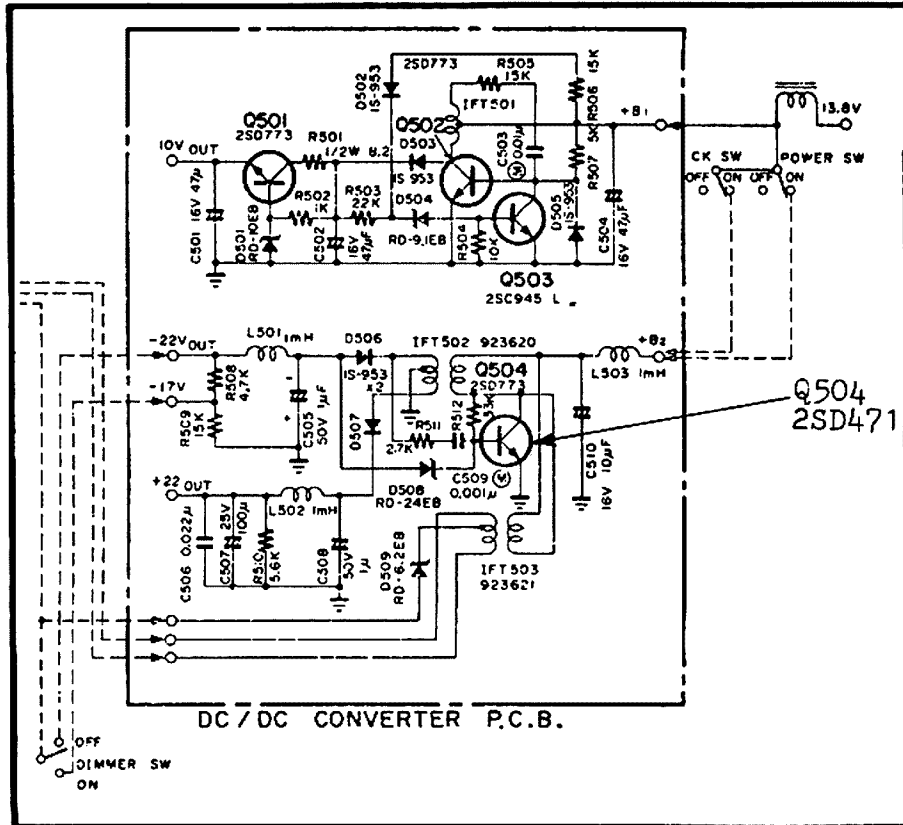
PART OF CONTROL PCB

• **AUDIO SHUT DOWN OF THE SX200N UNDER HIGH TEMPERATURES (35C+)**
 Have you found your SX200 has been suffering from a complete shutdown of audio or muting under high ambient temperatures?

The fault is caused by a drift of the Audio Squelch/Centre Detection IC (IC-201, uPC 324C) and misalignment of the centre control VR202.
 Re-centring VR202 should rectify the problem.

Part of the control PCB showing the position of VR202 running parallel to the back of the set.
 This information has been kindly supplied by GFS Electronic Imports, 15 McKeon Road, Mitcham 3132.

• **OVERHEATING OF DC-DC CONVERTER OF THE SX200N**
 A number of late model 200s are known to suffer from a failing digital readout caused by loss of -22 volt supply from the DC-DC converter PCB.



DC / DC CONVERTER P.C.B.

The problem appears to be that the oscillator transistor Q504 (usually a 2SD471) has failed and frequently causing the IFT502 to develop a short circuit.
 In most cases when this fault has occurred, it has been found that the Collector-Base resistor, R512, has not been the 33k ohm resistor that it was meant to be but a 22k instead. This lower value resistance provides too much forward bias to Q504 which results in overheating and in some instances, thermal runaway and eventual destruction of the transistor.
 It is therefore recommended to check the R512 and if a 22k resistor is found, to replace it with a 33k.
 This information has been kindly supplied by GFS Electronic Imports, 15 MceKon Road, Mitcham 3132.

VK4 WIA NOTES

K. B. Pounsett VK4QY
33 Lasseter Street, Kedron, Qld. 4031

ANNUAL GENERAL MEETING

Nine of the available twelve positions on Council were filled at the recent AGM. Under the articles, the Council is empowered to fill the remaining vacancies and will do so at the earliest opportunity. For greater detail on the events at the meeting, see your copy of March QTC.

The new Council members are John Aarsse VK4QA, Ken Ayers VK4KD, Harold Bremmerman VK4HB, Jack Gayton VK4-AGY, Guy Minter VK4ZXZ, Ross Mutzelburg VK4KRM, Fred Saunders VK4AFJ, Claude Singleton VK4UX and Rod Taylor VK4NBD/YRT. At its first meeting the Council will elect the 1982 office bearers as well as filling other non-Council positions. The Federal Councillor is still David Laurie VK4DT with Guy VK4ZXZ as the Alternate.

1982 RADIO CLUB WORKSHOP

This year's Workshop is almost upon us. Many club and federal motions have been circulated along with preliminary material on the policy making discussions. Please, make sure that your club delegate is well briefed — otherwise he cannot effectively present your views. It is still not too late to "bend his ear".

FEDERAL CONVENTION

As given above, our Federal Convention delegates this year are David VK4DT and Guy VK4ZXZ. Whilst they will receive a lot of briefing at the Workshop and again by Council, they are always available for input from individual members. Read through the Federal Convention motions as published and circulated and then let your Councillors know your views and thoughts.

EDUCATION

The updated education study kits are available from the Divisional bookshop and have proved very popular. It is proposed that content be reviewed regularly and appropriate changes made. For example, work is progressing on the preparation of a brief history of "Amateur Radio in Queensland" for insertion in the kits. Let Council know if you can see ways of improving the effectiveness of these kits or other services in general.

WORKSHOP

At the Queensland Division's Radio Club Workshop held over the weekend of April 17 and 18, at Griffith University, Brisbane, a well prepared motion by the Radio Amateurs' Group was presented. It dealt with changes to the rules of the John Moyle Memorial Field Day Contest.

The biggest change proposed is when. The RAG suggest a date a little later or alternatively much later in the year. Early

April is the suggested time but if this is unsuitable, late October or early November.

WHY THE CHANGE? The present timing puts the contest right in the middle of our wet season (and that of VK8). More VK4 stations have been rained on for more years than there have been dry field days. It is no fun erecting antennas and keeping gear dry in a torrential tropical downpour. For those without the experience, here in VK4, we can get more rain in one weekend than Adelaide gets in a whole year.

The RAG would not mind having the field day contest in mid-winter (the Sunshine State at its best) but recognise the problems of Southerners with very cold wet weather at that time. The RAG feels that early April would be just right for everyone.

WORKED ALL QUEENSLAND "VK4" AWARD

This award is divided into two sections — Worked All Cities and Towns, and Worked All Shires.

There are 21 incorporated Cities and Towns and 113 Shires. To obtain the award, you must contact at least 15 cities or towns, or 51 Shires. Stickers are available for great achievement.

If you are interested in obtaining further details, send a stamped addressed envelope to the Secretary, GPO Box 638, Brisbane, Qld. 4001, for the rules and check list.

A tip for those who are hunting cities, towns and shires, the Queensland net is held each Thursday evening on 3605 kHz at 0930 UTC. Lots of towns and shires are represented, some quite rare. You will be made most welcome.

CALLING ALL EX-VK4's

Peter Brown VK4PJ is the Queensland Division historian. Peter is busy collecting historical data about amateur radio in Queensland prior to World War II. He has already collected a lot of relics, books, log books, QSL cards, and notes and tapes of people's memories.

If you were an amateur or SWL prior to 1939, Peter would like to hear from you. Every little fact helps, you may think that you do not have anything to contribute. Memories of events, names, call signs, minutes of meetings, early DX, no matter how fragmentary, you could fill a gap in what he has now.

Peter's job is somewhat like that of the chief of MI5, sifting, correlating, and make a whole out of seemingly unrelated facts.

You may contact Peter Brown in care of the Queensland Division, GPO Box 638, Brisbane, 4001.

Welcome to Bud, the new correspondent for VK4. ■

BUYING OR SELLING GEAR?

HAMADS

MAKE IT HAPPEN FAST

Learn Your



Signals

By N6DQC Noel Novinson
from Santa Barbara ARC KEYKLIX

The following is a list of little used Q-Signals and abbreviations. Their meanings often need to be expressed with brevity and clearness in our amateur radio work, so learning and using them should be an important order of business for us all.

QCK — Don't bother trying to listen on the other sideband; I am a duck.

QIK — Please stop transmitting at this time, you're boring.

QOL — Your signal is so strong it just blew out my front end and I'll be seeing you in court.

QFF — Please send louder; there's a French-fried potato in my ear.

QOD — Sorry about my sloppy sending, but I'm high on drugs at this time.

QHT — Please stand by, as my antenna has just fallen into my bathtub.

QME — Sorry about taking so long to come back but I had to go out and milk the elk.

QDR — I have traffic I need relayed to Stonebridge. Do you speak Druid?

QHI — Please tell funnier stories at this time.

QHH — Please increase your power and/or talk louder as it is hard to hear you over the tinkling ice cubes and ripping clothes.

QBL — Sorry, I can't QSL, but I'm not legally licensed.

QHHHHH — I think my keyer's stuck.

QDT — I notice you are experiencing difficulty tuning up; please consider an easier task like watching television or counting your toes.

QCT — Your RST may not be much, but you're coming in fine on Channel 2.

from "ARNS Bulletin", Sept. '81



QSP

JOTA

The Jamboree on the Air in October this year will be extra special. 1982 is the 25th JOTA and this year also marks the 75th year of Scouting and the 125th year of the birth of the founder, Lord Baden Powell. The 13th Australian Jamboree is to be held at Collingwood Park in Queensland in the December/January 1982/1983 period. By the way, 397 amateur stations were involved in JOTA 1981 involving 837 operators and some 17,000 Scouts and Guides. ■



AMSAT AUSTRALIA

BOB ARNOLD VK3ZBB
41 Grammar Street, Strathmore 3041

CO-ORDINATOR:

CHAS ROBINSON VK3ACR

CORRESPONDENTS:

VK2RX, VK3KF, VK3KW, VK3YOX,
VK4PJ, VK5HI, VK5AGR, VK7PF.

INFORMATION NETS

AMSAT AUSTRALIA:

Control: VK3ACR

1000Z Sunday and Wednesday. 3680
kHz winter. 7.064 MHz summer.

AMSAT PACIFIC:

Control: JA1ANG

1100Z Sunday 14.305 MHz.

AMSAT SW — PACIFIC:

Control: W6CG

2200Z Saturday 28.880 MHz.

Due to the growing interest in amateur satellites the Amsat Australia net will now be held twice per week at least until Phase III B is operational.

CELEBRATIONS

Amsat Oscar 8 and RS3 to 8 inclusive continue to work satisfactorily in accordance with data previously published. No alterations to my earlier parameters have been received so I assume the record is correct. BUT watch out for May Day or other days of celebration in the USSR when something could happen, particularly to RS 3 and 4.

If you study the number of Russian historical events and add to them the space events recorded in Moscow's wonderful Space Museum it would almost be possible to have a further event on any day of the year!

Snippets of information emanating from various Russian sources give confidence to assumptions that more experiments are aboard some of the RS 3 to 8 satellites than are presently operative. Is something likely to turn up on 70 cm? Will either Mode B or Mode J be used or will an original mix of communications be used? The only way to know is listen intently.

UOSAT 9 is still not fully operational on all experiments (as at 21 March) and I can only repeat earlier messages — please be patient.

DELAYS

Unfortunately the launch of our Phase III B satellite has been delayed and will now be early October, 1982. Although a disappointment, we would prefer to wait and see a perfect launch rather than run the risk of losing our most valuable hardware.

COMPUTER PROGRAMMES

Some months ago I intimated that a programme written in Basic by Tom Clark W3IWI to determine an orbit path from

Two Line Orbital Parameters would be published as part of these notes.

This reprint was then deferred whilst details of UOSAT were published.

In the meantime no great number of enquiries for the W3IWI programme were received and so it has been decided to again defer publication.

However, for those who may be interested, a photo copy can be obtained by sending an A4 size SASE to the Editor of AR, PO Box 150, Toorak, Vic. 3142.

CONTACTS???

As we go to press we hear unconfirmed reports that contacts may have been made via Mode A of Amsat Oscar 7. With eight satellites in orbit capable of operating Mode A it is not easy to differentiate between them but with appropriate time checks it would appear that AO7 is possibly still alive — here's hoping!

LATEST NEWS

Last minute news from Ron G3AAJ, Secretary of AMSAT-UK, indicates that the Camera aboard UO9 has been opened and found to be in good shape. No programme has been prepared for the regular transmission of pictures and we must await this news and also the availability of PC Boards for the decoding and display of the UO9 pictures. ■

INFORMATION ON

Phase III Countdown

The concept of the Phase III Countdown newsletter originated prior to the planned launch of Phase IIIA, 23 May 80. Pat Gowen G3IOR, AMSAT Director and European Regional Co-ordinator, issued the Phase III Countdown letter to members of the IARU to keep them informed on the progress of activities leading to the actual launch. With the advent of ASR we have a natural vehicle for the Countdown idea. Thus, last summer AMSAT decided to continue the Phase III Countdown concept in the new package, ASR. This is the first in the series which by launch day will present as much material as possible that will be of use to the builder of Phase III-compatible stations, those who would become users of the Phase III resources and those who would write about Phase III for other groups of interested amateurs and non-hams.

We begin the series with an overview of the various systems and considerations that will affect Phase III B operations and

especially how the user will see the new spacecraft. In this overview we will speak in generalities. Specifics and details will follow in subsequent installments.

Launch day is scheduled for 6 July 82. The launch vehicle will be a three stage rocket of the European Space Agency (ESA) called Ariane. There have been three successful launchers of Ariane and one failure. The second test launch exploded on launch 23 May 80 and destroyed the Phase III A bird. The fifth launch of Ariane and the first operational launch, L5, is scheduled for early Spring. AMSAT's Phase III B spacecraft is manifested for L6 due to be launched 6 July 82. The ESA launch facility is located at Kourou, French Guiana, South America. The site was chosen so as to be close to the Equator to increase the weight that could be placed into geosynchronous orbit.

The Phase III B spacecraft will weigh nearly 150 kg (365 lbs.) and will be in the three pointed star configuration similar to Phase III A. This configuration was chosen to maximize surface area for solar cells to improve the electric power budget. Much of the hardware will be the same as was developed for Phase III A but with some significant enhancements. Phase III B will carry, in addition to the Mode B transponder with uplink at 70 cm and downlink at 2 metres, an L-transponder called for the present, Mode X. Mode X will have an uplink at 23 cm and a downlink at 70 cm. The antennas for the transponders will be circularly polarized with substantial gain. Required uplink power for Mode B is estimated (pending systems calibration) to be about 500 to 1000 watts ERP and on Mode X about 1-2 kw ERP is estimated.

The orbit for Phase III B will be very similar to that planned for Phase III A except for some minor details. The orbit will be a high elliptical orbit known as a Molniya orbit. It is hoped that the inclination will reach 60 degrees or so with a 10.5 hour period. The apogee will be about 40,000 km with the final perigee around 1500 km. The ground track resulting will take some getting used to and present satellite locator systems will prove useless. Computer generated plots and specially designed manual locator systems will be required. The coverage of the satellite will be great allowing nearly hemispheric coverage at times. The satellite will reach its final orbit only after a manoeuvre following separation from the launch canister called the SYLDA. The energy to perform the manoeuvre will be provided by a liquid fuelled rocket engine (kick motor)

fuelled by a mixture of UMDH and nitrogen tetroxide. The manoeuvre burn will last but a few seconds but will place the satellite in a long-lived orbit better able to serve the amateur community.

The passband of the Mode X transponder will be 800 kHz wide and that of the Mode B transponder will be 150 kHz wide. A bandplan for each mode is presently being devised. Public discussion of the proposed bandplan will be promoted in this column as well as elsewhere. Current planning envisions partitioning the passbands into three broad zones as before with one-third each for CW, SSB and mixed CW/SSB. As with Phase III A, there is consideration being given to the inclusion of the special service channels (SSCs) for the communication of special activities such as packet radio, bulletins, etc. There are 4 SSCs being considered for Phase III B rather than the 6 envisioned for Phase III A.

Ground command stations for Phase III B will be located in the U.S., New Zealand and Germany at least. Others may be added as mission requirements demand. Telemetry from the satellite will be bi-phase DPSK at 400 bps.

The ARRL has ruled that the satellite endorsement to the DXCC award may not be obtained for high orbit satellites such as Phase III B because, in essence, it will be too easy.

The user community on Mode B is expected to grow very quickly. Emphasis on communications discipline will be stressed. When the Mode B transponder begins to become overloaded, the operational plan is to begin a gradual increase in the proportion of time the Mode X transponder will be on compared to that time when the Mode B will be on. Both transponders will not be simultaneously operated. The hope is that the congestion expected on Mode B will be relieved by Mode X. There, with 800 kHz and more of a technical challenge, the congestion will likely not occur for years if at all.

Phase III B will cost several hundred thousand dollars once all the bills are in and the volunteer labour value is factored in. A comparable commercial project would cost in the millions. AMSAT's paid staff of engineers and scientists number less than a dozen. Volunteers pick up the slack and number in the dozens. Direct support for Phase III in terms of flight hardware and money to build the spacecraft has come from many national radio societies and from hundreds of individuals around the world.

On board the Phase III B spacecraft will be an extremely sophisticated computer called the integrated Housekeeping Unit (IHU). As the name implies, the IHU will supervise the performance of such critical functions as timing precisely the firing of the kick motor and such routine tasks as telemetry formatting. The IHU will control the attitude of the spacecraft by first determining the orientation and spin rate by looking for the sun and earth through special optical devices (remarkably aptly named sun-sensor and earth-sensor). At

precisely timed intervals the IHU will energize electromagnets in the "arms" of the spacecraft. The interaction of the geomagnetic field and the spacecraft's field results in a torque (twisting force) which will orient the spacecraft in the desired direction. Periodically the IHU will check to see if the alignment needs refining and act accordingly.

Phase III B should continue operation well into the second half of this decade. To reach this reliability goal special design features have been incorporated such as radiation shielding to protect the integrated circuits from radiation damage (to extend their expected life). The thermal design of the spacecraft is the result of a complex computer model developed by a professional spacecraft designer. All previous known failures of amateur spacecraft have occurred due to battery failure. Phase III B will be the first to carry a back-up spare battery to extend the spacecraft life beyond that realizable with a single battery. This back-up battery concept is used in commercial and military satellites to achieve the same objective. The spacecraft is built of space-qualified hardware subject to the most rigorous of testing and burn-in. The entire spacecraft will be tested at the Goddard Space Flight Center in a thermal-vacuum chamber to evaluate its performance in a simulated space environment. The spacecraft will be evaluated for balance under spin conditions and vibrated to look for mechanical resonances.

When placed in orbit this summer, Phase III B will likely become one of the most significant influences to affect amateur radio ever. The impact on the course of events is likely to be so great as to be essentially unpredictable beyond, say, a few years. What can be stated with relative certainty, however, is that amateur radio will never again be the same!

In this first episode of Phase III Countdown we have looked at some of the factors which will make the Phase III B the splendid achievement it bodes to be. We have seen how amateurs around the world have united in a grand dream of technological innovation stirring the imagination of operator and technician alike. We have looked at some of the physical characteristics of the bird and viewed some of their performance values. And we have hinted at some of the organizational challenges that lie ahead in keeping under rein the diverse, powerful forces which, on the one hand, could work for immense benefit, on the other, to the grievous detriment of the programme for years to come. In future episodes of Phase III countdown we will examine in somewhat greater detail the topics we sketched out here in this first installment. Stay tuned!

Reproduced from AMSAT Satellite Report. ■

* * * *

SAY IT FAST

A skunk sat on a stump. The stump thunk the skunk stunk, and the skunk thunk the stump stunk!

from "ARNS Bulletin", Sept. '81

For WIA Members only

THE WIA BOOK

YES, IT IS READY!!

This book attempts to bring together in one place a range of historical and other material including the best in VHF.

Coverage is given to a chronological table of events interesting to amateurs up to 1925, historical articles on Morse keys, emergencies, QSLs, call signs, satellites, the ionosphere and other items.

There are illustrations of QSL cards of 1926/28, a 1914 licence as well as other photographs.

This is Volume 1 of a Series you must not miss.

Stocks will be available from **YOUR DIVISION** or direct from

MAGPUBS

**P.O. BOX 150,
TOORAK, VIC. 3142**

Price will be
\$3.50 plus postage.

SPOTLIGHT

ON

SWLING

Robin L. Harwood VK7RH

5 Helen Street, Launceston, Tas. 7250

I have received an interesting suggestion from Mr. J. Bush (L20142), of Dulwich Hill, N.S.W. He would like to see the inclusion of tables of frequencies and times, together with their power and locations. This, he envisages, would be of benefit to some SWLs in their hobby, and could be updated every six months or so.

Personally, I do not have the time to compile such an extensive source of information. Nor is it practicable to include such, as tables and information of this nature are already available on a regular basis from both the Southern Cross DX Club and the Australian Radio DX Club. As this column is prepared six weeks before publication, any information can become easily outdated, when this edition comes out. Also I think it is important that we not duplicate what is already obtainable from other sources. However, that does not mean I will be excluding any information, if it becomes available, that is of interest to SWLs. I thank Mr. Bush for his suggestions and ideas. If you have any comments about this column and how it could be improved, please drop me a line to the address at the head of this column.

While I think of it, the deadline for inclusion of any information for this column is the 21st of the month.

SHORTWAVE NEWS

Now for shortwave news. Radio Netherlands popular Communications' magazine, "Media Network," will be having a series of six programmes on famous moments in shortwave radio. It will include many historic off-air recordings of interesting and unusual broadcasts, and should be well worth listening to. Times for these programmes will be 0750 and 0850 UTC on Thursdays on 9770 and 9715 kHz respectively. Incidentally, Jonathon Marks, the producer of Media Network, would like to hear from anyone who has tapes or recordings of significant events on shortwave for possible inclusion in this series. You can contact him at Radio Netherlands, P.O. Box 1200 JG, Hilversum, Holland. Keep reading this column for more news from Media Network.

SOVIETS

Have you wondered why Soviet HF broadcasts are so strong lately? They do seem to pack consistently loud signals into this region, much stronger than most other broadcasters. It was recently mentioned in several overseas bulletins that, although they have several Megawattlers, they use larger than normal antenna bays with 64 elements. These bays have 8 stacks of elements stacked one above another with

a similar configuration side by side. This is roughly four times the size of standard curtain arrays of 4 stacks and 4 bays, giving it a gain of 10 db over the standard array. They appear to be utilizing backscatter techniques so that the signals can be adjusted to take account of ionospheric conditions whilst the programme is being broadcast, resulting in a steady signal.

Added to this, they use audio processing or compression. That is, the softer portions of the programme material are increased in amplitude while the louder sections are decreased accordingly. These two factors have certainly increased Moscow's signal strength, compared with most other broadcasters, mainly operating under financial stringencies. However, with the deteriorating International situation, we should see the larger organizations get stronger, while the middle and smaller outfits will get drowned out.

PRE-AMP

One useful addition I have made to my shack, has been an RF pre-amp, which certainly has been an aid in pulling out the weaker signals. Yet it also has the disadvantage of bringing up the ambient noise level. I find that it is mandatory with my unit, to use an Antenna Tuning Unit, to filter out the stronger signals from cross-modulating within my rig. I use it exclusively on my receiver, instead of the FT 707 transceiver, because I would be as likely calling up a reasonable signal, and forget the RF pre-amp is in circuit and cook it! I suppose with the aid of a relay, this could be overcome, but I am satisfied to only use it with my FRG-7 receiver.

AFRICA

I have received a sample copy of a publication devoted to African broadcasters. Called QTH-AFRICA, this bulletin keeps those interested in what's happening on this continent, and is issued every 10 days. As well, they issue sheets of African External Service broadcasts quarterly, and a half-yearly summary of clandestine broadcasting in Africa. I would consider it an invaluable aid to those specialising in broadcasts from this area. The subscription price (airmail) for this area is £11 stg. per annum. Sample copies cost three IRC's. They can be ordered from Miki Vcelar, QTH-Africa, Box 28250, Pretoria-Sunnyside 0132, Republic of South Africa. Unfortunately, I seem to be in a dead spot to receive most African signals, with the possible exception of the South African External service, Radio RSA in Johannesburg, on 13 and 19 metres.

Talking of dead spots, the new American commercial broadcaster — WRNO in New Orleans, has not, as yet, been observed in Tasmania. I am sure that most have cited their schedule elsewhere, so I won't repeat it here. Yet if you look at the Great Circle Map and realize that they are beaming over the North Pole to North America and Europe, it is not surprising that I cannot hear them.

SWL NET

The weekly ARDXC Net on Wednesday evenings has been suspended, according

to Rob VK3BVW. No reasons have been advanced, but possibly there were few stations checking in to make it a regular Net. I think an Amateur Net devoted to Shortwave Happenings is feasible and desirable. As different locations have propagation to other regions, the use of a Net can be useful in the exchange of ideas, information and loggings. I would welcome your ideas and comments on this idea of a Net, and would be prepared to assist as NCS, if necessary.

Well, that is all for this month. Until next time, the best of 73's and good DX'ing



CLUB CORNER

THE NORTH WEST RADIO SOCIETY

This Society originated in Port Hedland, but it now has affiliated Clubs throughout the Pilbara area of Western Australia.

There is a Club net at 1130 UTC, Sundays on 3,605 MHz, a bi-monthly newsletter is mailed to members and all visitors to the area are most welcome to join in.

PORT HEDLAND:

Club call VK6ANW. 2m repeater channel 8 VK6RNW. Meetings: First Friday of month at clubrooms.

P.O. Box 283, Port Hedland, W.A. 6721.

Enquiries: John VK6AFA (091) 72 1022.
Mark VK6WV (091) 72 2513.

NEWMAN CHAPTER:

Call sign VK6MN. 2m repeater channel 6 (licence applied for).

P.O. Box 378, Newman, W.A. 6753.

Enquiries: Mai VK6NV (091) 75 1317.
Lindsay VK6NO (091) 75 1579.

KARRATHA CHAPTER:

2m repeater channel 4: VK6RWP (under construction).

Enquiries: Nigel VK6KHD (091) 85 1779.
John VK6ZOH (091) 85 1330.

WICKHAM AMATEUR RADIO CLUB:

2m repeater channel 2 (licence applied for).

Enquiries: Gordon VK6NCN
(091) 87 1074.
Pat VK6NHP.

CALL BOOK

Up-dated Information on Clubs is urgently required for the next Call Book, shortly to be printed.

Club Secretaries are requested to send along any additions or alterations NOW to:

WIA

BOX 150, TOORAK, VIC. 3142

WICEN



R. G. Henderson VK1RH
171 Kingsford Smith Drive, Melba, ACT 2615

This month I wish to make a few comments on amateur radio equipment and its use for WICEN purposes. I will deal with VHF and HF separately, so firstly VHF.

POWER SUPPLIES

WICEN operators should be able to operate their transceivers from a range of power sources using a variety of connectors. For vehicle batteries they will have the installed connectors and desirably a cigarette lighter plug, for external batteries cable lugs and spring clips are desirable, whilst AC power supplies often call for cable lugs.

Some WICEN groups have standardized on the 2-pin T configuration plug/socket, however, these are bulky. Others use reversed in-line fuse holders in both leads to observe polarity and permit interchanging gear.

Whatever you choose, I believe the minimum should cover the vehicle installation, a cigarette lighter plug, an external lead acid battery and a mains DC power pack with spring or screw terminals.

ANTENNA CONNECTORS

These are easier to cover, as the most popular connectors are the 239/259 screw series and the BNC type. Adaptors exist to convert from one to the other so as long as you can connect to both you should be safe.

ANTENNAS

Carry the widest range of antennas you are able to, ranging from the quarter wave ground plane, five eighths whip, flexible J (made from slotted 300 ohm TV feeder) to a portable three element beam from your fox hunting collection. Also carry sufficient coaxial cable to remotely site that antenna.

MICROPHONES/HEADSETS

Microphone connectors differ from set type to type and from model to model. Standardization is possible but should not be essential if you have a spare microphone with you for your set. In some working circumstances the local noise levels make it difficult to use the transceivers inbuilt speaker so an external head set, perhaps with boom microphone, is a useful investment. It's also useful to add a second external speaker jack that does not mute the internal speaker.

CHANNEL SELECTION

A numbered channel selection knob is of little use without a dymo-tape or similar label identifying the available channels.

OTHER FACILITIES

VHF FM transceivers can be interconnected to provide squelch and also audio actuated

repeater systems. If you set up one of these please check it out fully before the activation. You cannot afford time to engineer it in a real emergency.

Looking now at HF transceivers most of the above thoughts are relevant but a few others also apply.

VERSATILITY

An HF transceiver will not operate long from batteries without either recharging or float charging them. It is useful to carry a long mains lead and a safe distribution board to allow you to plug into existing AC supplies; but if they are from engine driven alternators monitor the voltage to protect your gear.

HEADPHONES

Headphones become more important at HF because of the background atmospheric noise which is most distracting to non-communicators. Amateurs frequently fail to realize this point.

ANTENNAS AND ATU's

At HF most field aeriels will be expedients so an ATU with VSWR meter is highly desirable to achieve maximum power transfer to the aerial system. A wire aerial, perhaps a G5RV, or several parallel dipoles resonant at WICEN frequencies together with a reel of light cord and throwing weights (in emergencies use a shifting spanner!) are necessary parts of your kit. Also look to carrying light antenna pole sections that can be joined, erected and guyed with light nylon cord. A wire can also be strung down the pole as a vertical.

In summary, **PLAN YOU EQUIPMENT NEEDS AND PREPARE IT BEFOREHAND**; perhaps it could all be kept in the one box in the shack ready to pick up complete when needed. ■

FORWARD BIAS

(VK1 DIVISION)

Richard Jenkins VK1UE
88 Companion Crescent, Flynn, ACT 2615

MEETING PROGRAMME

The next three monthly meetings will be held on:

May 24
June 28
July 26

The meetings are held at the Griffen Centre, Civic ACT. Members gather at 7.30 p.m. for a chit-chat, collect QSL cards, etc. Visitors are always welcome to attend the meetings. Come along and make yourself known to the members.

BACK ISSUES OF AR

The VK1 Division has received a gift of Amateur Radio magazines covering the last 20 years. Members are sure to find them a most useful reference source. Our special thanks to Reg, the donor. If you want some help with a project that might have been featured in AR, then contact Gavan, our Property Officer.

73. ■



ALARA

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

Margaret Loft VK3DML
28 Lawrence Street, Castlemaine 3450

Hello again to all, not much news this month as I am still waiting to hear of holidays, new calls, etc., from you.

NEW MEMBERS

Welcome to new members Elva VK4ANA/ZL1BIZ; Wendy VK4BSQ, and Martha KA7CRO. Wendy has sponsored Martha; this is a friendly way to foster new members and also it usually results in a co-sponsorship in the sister club, YLRL, CLARA or BYLARA.

At a field day of the VK3 north-east group I met up again with Esma YF of Les VK3AAO from Benalla. Esma is a long-time member of ALARA and is not enjoying the best of health just now. Do hope the tests were OK and you are on the mend. Best wishes from all your friends, ES and Les.

Thank you to Charlene VK1NEJ for the photo and note; it is lovely to have such a young YL on the bands. Look forward to talking to you on air one day soon, Charlene, and good luck with further studies.

This month's photo is of Joy VK7YL (1st licensed 1936) and Helene VK7HD taken at a "sewing circle" get-together at Ross. About 40 of the regulars turned up with OMs and YL's and it is hoped to repeat the day again later in the year. The net is held on 80 metres at 5 p.m. local time daily and it was good to put a face to voices we had listened to for years, Helene said.

Until next month 73/33/88. ■



Joy VK7YL (left) and Helene VK7HD.

CONTESTS



Reg Dwyer VK1BR
P.O. Box 238, Jamison 2614

CONTEST CALENDAR

May
8-9 USSR CQ M CONTEST
8-9 WORLD TELECOM PHONE
15-16 WORLD TELECOM CW
CQ WW WPX CW
29-30 IBERO-AMERICAN CONTEST
June
12-13 ARRL VHF CONTEST
12-13 SOUTH AMERICA CW
19-20 ALL ASIAN PHONE

RULES AND EXCHANGES

CQ WW WPX CONTEST (CW)

Starts 0000 UTC 29th May

Ends 2400 UTC 30th May, 1982

CONTEST PERIOD: Only 30 hours of the 48 hour contest period permitted for single operator stations. The 18 hours of non-operation may be taken in up to 5 periods any time during contest, and must be indicated in logs. Multi-operator stations can operate for 48 hours.

BANDS: All bands, 1.8 to 28 MHz may be used.

TYPE OF COMPETITION: There are single-operator single and multi-band and multi-operator single-transmitter all-band categories. One transmitter and one band only permitted during the same 10 minute period. (QSYing to another band to work a multiplier during this time is forbidden.) There is also a multi-operator multi-transmitter category in which all equipment must be within 500 metres diameter of the property of the licensee's address.

EXCHANGE: R.S.T. report plus a progressive three-digit contact number starting at 001 for first contact continuing to four-digits if past 1000. Multi-transmitter stations use separate numbers for each band.

CONTACTS: With stations in one's own continent count two points on 14, 21 and 28 MHz and four on the other bands. Contacts with other continents count three and six respectively. Stations in one's own country may be used for multiplier only. The multiplier is the total number of different prefixes worked. A prefix is counted only once during entire contest regardless of how many times it is worked.

LOGS: Should indicate time (UTC), date, station worked, numbers sent and received. If new prefix and points claimed. A prefix check list must be included.

ENTRIES: Must be posted no later than July 10th, 1982, to: CQ Magazine, WPX Contest, 76N Broadway, Hicksville, NY, 11801, USA. Please mark envelope "CW".

IBERO-AMERICAN CONTEST (IA CONTEST)

Sponsored by the Union de Radioaficio-

nados Espanoles (URE), Granollers and Mollet del Valles Delegations.

Phone only 29-30 May 1982 (last full weekend of May each year) from 2000Z Sunday. All bands 160-10m. A station and multiplier to be worked once per band. Exchange RS serial number.

FINAL SCORE: QSO's x multiplier. Mono operator, all bands only allowed. Award for more than 50 QSO's.

Logs to Box 262, Granollers, Spain, or Box 62, Mollet del Valles, Spain, mail by 15th July.

Ibero-American countries list: CE, CO, CP, CR, CT, C9, CX, C31, DU, EA, HC, HI, HK, HP, KP4, LU, OA, PY, TG, TI, XE, YN, YV, ZP, 3C and their DXCC dependencies.

AUSTRALIAN RESULTS OF 1981 ALL ASIA DX CONTEST

Call	Points	Call	Points
VK6IR*	90	VK2XT*	34026
VK8NTK*	35511	VK2PFQ	18720
VK3BMA	16218	VK5NXQ	6937
VK6FS*	121940	VK6JS*	29700

The * denotes a certificate winner. My congratulations to all entrants.

SOUTH EAST ASIA NET CONVENTION

On 15th and 16th August 1981, the South East Asia Net held the Seanet DX Contest. The results of the contest are available from me for the cost of a self-addressed, stamped envelope.

The only VK mentioned in the results was VK4XA with a score of 219.827. Well done, OM.

BERU 81

A note from Eric Trebilcock on the 1981 BERU Contest mentions the VK winners: VK4XA won the gold medallion; VK2DBL won the bronze medallion; the teams event was won by VK3, comprising of VK3XB, VK3AEW, VK3KF, VK3ZC; they were followed by VK2, VK7 and VK5 in that order.

THE VK NOVICE CONTEST TROPHY

The contest and trophy was won by VK3XB who had the highest aggregate score in the phone and the CW sections. The trophy is now in Ian's tender care. Congratulations, Ian.

CONTEST CHAMPION TROPHY 1982

This year's contest champion award will be determined from the following contests:

JOHN MOYLE NATIONAL FIELD DAY
REMEMBRANCE DAY CONTEST
NOVICE CONTEST
VK/ZL CONTEST.

These are the same contests as were set for 1981. I will print the rules and an

update for the contests in the June issue of AR, as space will now be rather short for this column.

JOHN MOYLE FIELD DAY RESULTS COMMENT

There were quite a few logs received for the contest and it is quite evident that considerable effort was put into all the contest activities and into the quality of the submitted logs, for both of these, thank you.

SCORING

The scoring method seems to have been understood by most of the entrants, however some of you have miss-scored your logs.

I have not re-scored these logs as the time involved to do this is prohibitive.

The correct method for scoring is as follows:

For a PORTABLE STATION contacting:

1. Home Station in the same call area (VK2/P to VK2/Home) 2
2. Home station in another call area (VK2/P to VK3 or JA Home) 5
3. Portable station in same call area (VK2/P to VK2/P) 10
4. Portable station in another area (VK2/P to VK4/P or WA/P) 15

These are an example only and this method can be applied to the rest of the scoring table.

RESULTS

Well, it seems that the VK4's were out in force again this year and their efforts certainly have paid off. Letters from some of the VK4 stations have mentioned that the weather conditions were quite favourable this year and the normal rainy weather was not experienced.

Quite outstanding efforts have been achieved by many other stations as the results show.

THE RESULTS

SECTION A — 24 hour

Call	Points	Call	Points
VK5QX*	1887	VK4XZ	526
VK5ABS	1151	VK3DHJ/4	413
VK5AZF	845	VK2DBA	365
VK5ZF	775	VK2UC	362

— 6 hour

VK3WP*	956	VK2AMV	225
VK2EOR	776	VK3XU	198
VK2BQS	591	VK2BQW	112
VK3ADW	547		

SECTION B — 24 hour. Nil entries.

— 6 hour

VK4VDG*	204	VK2JM	100
VK2BRC	150		

SECTION C — 24 hour

VK5VD*	1157		
— 6 hour			
VK3SP*	1274	VK1DL	652
VK2EL	1139	VK2ABZ	478

SECTION D — 24 hour

VK4WIZ*	19151	VK4WIP	3591
VK3ANR	10932	VK5BW	3145
VK4WII	6355	VK5LZ	2851
VK5SR	5535	VK5BPA	1070
VK5ACE	3602	VK2AGH	455

— 6 hour

VK4WIN*	4422	VK2AZD	1360
VK4WIM	1794	VK2BOR	1053
VK3BYY	1759	VK3DBS	883
VK4WID	1709	VK2PJ	743

SECTION E — 24 hour

VK3APC*	10667	VK1WI	3790
VK3ATM	10571	VK4CAU	3502
VK3BML	8998	VK3AWS	3332
VK2DBK	7767	VK2BTZ	2073
VK2WG	7003	VK8DA	1541
VK3XK	3809	VK3BHD	1429

— 6 hour

VK3SAS*	2708	VK3BSP	1147
VK3ER	2096	VK3AUI	1102

SECTION F — 24 hour

VK3YIW*	1724	VK2KBN	1016
VK2YUP	1609	VK4XZ	484
VK1WI	1469		

— 6 hour

VK2DCL*	467	VK5ZTP	192
VK2BGF	387		

SECTION G — 24 hour

VK2ZMP*	770	VK2DYS	265
VK4AIX	755	VK3YRP	300
VK4KAU	330		

— 6 hour

VK2CBF*	810	VK1NEJ	295
VK2LS	517	VK3LC	220
VK1RH	425	VK2AUI	80
VK7FD	315		

SECTION H — 24 hour

L30042*	500	VK4UG	160
L60036*	405		

The asterisk (*) denotes a certificate winner.

CHECK LOG

VK3ALD	
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24 HOUR SECTION — CW

Call	10	15	20	40	80	160	Corrected Total	Claimed Total
VK4XA	166,140	73,984	52,540	26,320	260	—	1,234,472	1,342,849
VK2AQF	25,092	20,976	14,194	16,590	—	—	833,480	335,016
VK3MR	—	—	131,189	—	—	—	131,189	137,703
VK6IT	—	28,220	19,116	80	90	—	111,590	115,221
VK2DMW	12,276	240	25,440	80	60	—	101,497	7,066,240
VK7RY	2,496	4,056	10,530	450	350	80	78,548	12,432
VK2DID	—	64,728	—	—	240	—	74,421	75,920
VK6JS	26,334	4,214	690	—	—	—	67,210	67,210
VK3MJ	—	60,270	—	—	—	—	60,270	58,696
VK6RZ	—	—	—	56,210	—	—	56,210	55,480
VK5GZ	6,336	960	7,107	—	10	—	43,419	14,773
VK5ZF	2,967	14,448	—	—	40	—	32,835	33,200
VK6FS	17,160	—	—	125	—	—	20,230	20,230
VK3XB	—	CHECK	CHECK	—	CHECK	—	CHECK	—
VK2APK	—	DISQUALIFIED	—	—	—	—	—	—

8 HOUR SECTION — CW

VK6AJ	96,882	6,624	3,607	—	—	—	215,718	210,066
VK3RJ	58,664	—	—	—	—	—	58,664	59,364
VK6YO	37,995	1,550	—	—	—	—	55,878	57,054

24 HOUR SECTION — CW

ZL2BR	79,413	87,892	110,979	—	12,040	—	848,487	283,738
ZL1AZV	35,280	24,186	2,856	106,275	—	600	800,151	888,410
ZL2RY	37,368	50,504	55,440	5,550	—	—	568,500	568,500
ZL2OM	2,925	115,730	10,560	16,905	2,080	—	478,772	503,880
ZL1HV	20,532	15,540	14,560	8,670	250	—	357,031	273,222
ZL2AGY	5,022	10,266	6,696	4,125	47,840	—	350,141	76,215
ZL1AIZ/2	—	—	—	161,272	—	—	181,272	184,600
ZL1AFW	29,631	16,472	6,240	125	—	—	157,242	53,811
ZL1AU	—	14,076	6,195	14,640	960	—	135,056	138,570
ZL3AGI	—	—	52,747	—	—	—	52,747	52,244
ZL4OP	7,200	2	5,104	80	—	—	29,870	12,355
ZL2BDC	CHECK	—	—	CHECK	—	—	—	—

8 HOUR SECTION — CW

ZL1BHQ	24,552	43,512	2,924	—	—	—	182,857	190,518
ZL2AH	—	28,800	—	—	—	—	28,800	55,112

SWL

L3-0042	1,512	816	2,944	240	360	—	27,264	30,300
ZL1-261	1,218	160	182	—	120	—	6,279	13,676

24 HOUR SECTION — SSB

VK5MS	231,795	95,778	553,593	7,650	—	—	2,607,534	929,096
VK2XT	196,386	129,276	9,561	3,045	150	1,500	1,088,035	1,127,850
VK2NDK	1,057,308	—	—	—	—	—	1,507,308	1,073,580
VK4LT	856,629	—	—	—	—	—	856,629	920,856
VK1RJ	79,395	—	139,567	—	—	—	499,948	224,924
VK6FS	171,072	760	31,088	—	—	—	418,320	418,320
VK4SF	239,302	—	—	—	—	—	239,302	252,384
VK6NLZ	139,620	7,038	—	—	—	—	219,372	223,560
VK5NOD	63,120	41,132	—	—	—	—	211,574	216,769
VK2KCN	178,284	—	—	—	—	—	178,284	179,356
VK3SM	48,327	—	17,372	—	—	—	135,171	131,404
VK2BQS	29,376	28,280	—	—	60	—	120,996	123,516
VK5ARO	—	—	103,986	—	—	—	103,986	103,509
VK6JS	50,985	1,600	713	—	—	—	89,090	89,090
VK5BW	—	—	—	46,610	1,700	—	67,640	48,590
VK4VDG	11,178	3,552	—	—	—	—	28,137	28,476
VK2PLY	18,881	—	—	—	—	—	18,881	19,392
VK3AIE	330	560	306	—	180	—	6,644	3,775
VK3ANP	4,590	—	—	—	—	—	4,590	4,284
VK3BEE	—	—	—	—	—	4,000	4,000	3,800
VK1LF	—	32	437	—	10	—	984	1,275
VK3DEB	—	—	812	—	—	—	812	812
VK3XB	—	—	—	—	—	—	CHECK	—
VK2APK	—	DISQUALIFIED	—	—	—	—	—	—

8 HOUR SECTION

VK5ABW	—	152,928	—	—	—	—	152,928	147,818
VK6YO	6,174	52,152	5,551	—	—	—	149,462	151,182
VK5OU	—	7,176	38,703	30	—	20	67,636	137,536
VK3BMA	—	75,660	—	—	—	—	75,660	74,890
VK5NSI	66,066	—	—	—	—	—	66,066	67,068
VK2VFI	46,428	—	—	—	—	—	46,428	46,428

24 HOUR SECTION

ZL1AZV	524,250	201,880	5,301	110,250	34,500	960	3,369,465	3,712,448
ZL2AH	124,509	71,990	85,860	—	540	—	967,315	926,187
ZL1AKY	579,820	—	—	—	—	—	579,820	593,712
ZL3AAX	67,260	16,830	4,214	—	—	—	229,415	235,238
ZL3ABC	2,736	4,080	72,912	—	100	—	167,936	171,738
ZL2RY	18,786	37,200	2,340	5	200	—	165,684	166,665
ZL2BKM	—	—	—	—	10,360	5,040	36,150	12,640
ZL2BIM	—	—	—	—	27,200	—	27,200	27,880
ZL3TX	714	432	—	—	3,600	200	7,364	7,714

Results of the VK/ZL 1981 Contest

Neil Penfold VK6NE
386 Huntriss Road, Woodlands, W.A.

And another years' contest result shows how the bands vary greatly from year to year. With the new W.I.A. Rules, many operators took the opportunity to work most of the bands available, and produce good scores. It's our intention to continue with similar rules in 1983. But please note, the '82 Rules are from NZART, and are quite different.

The results show quite a lot of differences in the claimed scores to the corrected score. This was generally brought about by the entrants, not removing dupli-

cate contacts from their logs. Perhaps we should follow the ARRL and say, "an entry WILL BE disqualified if more than two per cent duplicate QSO's are claimed for credit."

Everyone claimed to have abided by the Rules (but Rafferty has no part in the VK/ZL Contest). Some entrants indicated the Prefix first time worked, but did not attach a list of Prefixes worked. Many made very little effort to remove duplicates, perhaps feeling the task just too tedious to carry out. A contest should be a test of operating skill, and skill in operating means ACCURACY. From the number of log entries that we found incorrect, the serial number exchangers were not acknowledged, and also the number of incorrect callsigns noted in the logs has risen over previous years. Perhaps there are a lot of pirates around!

It has become apparent that many operators are unsure of what constitutes a Prefix, and we grant you, some are sure mystifying. UK2G --, UK2P --, UK2R --, UK2B --, are all UK2 prefix and not separate prefixes. Now some quotes from the top:—

"Congrats on the revamped format, it certainly kept things moving." "I like the idea of Prefix multipliers and method of points allocated for individual bands QSO's. Hope the '82 test is the same."—ZL2HQ. "It would be highly preferable that the Rules remain the same from year to year."—ZL2BR. (We agree, but who is to decide which set of Rules are best. From log comments, our scoring system this year has met with great favour, yet our NZART counterpart doesn't agree with them.) "Conditions on 80m were terrible, also, seemed to be a few who didn't notice the change to a new set of numbers for each band."—ZL2AGY. "My first contest in 2 years of operating and I think I've got the bug—thoroughly enjoyed myself."—VK5ARO. "Is the eight hour section, eight hours summed over several periods or all within an 8 hour (start to finish) period."—Warren. (It is meant to be an 8 hour continuous period, e.g., 0001 to 0800 hrs.) "All band score calculations used a different formula from that of last year's contest, and would like to commend that this year's scoring method gives a much better deal to the person active on all bands."—Phil Baker. "Found this year's contest most excellent, particularly the new scoring format, and encouraging 160m."—VK3BEE. "Congrats on a contest with a purpose, to use and populate all amateur HF bands."—VK2XT. "Took me 10, 15 and 20m to get 1000 QSO's last year ('81) in about 15 hours, so think this one will be my swan song in DX contests. 43 years operating and getting too old to hear properly."—VK4LT. (Come on, Al, a couple more, just to show the young ones how to do it.)

And that finishes another Contest. Please remember, 1982 Rules are from NZART, and are different from 1981 WIA rules. Thanks to all those who participated. See you in '83.

VK6NE WIA VK/ZL Contest Manager
VK6FS Log Checker and Scorer

ZL4OP	3	—	750	—	—	240	4,284	2,117
ZL3HT	—	—	—	—	120	1,120	2,240	1,840

24 HOUR — CW
USING INTERNATIONAL SYSTEM

Call	Class	QSO's	Mult's	Points	Corrected Total	Claimed Total	Penally Unremoved Duplicates
VK4XA	M	1083	500	2504	1,234,472	1,342,849	17,528
VK2AYD	M	758	374	2170	809,145	214,515	2,435
VK2AGF	M	491	280	1191	333,480	335,016	—
VK6IT	M	354	198	587	111,590	115,221	678
VK2OMW	M	324	180	565	101,497	7,086,240	203
VK7RY	M	238	159	495	78,548	12,432	157
VK2DID	M	278	128	582	74,421	75,920	75
VK6JS	M	193	143	470	67,210	67,210	—
VK5GZ	M	192	123	353	43,419	14,773	—
VK5ZF	M	174	81	407	32,835	33,200	132
VK6FS	M	93	70	289	20,230	20,230	—
VK6RZ	40	148	77	730	56,210	55,480	—
VK3MR	20	582	227	582	131,189	137,703	925
VK3MJ	15	248	122	498	60,270	58,686	242
VK3XB	—	—	—	—	CHECK	—	—
VK2APK	—	—	—	—	CHECK	—	—

DISQUALIFIED

8 HOUR — CW

VK6AJ	M	391	229	942	215,718	210,068	—
VK8YO	M	180	110	509	55,878	57,054	112
VK3RJ	10	202	97	606	58,664	59,364	118

24 HOUR — CW

ZL2BR	M	1089	458	1904	848,487	283,738	23,545
ZL1AZV	M	598	351	2312	800,151	888,410	11,381
ZL2RY	M	788	375	1516	568,500	568,500	—
ZL2OM	M	611	330	1464	478,772	503,880	4,348
ZL1HV	M	445	258	1395	357,031	273,222	2,879
ZL2AGY	M	374	229	1529	350,141	76,215	—
ZL1AFW	M	344	219	718	157,242	53,811	—
ZL1AU	M	280	184	734	135,056	138,570	—
ZL4OP	M	153	103	290	29,870	12,355	—
ZL1AI2/2	40	280	130	1400	181,272	184,600	728
ZL3AGI	20	352	150	352	52,747	52,244	53
ZL2BDC	CHECK	—	—	—	—	—	—

8 HOUR — CW

ZL1BHQ	M	388	220	832	162,857	190,518	183
ZL2AH	15	160	90	320	28,800	55,112	29

LISTENERS

L3-0042	M	126	96	284	27,264	30,300	—
ZL1-261	M	57	39	161	6,279	13,676	—

24 HOUR — SSB

VK5MS	M	2316	721	3819	2,607,534	929,096	145,096
VK2XT	M	1166	364	3047	1,088,035	1,127,850	21,073
VK1RJ	M	934	312	1804	499,948	224,924	500
VK6FS	M	604	315	1328	418,320	418,320	—
VK6NLZ	M	427	181	1212	219,372	223,560	—
VK5NOD	M	489	171	1241	211,574	216,789	637
VK3SM	M	353	190	715	135,171	131,404	679
VK2BQS	M	349	140	886	120,998	123,516	242
VK6JS	M	228	151	590	89,090	89,090	—
VK5BW	M	135	89	760	67,640	48,590	—
VK4VDG	M	129	83	339	28,137	28,476	—
VK3AIE	M	55	44	151	6,644	3,775	—
VK1LF	M	28	24	41	984	1,275	—
VK3BEE	160	20	10	400	4,000	3,800	—
VK5ARO	20	477	218	477	103,986	103,509	—
VK3DEB	20	29	28	29	812	812	—
VK2NDK	10	1228	287	3884	1,057,308	1,073,580	40,178
VK4LT	10	1007	293	3021	856,829	920,856	28,324
VK4SF	10	464	174	1392	239,302	252,384	2,908
VK2KCN	10	358	166	1074	178,284	179,358	—
VK2PLY	10	100	83	300	18,881	19,392	19
VK3ANP	10	51	30	153	4,590	4,284	—
VK3XB	—	—	—	—	CHECK	—	—
VK2APK	—	—	—	—	CHECK	—	—

DISQUALIFIED

8 HOUR — SSB

VK6YO	M	352	226	662	149,462	151,182	150
VK5OU	M	373	182	482	87,636	137,538	88
VK5ABW	15	531	144	1002	152,928	147,618	—
VK3BMA	15	390	97	780	75,660	74,680	—
VK5NSI	10	242	91	726	66,066	67,068	—
VK2VFI	10	212	73	626	46,428	46,428	—

24 HOUR — SSB

ZL1AZV	M	1589	676	5128	3,369,465	3,712,448	97,063
ZL2AH	M	1070	454	2150	967,315	926,187	8,785
ZL3AAX	M	534	180	1277	229,415	235,238	445
ZL3ABC	M	475	258	656	167,936	171,738	—

ZL2RY	M	359	205	810	165,884	166,665	166
ZL2BKM	M	73	35	1090	38,150	12,640	—
ZL3TX	M	38	28	263	7,364	7,714	—
ZL4OP	M	37	28	153	4,284	2,117	—
ZL3HT	M	18	7	320	2,240	1,840	—
ZL2BIM	80	68	41	680	27,200	27,880	—
ZL1AKY	10	903	216	2709	579,820	593,712	4,676

PLEASE NOTE: It is our intention **NOT** to allow VK/ZL Contest contacts on the new "WARC" bands.

John Moyle Field Day Participants



Photograph from Geoff Tonkin

During the John Moyle Contest members of Warrnambool Amateur Radio Club set up a station at Crowes Lookout in the Otway Ranges.

Photograph shows the aerials which

were used to operate all bands up to 2 metres. The aerials used were a TH3 for the HF bands, 11 elements on 2 metres, 3 elements on 6 metres, half-wave dipole for 2 metres, a dipole on 80 metres and a 80 metre vertical.

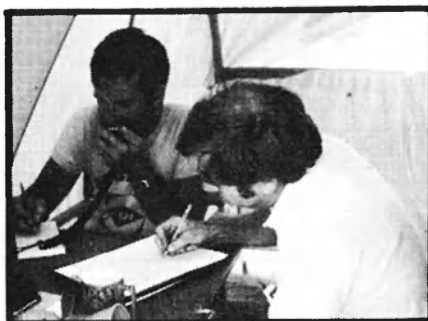
This year Brisbane North Radio Club also participated in the John Moyle Contest.

All bands were operated in the six-hour

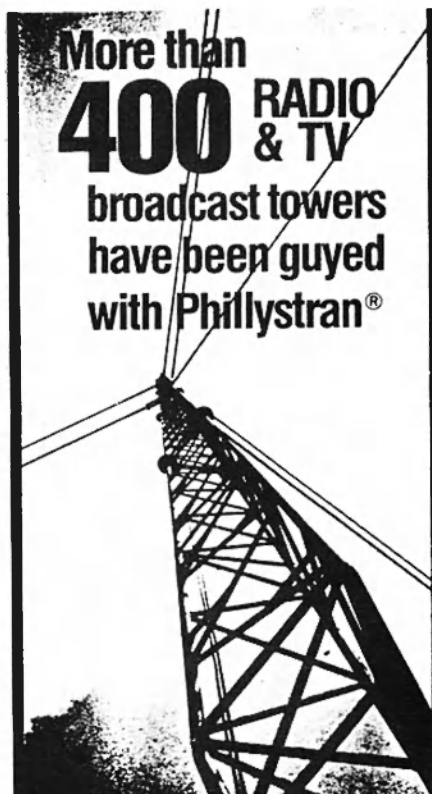
contest from the grounds of Padua College, at Kedron. The call sign used was VK4WIN, with a good score being obtained and an enjoyable day was had by all.



Margaret VK4NHL operating on the ten metre band.



Peter VK4VAG and Edd VK4ABX operating on fifteen metres.



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The Home Computer — to be or not to be

G. G. Down VK4XY
—From "Jimmy", September 1981

If you are a dedicated type, and you must be to be reading this magazine, the thought has probably crossed your mind, "Do I want to have a home computer?". The answer to this question is very simple — yes, everybody wants to have more things. So I'll put to you a second question. "Having got the home computer, what am I going to do with it?" The answer to this question is not so simple. In fact, I find it almost impossible to answer. I have been pursuing an answer for a long time now. I have asked many people and received answers ranging from "anything" to "everything". My immediate response is "will it clean my shoes?".

At this stage I am either cast aside as too far gone, or given a very intimate talk on the innards of computers and how to go about:—

1. Closing the windows when it starts to rain.
2. Cooking breakfast every morning.
3. Storing an XYL's recipes.
4. Turn on the sprinklers at sunrise, etc., and so the list goes on.

So far, I have not come across anything I can do with the home computer that I cannot do quicker and cheaper than with normal household resources.

However, I am still interested in the home computer and I will acquire one some day, probably before I find out what I am going to do with it.

It's the works inside that interest me. How do we get the thing to perform? Having got inside, I find it is not so complicated. The heart and/or the brain is the microprocessor and a lot of repetitive circuitry called RAM and ROM, or if you are really in luck PROM and EPROM.

These are connected to the brain and we communicate with the brain by means of other circuitry known as buffers, interface, etc. The buffers, interface, etc., convert our language to a language the machine can understand and respond to.

So there we have it. If we put all these things together into what we call a "black box" as distinct from the "black box" that we all know, there seems to be a remarkable similarity between a bloke sitting in front of a "blue box" communicating with his fingers and eyes and a bloke sitting in front of a "black box" communicating with his mouth and ears.

Have I found the answer to question 2? Communicating or programming, as it is known in the other, would seem to be the challenge that is issued by these machines. This is something that you can take at your own pace. If you really get fair dinkum and won't admit defeat to a man-made machine, you had better say farewell to the family, have your food parcel given to you through a small slot in the door and go QRT forever. ■

NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ
38 Wattle Drive, Wataonia 3087

THE RADIO COMMUNICATIONS ACT

The new Radio Communications Act is due to be introduced into Parliament during the coming Autumn session. The section which will perhaps be of most interest to the Amateur Radio Service, will be the legislation covering susceptibility and immunity of domestic electronics equipment to unwanted radio frequency energy.

The Amateur Radio Service must avail itself of every opportunity to ensure that the standards and figures laid down in the immunity section of the new Act, are fair and reasonable towards the amateur radio service. Amateur Radio operators are uniquely and eminently qualified to discuss the subject of radio frequency interference, including its causes and cures, as such interference is as old as radio itself. Without exception, the early radio inventors and pioneers were radio amateurs. The sophisticated communications systems, techniques, and equipments of today have had amateur radio as their starting point.

RESPONSIBILITY

Every amateur radio operator in Australia has a responsibility and a duty to ensure that he or she has a full understanding of the RFI and EMC legislation contained in the new Radio Communication Act. Don't leave it to others because you do not understand the legal or technical terms — "talk about it over the air and at club meetings, make a noise if you don't agree," but most of all — "DON'T BE APATHETIC." If bad legislation gets through Parliament, we will suffer this for ever.

Perhaps we should look at a few comments from the USA, where perhaps the main voice for RFI legislation is Senator Barry Goldwater, K7UGA — "In the face of an expanding electronic age, with radio frequency energy fields present everywhere and increasing all the time, home electronic equipment (such as television receivers, burglar alarms and the like) have suffered interference due to inability to reject unwanted signals. The solution to the problem consists of incorporation of inexpensive filtering methods into the design of such equipment."

INCIDENTAL RADIATION

This brings us to the other problem area for the amateur radio operator; again we can put the USA comments to good use in order to illustrate the position. After TVI and AFI the amateur's biggest problem is interference to his reception by man made noise. Overhead power lines

are without doubt the biggest contributor in this area. Man-made noise must be included in any RFI legislation. The FCC rules and regulations are quite interesting on the subject of PLI — "A device that radiates radio frequency energy during the course of its operation although the device is not intentionally designed to generate radio frequency energy. Operation of these devices is subject to the conditions that no harmful interference is caused by emission radiation or induction which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with licence regulations. An incidental radiation device (overhead power line) shall be operated so that radio frequency energy that is emitted does not cause harmful interference. In the event that harmful interference is caused, the operator of the device shall take all steps to eliminate the interference."

Although the Australian power generation and distribution authorities are working on the problem of incidental radiation; perhaps the right sort of legislation would help to reduce or eliminate those "high-level" spark transmitters. Of course, more and improved direct co-operation by the power generation and distribution authorities would be a large contribution towards reducing the pollution caused by power lines.

DIRECTORY OF ASSISTANCE

Co-operation by a large number of equipment manufacturers and agents was reflected in the RFI Directory of Assistance, March Amateur Radio magazine. Unfortunately, the DOC information was omitted due to circumstances beyond our control. However, this information is now contained below, and the next time the directory is published, it will be as complete as possible. ■

EMC (Electro Magnetic Compatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO
VK3QQ,
Federal EMC Co-ordinator, QTHR.

OPERATIONS BRANCH OF THE DEPARTMENT OF COMMUNICATIONS

HEADQUARTERS

Assistant Secretary:

Marland House, 570 Bourke Street,
Melbourne, 3000

(03) 609 1555

Postal: GPO Box 5412CC, Melbourne, 3001

REGULATORY AND LICENSING SECTION

NEW SOUTH WALES

State Manager:
MLC Building,
105-153 Miller Street, North Sydney, 2060 (02) 922 9111
Postal: PO Box 970, North Sydney 2060

District Radio Inspector:
Australian Government Offices,
Molesworth Street, Lismore, 2480 (066) 21 6393

District Radio Inspector:
741 Hunter Street, Newcastle West, 2302 (049) 69 3399
Postal: PO Box 2189, Dangar, 2309

District Radio Inspector:
28 Bridge Street, Tamworth, 2340 (067) 65 7969
Postal: PO Box W75, West Tamworth, 2340

District Radio Inspector:
8 Station Place, Wagga Wagga, 2650 (069) 21 1855
Postal: PO Box S266, South Wagga Wagga, 2650

District Radio Inspector:
Aust. Govt. Offices, 86-88 Market Street,
Wollongong, 2500 (042) 28 9611
Postal: PO Box 1766, Wollongong, 2500

VICTORIA

State Manager:
5th Floor, 14 Queens Road, Melbourne, 3004 (03) 26 6921

District Radio Inspector:
114 Armstrong Street South, Ballarat, 3350 (053) 31 1317

District Radio Inspector:
44a Nunn Street, Benalla, 3672 (057) 62 3288

District Radio Inspector:
Hills Bazaar Bldg., Bath Lane, Bendigo, 3550 (054) 43 1110
Postal: PO Box 458, Bendigo, 3550

District Radio Inspector:
Australian Government Centre,
79-81 Raymond Street, Sale, 3850 (051) 44 4555

QUEENSLAND

State Manager:
10th Floor, Aviation House,
Cnr. Wickham & Ballow Streets,
Fortitude Valley, 4006 (07) 52 8822
Postal: PO Box 555, Fortitude Valley, 4006

District Radio Inspector:
Lonsdale Court, 49 Walker Street,
Bundaberg, 4670 (071) 72 2135
Postal: PO Box 862, Bundaberg, 4670

District Radio Inspector:
State Government Insurance Office,
Cnr. Shields Street and The Esplanade,
Cairns, 4870 (070) 51 4333
Postal: PO Box 1225, Cairns, 4870

QUEENSLAND (cont.)

District Radio Inspector:
2A Sydney Street, Mackay, 4740 (079) 51 1828
Postal: PO Box 337, Mackay, 4740

District Radio Inspector:
38 Marian Street, Room 1, Mt. Isa, 4825 (077) 43 6672
Postal: PO Box 1842, Mt. Isa, 4825

District Radio Inspector:
6 East Street, Rockhampton, 4700 (079) 27 6922
Postal: PO Box 1401, Rockhampton, 4700

District Radio Inspector:
52-50 Sturt Street, Townsville, 4810 (077) 71 5685
Postal: PO Box 522, Townsville, 4810

SOUTH AUSTRALIA

State Manager:
QBE Bldg., 108-116 King William Street,
Adelaide, 5000 (08) 212 2153
Postal: GPO Box 2248, Adelaide, 5001

District Radio Inspector:
40 James Street, Mt. Gambier, 5290 (087) 25 6170
Postal: PO Box 1545, Mt. Gambier, 5290

District Radio Inspector:
Customs House, Horwood St., Whyalla, 5600 (086) 45 5999
Postal: PO Box 575, Whyalla, 5600

WESTERN AUSTRALIA

State Manager:
1st Floor, CAGA Centre,
256 Adelaide Terrace, Perth, 6000 (09) 325 5877
Postal: PO Box 6189, Perth, Hay St. East, 6000

TASMANIA

State Manager:
1st Floor, Continental Building,
162 Macquarie Street, Hobart, 7000 (002) 20 5011
Postal: PO Box 63, Sandy Bay, 7005

AUSTRALIAN CAPITAL TERRITORY

District Radio Inspector:
7 Sargood Street, O'Connor, 2601 (062) 47 0677
Postal: PO Box 40, O'Connor, 2601

NORTHERN TERRITORY

District Radio Inspector:
CML Building, 61 Smith Street, Darwin, 5790 (089) 81 5566
Postal: PO Box 2540, Darwin, 5794



LETTERS TO THE EDITOR



Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

202 Frankston-Flinders Road, Balmarring 3926

The Editor,
Dear Sir,

During the ROATC call-back a southern amateur in his twilight years happened to mention that his rotary beam had been damaged in a windstorm and that he was unable to effect repairs.

The gentleman concerned has seen some seventy-five summers and is not as spry as he once was.

He was, therefore, very grateful when I called to repair the beam for material cost only.

The thought did occur to me that the clubs would, perhaps, be agreeable to accepting the responsibility of helping those in need by having younger members who visited such persons at agreed intervals or who will come upon request, to perform tasks which are no longer within the capabilities of the "old-timers."

Volunteers?

73. Syd Clark VK3ASC ■

The Editor,
Dear Sir,

"PEDANTIC"

I have just read the letter from Harry VK6WZ (A.R. Feb. 1982). Whereas I lay no claim to journalism, I would like to comment on the writer's little excursion into pedantry and inconsistency.

To "journalize" in CW has a specific meaning to a specialist group of people and I'm sure that no disrespect to journalists was ever intended, just as a computer with a RAM board fully populated casts no aspersions on sheep or the human race.

We have, in amateur radio, a sophisticated hobby using sophisticated equipment with a sophisticated jargon but that does not mean that we are engaged in sophistry.

Your correspondent claims to have been "... a ham since 1937." Everyone, specialist or not, knows that ham is the ass end of the pig ... which has been cured; most folk know that amateurs are incurable. I therefore like to think of Harry as a licensed amateur ... with a sense of humour.

Yours faithfully,

Harold Wright VK2AWH ■

Post Office Residence, Pine Ridge, NSW 2343
26th February, 1982

The Editor,
Dear Sir,

In answer to the query raised in the February "How's DX" regarding confiscation of mail in some parts of the world.

I encountered this problem some years ago with migrants sending mail back home and, apart from forwarding mail by registered post, it was found that using the cheapest form of envelope, preferably the old manila variety, and using a heavy postmark to almost obliterate the stamp usually resulted in the mail getting through.

It is suggested that anyone encountering this problem try this and ask their local postmaster if he would put a heavy postmark over the stamps.

Yours sincerely,

Tony Badger L20001 ■

Post Office Box 122, Avondale Heights 3034
The Editor,
3rd December, 1981

Dear Sir,
I am writing on behalf of the Keilor Radio Amateur Group (K.R.A.G.) to inform you about our club.

The Group was formed to serve the western suburbs of Melbourne and meets on the second Thursday of the month. The meetings are held at the Keilor Heights High School in Quinn Grove, East Keilor, commencing at 7.30 p.m.

New members are welcome and all enquiries may be addressed to: Post Office Box 122, Avondale Heights, Victoria, 3034.

Yours faithfully

Paul Engler VK3XDE, Hon. Secretary. ■

74 Fravent Street, Toukley, 2263
The Editor,
22nd December, 1981

The Editor,
Dear Sir,

Re page 39 of December A.R. by VK5WV on XZ5A Burma.

The following comments may help Bill to make up his mind by providing some background to the complex situation in Burma. I worked in Burma 1979-80 in the Aviation/Communications field as a U.N. official at the request of the Burmese Government and through my work I had fairly extensive contacts both at Government and Diplomatic levels.

Because of the Socialist/Military Government and the Isolationist policy, embraced since WW II, it is only recently that foreigners have been allowed into the country and even now visitors/tourists can only stay 7 days on a non-renewable visa. Communications are even worse than during WW II as the equipment and vehicles brought in by Britain and US wears out. With a normal wage of \$A1.00 per day there is considerable unrest which, I was informed, was fermented by neighbouring countries of different ideologies. This is particularly evident in the eastern mountainous Kachin, Shan and Kayah divisions (forming part of the "Golden Triangle") where there are approximately 15 national groups and where military operations take place continually. Even as far west as Heho, the airport, although under military protection by day, is virtually under miscreant/smuggler/rebel control by night. Foreigners (in particular, tourists) are not permitted to travel by road further than 50 km from Rangoon, although they can fly to authorised tourist places such as Mandalay.

I make no claim to be a political expert but I do know that the outer areas, being under the command of military men, with tenuous links to Rangoon, do not always carry out central government policy even if they know it. Also, Burma is no different to practically all other undeveloped nations in that what we call corruption is the normal way of life. I tried through personal contact with the Chief Engineer of Telecom to get an amateur licence but was told it was not in accord with Government policy. I tried through the UN to get the ear of the Minister without success.

My opinion, for what it is worth, is that the station in Burma is allowed to operate by the local area commander who has, like Lord Nelson, bad sight in one eye; especially if the opr can supply modern radio equipment which can (later?) be modified for army use.

Although there are isolated local areas of rebellion, which are constantly shifting, there is no "Government in exile" as such anywhere in Burma. The only slates (divisions) in Burma are: Sagalngi, Chin, Magwe, Arakan, Irrawaddy, Rangoon, Pegu, Tanasserim, Mon, Karen, Kayah, Mandalay, Shan and Kachin.

Sincerely, J. W. Faulkner VK2AZP ■

55 James Street, LaRoche, Tasmania 7307
16th March, 1982

The Editor,
Dear Sir,

I would like to reply to the third last paragraph of the article on page 37 of the March issue — "Listening Around" — by Joe VK2BXJ.

In the article, Joe states that many years ago his favourite US Amateur was Reg W6ITH, and I quote Joe, "I wonder what W6ITH would think of the little black boxes if he is still around today."

Well, I can answer Joe's question. Reg is still around today, and he would be one of the top Amateurs in USA today. For his little "black boxes" he uses love'y big "grey boxes" called Collins, plus many others.

He is very active in working the Satellites and so on.

Reg has been a leading amateur for many years and he is a great friend of a very good friend of mine — the famous Grote Reber, the Radio Astronomer, who built the first Parabolic Dish in USA. This Dish is displayed at Grote's home town, Wheaton, Illinois.

Reg recently sent me a book called "The Big Ear" by John Kraus, which I can recommend to all Amateurs.

So, Joe, Reg is still around.

Yours faithfully,

J. Davis VK7OW ■

2 Gannet Street, Mt. Eliza 3930
10th March, 1982

The Editor,
Dear Sir,

CO EX-WRAAF AND RAAF MEMBERS

In line with the other branches of the Armed Forces we are attempting to establish a regular net for ex-members of the WRAAF and RAAF. We would, therefore, be very grateful if you could see fit to publish this letter in your magazine so that we may gain some much needed publicity.

All former members, regardless of mustering, are welcome to join the net which is very much in its formative stages at present. Its future success, and the subsequent formation of any society, depends on the participation of as many former members as possible, including SWL's.

So that we may gauge the degree of interest and obtain as many suggestions and points of view as possible, I suggest that all interested operators join the net on the 2nd and 4th Tuesdays of each month on 3560 KHz ± at 1000z (2000 hrs. E.S.T.). Let us show that we can do as well as our compatriots in the "Senior" Services.

Any further information can be obtained from the writer but please enclose a SAE. Stations to listen for at the commencement of the net are VK3VWZ (Fred), VK3VVT (Alan) and myself (VK3DSW).

Yours sincerely,

Stan Williams VK3DSW ■

138 Webb Street, Mount Isa, O'd. 4825
21st March, 1982

The Editor,
Dear Sir,

I know we have all read and heard it before, but I feel I would like to comment. I have just been listening around the 15 m CW bands. As usual on a Sunday afternoon there is the usual VK7N -- on phone at 21.133 with a OSO with a P29 station.

After I listened for about 5 minutes the comment was made, "Let's move up 2 kcs, this CW is a damn nuisance."

I feel it's about time that the "gentlemen's agreement" was scrapped and positive rules were laid down about operating phone in the so-called CW parts of the bands. I know when I was trying to improve my CW as a novice, many weekends were wiped out by stations operating phone in the narrow novice CW sections, and mainly VK stations at that.

73s to all,

Mike Hastings VK4BFO (ex-VK4VFO) ■

142 Sutherland Road, Beecroft, NSW 2119
27th March, 1982

The Editor,
Dear Sir,

HAVE YOU BEEN CAUGHT?

I bought an expensive transceiver (\$1,700). In no time it started to go wrong. The Agents dutifully fixed it up each time free of charge.

They even were generous enough to give me an extra year's warranty. I cannot speak highly enough of them. But now, the warranty has expired, and the bumpy ride begins!

I have just got the set back (again!) and find that the parts renewed cost \$2.04, and (fasten your seat-belts) the labour cost was \$105.00.

Two and a half hours at \$42.00 per hour. I have no doubt that a technician capable of poking about inside a sophisticated set deserves every cent of \$42.00 per hour.

But, my question is, seeing these high-fallutin sets go wrong every time I burp, can ordinary mortals afford to buy such traps? In other words, has the "State of the Art" got out of hand, and we need to get back to good old reliable valve sets that go and go and go?

Is there anyone else that has been caught?

Yours faithfully,

Norman Blake VK2NDG ■

LETTER TO THE SECRETARY

9 Cressy Street, New Town, Tasmania 7008
3rd January, 1982

The Secretary,
Federal Executive,
Wireless Institute of Australia,
Box 150,
Toorak, Victoria.

Dear OM,

Having been elevated to Life Membership of the Institute, I do not have a Bill rendered to me for the services provided by the Institute. I, therefore, make my donation to the Institute Funds, and forward my cheque for \$28.50 to be split in three ways, the Federal component, the VK7 Divisional component, and the VK7 Southern Branch component.

We are beginning to see the fruits of the work done by the Institute in connection with WARC 79 by the allocation of the 10 MHz band beginning this month. On the law of averages, I should be no more by the time WARC 99 arrives. Even if I should still be alive then, my chances of being able to contribute to WARC 99 funds would be at best limited if at all. It would, therefore, be my suggestion that the Federal Convention later this year should consider instituting an Annual Levy towards WARC 99 for all members. 50 cents a year from now till then from the entire membership would provide a nice sum. Amateur representation at WARC is absolutely necessary.

With respect to WARC 79, I wish to add by personal congratulations to VK3KI and VK3ADW for what they did achieve to advance this truly International hobby. Their work was really great in that they made the time available to go to the actual WARC itself. I do, however, recognise that there was a lot of back-up work to support them, and that work, too, is worthy of the highest commendation. I hope that the Federal body can maintain an on-going preparation for the next major WARC as well as the smaller specialised WARC's in between.

My final remarks relate to the continuing good work by Ron VK3OM and Bill VK3ARZ in providing the Federal notes so regularly. This contribution does keep those of us who are remote from the major centres in touch with what is going on to enhance our hobby.

Yours, truly,

Ian A. Nichols VK7ZZ ■

**THE VK3BWW
FORMULA FOR
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**HIGH QUALITY
AT LOW COST**

BEAMS

3 EL 10 & 11m	\$69.00
3 EL 15m	\$77.00
3 EL 20m	\$149.00
6 EL 6m	\$102.00
5 EL 2m	.....	\$34.00
9 EL 2m	.....	\$56.00

DUOBANDER

3 EL 10m, 3 EL 15m \$139.00
Prices include Gamma match

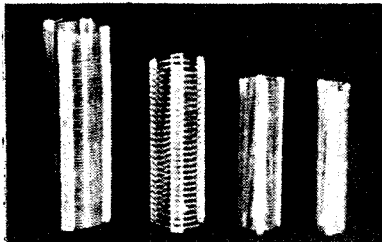
Our beams are easy to assemble and adjust. Entirely **NEW CONCEPT** — **NO NUTS OR BOLTS.**

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INDUCTANCES**



No.	Diam.	Turns per	Inch Length	B. & W. Equiv.	Price
1-08	1/2"	8	3"	No. 3002	\$1.50
1-16	1/2"	16	3"	No. 3003	\$1.50
2-08	3/4"	8	3"	No. 3006	\$1.90
2-16	3/4"	16	3"	No. 3007	\$1.90
3-08	1"	8	3"	No. 3010	\$2.15
3-16	1"	16	3"	No. 3011	\$2.15
4-08	1 1/4"	8	3"	No. 3014	\$2.40
4-16	1 1/4"	16	3"	No. 3015	\$2.40
5-08	1 1/2"	8	4"	No. 3018	\$2.65
5-16	1 1/2"	16	4"	No. 3019	\$2.65
8-10	2"	10	4"	No. 3907	\$3.85

Special Antenna All-Band Tuner Inductance

(equivalent to B. & W. No. 3907-7")

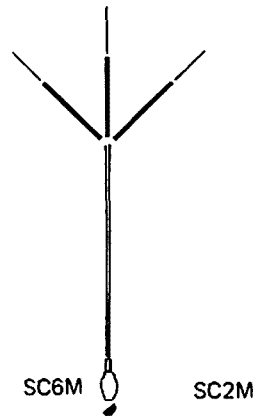
7" length, 2" diameter, 10 turns per inch,
\$6.85

References: ARRL Handbook, 1961; "QST", March 1959; "Amateur Radio", December 1959.

Take the hard work out of Coil Winding — use "WILLIS" AIR-WOUND INDUCTANCES

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with
SCALAR**

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6ft Heavy duty fibreglass whips.
High radiating efficiency.

Power: 100W Average
400W P.E.P.



	MHz
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HA615T	21 - 21.45
HA620T	14 - 14.35
HA640T	7 - 7.15
HA680T	3.5 - 3.70

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This month we have two award columns as this will be Bill VK5WV's last column and Mike VK6HD's first.

Many thanks to Bill for doing such a fine job and welcome and good wishes to Mike. (Ed.)

Bill's Column

Bill Verrall VK5WV
7 Lilac Avenue, Flinders Park, S.A. 5025

Here are details of three awards which are available from some of our near neighbours.

BIRD OF PARADISE AWARD

This award has been available for some years from the Papua New Guinea Amateur Radio Society for contacting P29 stations. The Bird of Paradise is a unique native bird which has been adopted as the national emblem for PNG and appears on the P29 flag.

Amateur stations in Oceania must contact 7 Papua New Guinea (P29) stations in at least 5 provinces. Other stations must contact 5 PNG stations in at least 3 provinces. The provinces are West Sepik, Western, South Highlands, Chimbu, Madang, Morobe, New Ireland, East New Britain, Central, Milne Bay, East Sepik, Enga, West Highlands, Gulf, East Highlands, Manus, West New Britain, Northern, Capital District and North Solomons.

Only QSO's after 16th September 1975 count and any authorised band and mode is acceptable.

Send log details only and 10 IRC's to the Awards Committee, PNG ARS, PO Box 204, Port Moresby, Papua New Guinea.

DESCRIPTION

This award is printed in three colours on high quality matt card. The map outline is in yellow, with motif and artifacts illustrations in red and yellow and all printing in black. This is a most attractive award to display on the shack wall and measures 330 mm x 225 mm.

"4 FROM 44 AWARD"

This is a new award recently released by the Solomon Islands Radio Society.

The rules for the award are:

1. Contacts with any land based (NOT/MM) Solomon Islands (H44) Amateurs, made on or after 7th July 1978, Solomon Islands Independence Day, will count for the purpose of this award.

2. Four Solomon Islands stations must be contacted to qualify for the award. (Hence 4 from 44).
3. Contacts may be any band, any mode and endorsement will be given, if requested, as follows: Single (named) Band, Single (named) Mode, Satellite, etc.
4. For all Satellite Awards and on 50 MHz and above, multiple contacts with the same station separated by at least 12 hours will be acceptable.
5. Log extracts, certified by two other amateurs, National Society, or Radio Club etc., should show date, time (UTC), band, mode and station worked.

DO NOT SEND QSL CARDS UNLESS ENCLOSING EXTRA POSTAGE.

6. The award is also available to SWL's.
7. The cost of the award is US\$2.00, £1.00 or 12 IRC's and applications should be sent to:

The Awards Manager, SIRS, Box 418, Honiara, Solomon Islands.

DESCRIPTION

This is another award which should be displayed in the shack. The multicolour print illustrates some indigenous housing, common to the Solomon Islands, with all printing in red, measuring 250 mm x 210 mm. When the details in this print are examined, it is easy for the imagination

SOLOMON ISLANDS RADIO SOCIETY

4
FROM
44
AWARD

Number: SAMPLE
Presented to:
On:

Endorsements:

Solomon Islands Radio Society
President: SIRS

Solomon Islands Radio Society

to go astray, for example, no more shoes and socks, no more shaving, a fish trap tethered in the river, a pole with a TH6DX mounted thereon and I will stop there! With a little effort, most VKs should be able to qualify for this award if they have not already worked the required four H44 stations.

"CATCH 22" AWARD

This award is so new, that copies were not available from the printer at the time of writing. By the time you read this, some of the lucky operators including your truly, hopefully will possess this award.

The award is sponsored by the Hong Kong Amateur Radio Transmitting Society and is additional to the "Firecracker" and "Nina Dragons" awards which are also available from HARTS. If you have consistently worked your share of rare DX over the past couple of years, you may be able to qualify for the basic award with a little more effort. If you are starting from scratch, this award must be included in the very hard category.

Contacts with the following 25 countries ONLY are accepted for this award: VS6, CR9, BV, BY, XV, XW, XZ, S2, VU2-INDIA, A4X, A6C, HZ, ST, SU, 5A, TT, 5U7, 7X, TZ, 5T, CN, C6, C0, XE, and KH6.

There are three classes viz:

- Basic Class 3 — 15 countries
- Class 2 — 20 countries
- Class 3 — 25 countries

OSOs from 1st January 1980 are permissible and a log extract only signed by two licensed amateurs of equal or greater grade than yourself should be addressed to Awards Manager, HARTS, P.O. Box 541, Hong Kong, Asia.

The cost of the award is \$US7.00 or equivalent because this certificate has had artwork done by artists. As previously mentioned, I have not seen this award but it will be the same or better standard than the other two VS6 awards and therefore well worth the effort to qualify. Thank you Gill VK6YL for the details.

:: ::

This is my final contribution as FAM and I welcome Mike VK6HD/QTHR who is your FAM for the next three years.

May I thank all for their support during my term of office and I apologise to those few who have sent me information that I have not included in this column. The FAM is sometimes restricted with publication space and other priorities when writing for AR. However, I request that if you have recently received an award or have other information which you think may interest award hunters, make photocopies of the award, rules, material, etc., and post off to Mike who would welcome such information for possible inclusion in future editions of AR.

I would like to sign off with my final QSL card story. During 1981, I worked a reasonably rare DX station in the Northern Hemisphere. The operator was an Australian who was using a legitimately authorised callsign for the country under a reciprocal licensing agreement. He stated that anybody who required a QSL card should

send their QSL card to his VK callbook address and he would reply to all QSLs received when he returned to Australia. I decided that I would like to receive a QSL card for my QSO, to confirm the country on a different band. I sent along my QSL card with a self addressed stamped envelope to his VK callbook address and, after a wait of several months, received his QSL card in return. However, my envelope was unsealed, had "card only" written on the front and my 24 cent stamp had been removed and replaced with an 18 cent Christmas stamp. I guess it takes all types to be an amateur!

Good Hunting. ■

Mike's Column

Mike Bazley VK6HD
8 James Road, Kalamunda 6076

It is always difficult to step into someone else's shoes and it is doubly difficult when your predecessor has done such a good job. Many thanks, Bill, for your efforts over the past three years and I hope that I can reach your excellent standard.

My first problem is sorting through the 40 kg parcel of records that Bill forwarded to me. Yes, 40 kg. The mind boggles!! Please have patience during the next few months whilst yours truly attempts to digest this mountain of paper.

In an attempt to reduce cost to the Federal Executive and also to cut down my workload, could I ask that when applying for awards, information, certification or whatever, a stamped addressed envelope is enclosed for the reply.

From DXCC applications and updates already received it would appear that all are not conversant with the DXCC rules. These have appeared in A.R. previously, though I feel it would be worthwhile to reprint them. May I draw applicants attention particularly to Sections 3.4, 4.1, 4.3, 5.1, and 5.4.

QSL's are being accepted for IA0KM, Sovereign Military Order of Malta. This is an addition to the DXCC country list. The total number of countries now on the list, after deletions, is 319.

The IARU, Worked All Continents awards, are available via me. QSL's need to be forwarded to me, with return postage, and I do the rest. The certificates being forwarded to you from I.A.R.U. headquarters. A WAC certificate can be endorsed for: SSB, RTTY, SSTV, Phone, 1.8 MHz, 3.5 MHz, 50 MHz, 144 MHz and 432 MHz. The IARU also issue a Five-band and a Six-band WAC.

73, DX and Happy Hunting. ■

AUSTRALIAN DX CENTURY CLUB AWARD

This Award was created in order to stimulate interest in working DX in Australia and to give successful applicants tangible recognition of their achievements.

1.2 This Award, to be known as the "DX Century Club" Award, will be issued to any VK amateur

station, or a station operating in a previously Australian administered Territory, who satisfies the following conditions.

- 1.3 A certificate of the Award will be issued to the applicants who show proof of having contacted one hundred countries, and will be endorsed as necessary, for contacts made using only one type of emission.

REQUIREMENTS

- 2.1 Verifications are required from one hundred different countries as shown in the official Countries List.
- 2.2 The official Countries List will be published in "Amateur Radio" and will be amended from time to time as required. Should a country be deleted from the Countries List at any time, members and intending members will be credited with such country if the date of contact was before such deletion.
- 2.3 The commencing date for the Award is 1st January, 1946. All contacts made on or after this date may be included.

OPERATION

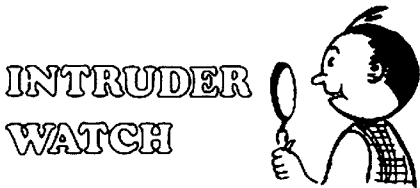
- 3.1 All contacts must be made with amateur stations working in the authorised amateur bands.
- 3.2 All contacts must be two-way contacts on the same band. Crossband contacts will not be allowed.
- 3.3 Contacts may be made using an authorised type of emission for the band concerned.
- 3.4 Credit may only be claimed for contacts with stations using regularly-assigned Government call signs for the country concerned.
- 3.5 Contacts made with ship or aircraft stations will not be allowed, but land-mobile stations may be claimed provided their specific location at the time of contact is clearly shown in the verification.
- 3.6 All stations must be contacted from the same call area by the applicant (except as below), although if the applicant's call sign is subsequently changed, contacts will be allowed under the new call sign providing the applicant is still in the same call area. If the applicant moves to another call area, contacts must be made from within a radius of 150 miles of the previous location to qualify for award purposes. If the distance of the new location from the old exceeds a radius of 150 miles, a separate application for a new award must be made claiming only contacts made from the new location.
- 3.7 All contacts must be made when operating in accordance with the Regulations laid down in the "Handbook for the Guidance of Operators of Amateur Wireless Stations" or its successor.

VERIFICATIONS

- 4.1 It will be necessary for the applicant to produce verification in the form of QSL cards or other written evidence showing that two-way contacts have taken place.
- 4.2 Each verification submitted must be exactly as received from the station contacted, and altered or forged verifications will be grounds for disqualification of the applicant.
- 4.3 Each verification submitted must show the date and time of contact, type of emission and frequency band used, the report and the location or address of the station at the time of contact.
- 4.4 A check list must accompany every application setting out —
 1. the applicant's name and call sign and whether a member of the WIA or not, and
 2. the details for each claimed station in accordance with the details required in Rule 4.3.
- 4.5 In lieu of forwarding QSL cards or other written evidence as set out in Rules 4.1 to 4.4 above, a list giving the details set out in Rule 4.3, certified by the Awards Manager, Secretary, or Council Members of a Division of the Wireless Institute of Australia, or two licensed amateurs known to the applicant, should accompany each application for membership or adjustment of verified country totals.

APPLICATIONS

- 5.1 Applicants for membership shall be addressed to the Federal Awards Manager, WIA, for the time being, accompanied by the verifications and check list with sufficient postage enclosed for their return to the applicant, registration being included if desired.
- 5.2 A nominal charge of \$1 or such other amount as may be determined from time to time, which shall also be forwarded with the application, will be made for the issue of the certificate to successful applicants who are non-members of the Wireless Institute of Australia.
- 5.3 Successful applicants will be listed periodically in "Amateur Radio." Members of the DXCC wishing to have their verified country totals listed, over and above the one hundred necessary for membership, will forward to the Federal Awards Manager the verification of contacts set out in Rules 4.1 to 4.5 above.
- 5.4 In all cases of dispute, the decision of the Federal Awards Manager and two officers of the Federal Executive of the WIA in the interpretation and application of these Rules shall be final and binding.
- 5.5 Notwithstanding anything to the contrary in these Rules the Federal Council of the WIA reserves the right to amend them when necessary.



Bob McKernan VK4LG
Box 50, Sandgate, Qld. 4017

Generally speaking, Australian amateurs are living in a fool's paradise. The day will surely come when we are very seriously troubled on all HF bands by persistent, immovable intruders. The thing that we can all decide is when this will happen. If you look forward to another 20 years of amateur operating, then you will have to do something about it right away, or the latter half of those years will be less than enjoyable. Do not limit your consideration of your hobby to the immediate future, or that may be all the future there is.

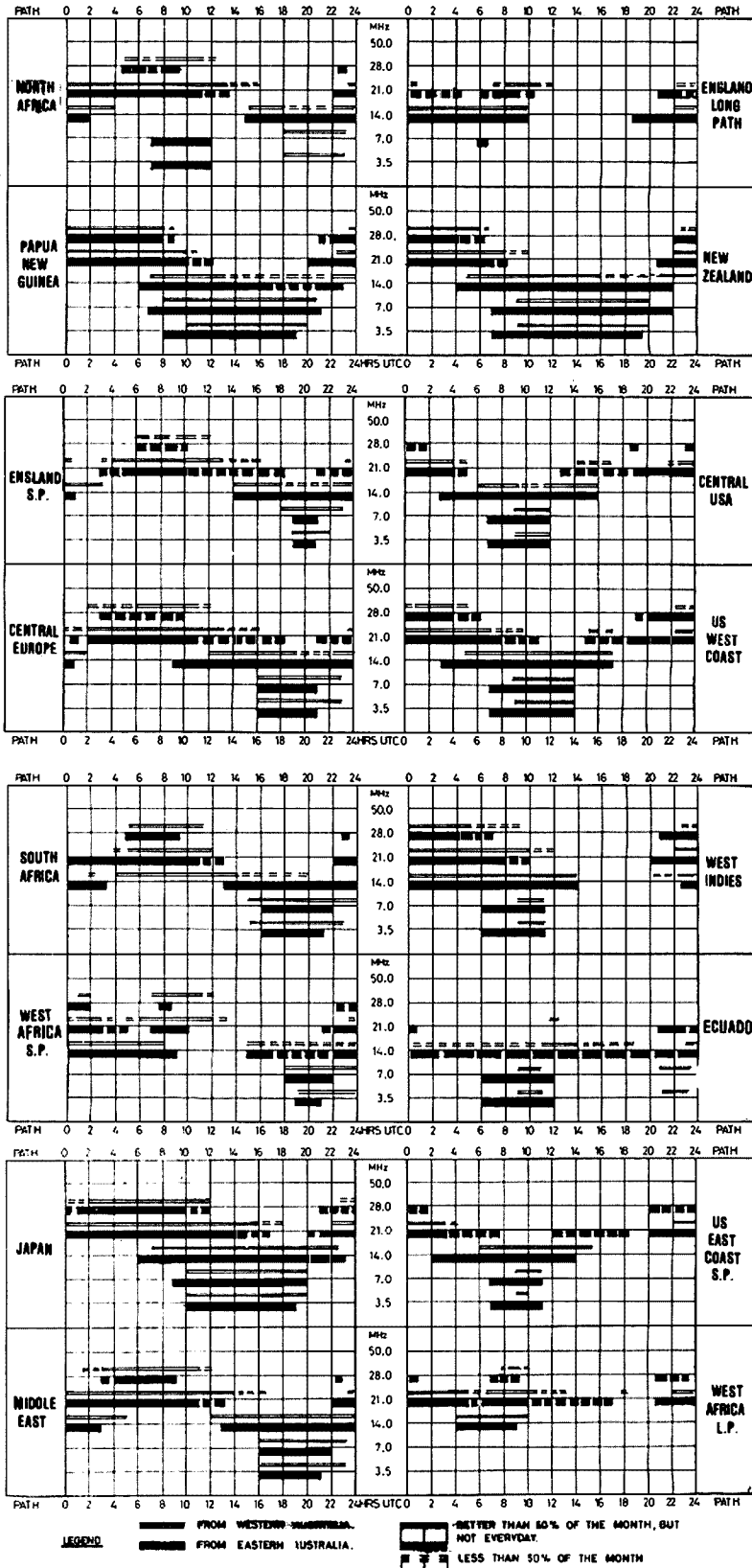
The long term future of amateur radio depends very much on an active Intruder Watch. The other guy will not get involved on your behalf, contrary to popular belief. YOU are the key to the future of amateur radio as an enjoyable hobby.

Now that you want to help, how do you go about it? Check previous IW columns in AR for a start. There has been a fair amount written on two of our most troublesome intruders, UMS on 21032 and CQ5 on 21115. Write all observable details of these intruders and send your observations to your division IW Co-ordinator. If you don't have his address, send details to me at Box 50, Sandgate, QLD. 4017.

If you hear these intruders, and can positively identify them by their call signs, I encourage you to operate exactly on their frequencies. Of course, these frequencies are really yours . . . so, if anybody has the right to use the frequencies it is you, not the intruders. So, if you have a full call, get on to 21032 CW and give those Russian ships curry.

IONOSPHERIC PREDICTIONS

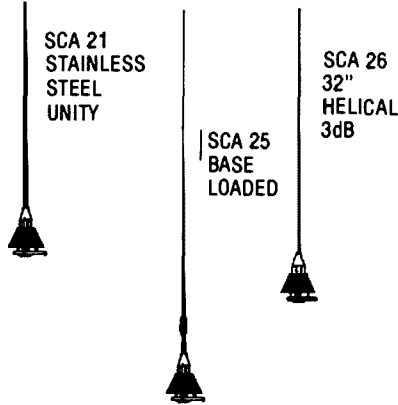
Len Poynter
VK3BYE



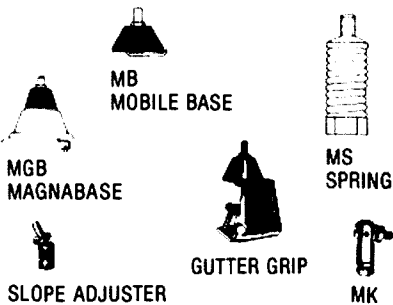
LEGEND: — FROM WESTERN AUSTRALIA. - - - FROM EASTERN AUSTRALIA. [Symbol] BETTER THAN 50% OF THE MONTH, BUT NOT EVERYDAY. [Symbol] LESS THAN 50% OF THE MONTH

Predictions courtesy Department of Science and Environment IPS Sydney.
All times universal UTC (GMT).

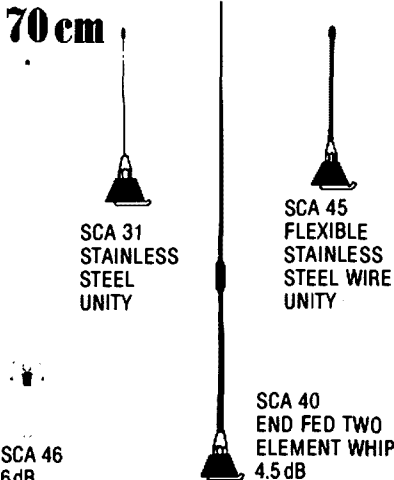
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SILENT KEYS

It is with deep regret that we record the passing of —

J. O. BAIL
E. J. BARTKUS
J. BATES
R. J. CAINS
W. G. CRITCHLEY
F. W. CROPLEY
A. M. MYERS
H. SARKADI

VK3ABA
VK7BE
VK2DZB
VK2BEN
VK5NGC
VK3LR
VK5AMY
VK2NIB

OBITUARIES

JAMES BATES VK2DZB
It is with regret I record the passing of Jim Bates VK2DZB, of Casino. Jim was afflicted with polio at the age of fourteen and in the between years has spent many hours confined to an Iron lung and bed. A breathing problem occurred during the period of December 26th and Jim was thus admitted to Lismore Hospital. After a few initial problems, Jim appeared to be going from strength to strength. Jim never awoke from his sleep on January 3rd, 1982.

Jim first entered radio via concerned people such as Russell VK2KEG, Lance VK2NVF and Al VK2VDZ. These lads were some of the few who were responsible for getting Jim "wheel chair mobile", thence to the outside world. CB radio came first, followed by further nurturing into amateur radio.

The road ahead was not easy and credit must be given to those who helped along the way and to the Lismore branch of D O C. for bringing the exams right to the wheel chair. Jim started with VK2NRT and progressed to the limited VK2YXJ and VK2KCW and, finally, with persistence made the top late last year.

Many friends were made throughout the world as well as very active roles in 10-10 chapters.

Touring amateurs in the area always received a generous sprinkling of hospitality and on air information.

Jim was cared for by his sister, Jannie, and brother-in-law John and their three sons.

Jim Bates VK2DZB, the lad from Tenterfield, but spending most of his forty-five years in the Casino area—is a beacon surely to be missed.

Adapted from Westlakes Newsletter — VK2KEB

Submitted by Bill Parker VK2KOI

ROBERT J. CAINS VK2BEN

Robert J. Cains passed away in Hospital on March 2nd, 1982. Bob had been in the Electrical and Communications field for many years. During WW II he worked with CSIRO on radar and after the war he was with Australian National Airways on communications. He had lots of stories to tell how the wartime radio equipment was taken out of DCS's and similar planes and virtually thrown away—not realising at the time that he would be interested in amateur radio in later years. Bob worked in USA for about 8 years before retiring in 1978. He joined the Amateur ranks with the call sign VK2BEN about the same time.

He will be missed both on and off the air by all who knew him. Our deepest sympathy is extended to his wife Helen his daughter Carol and son John, from all his friends.

Gordon Camp. VK2NZ



Say You
Saw It In
Amateur Radio

Advertisers' names on the montage, page 51, April AR, were cut directly from advertisers appearing in March AR. Any other regular advertisers inadvertently omitted was unintentional.

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HAMADS

- Eight lines free to all WIA members. \$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA current Call Book.

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VFO for Kenwood TS520. VK3AOT, QTHR. Phone (051) 67 1434.

6m Txvtr, solid state, all mode. Price and cond. to VK3BSF, QTHR. Phone (03) 277 0050.

Antenna Scope and GDO. Particulars and price to VK4UG, QTHR. Phone (07) 264 6098.

Army Radios WWII, any type, prefer working order, special needs — AR8/AT5 leads and control box, No. 19 complete or parts. Phone (058) 21 9999 BH, (058) 26 2427 evenings.

Drake T4-X (-/B, -/C), working order or not, power supply not needed, operating manual essential. Sydney metro. or 100 km radius from GPO only. Phone Claude VK2DLC on (02) 451 2577 or send details to: GPO Box 1846, Sydney, N.S.W. 2001.

Cubical Quad, 10/15 metres or 10/15/20 metres. Bob VK4NIL, 22 Magnetic Drive, Tamborine Mountain 4271. Phone (075) 45 1586.

WJ-8718 Rx with RCM, MCM, ISB, PRE, B10 optional modules if possible. Yenda, N.S.W. Phone (069) 63 6944.

Valves. Desperately in need of 6Y9 (2), 6ES8, 6HG8, 6EH7, 6U9, 6X9, 6GW9, 6CS6, 6GV8, 6JW8, 6CMS, new or used, 6Y9 most wanted. Ken VK6ZA. Phone (09) 398 7829.

AWA SS220 Marine Band HF Txvtr, service information and circuit wanted, will pay cost of photocopying or will arrange same, as preferred. VK2ZJF, QTHR. Phone (02) 969 4539.

Prop Pitch Motor/s, in working condition. Please write particulars and price to VK2VVM, C/- PO Box 53, Coleambally, N.S.W., 2707.

WANTED TO BUY OR SWAP

Converted Kraco CB, SSB and AM, operating on 10 metres, for a fully transistorised 2 metre FM mobile Txcr. Contact Gordon VK4KXB (VKANAX, QTHR). Phone (07) 269 3905.

GIVE AWAY

AR, April 1970 to Dec. 1981, free to VK6 club. L60136, QTHR.

Valves, type 57, 58, 80, 2A5, 6F7, NU77, NU78, cond. unknown, free to restorer/collector. L60136, QTHR.

TRADE HAMADS

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Amidon Ferromagnetic Cores: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R.J. & U.S. Imports, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken St., Oakley, 2223).

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FOR SALE

Collins KWM-2 with DX Engineering RF speech processor, 516F-2 power supply and spare tubes, \$750; Collins "S" Line, 75S-3B RX with 500 Hz CW filter, 312B-3 speaker console, 32S-1 Trans. with HD power supply, set of PCB's and ins. to build frequency synthesiser for 75S-3B, spare tubes, cables, handbooks, \$950; Mosley MP-33 3 element tri-band yagi, \$75; Katsumi MC-22 mic. compressor, \$30. VK3ARY, QTHR. (03) 277 4798.

Icom IC-22S, excellent cond., never mobile, no scratches or marks, \$210; Collins minor HT transformers, 115/230V 50/60 Hz primary, 5.0V, 6.3V, 5.0V 750V, 115V sec., Collins part No. 662-0314-00 new, in packing, four only at \$20 ea.; Eimac SK-510 power valve sockets, new, light tarnish, two only at \$12 ea.; Pye Cambridge transceiver, low band FM, very clean cond., \$15; Motorola MRF316, 80W 30-200 MHz 28V base stn. hi-rel power transistors, linear Po vs Pin at 150 MHz, with data, unused, two only at \$35 ea. Ian Cousins VK5IK, QTHR. Phone 085 672, ext. 252.

Commodore PET 2001 Computer, built-in green-screen, cassette recorder, power supply and keyboard, reset button, 8k ram, 12k basic rom, and monitor on board, user port and IEEE connectors, c.w. over \$200 software, can use for RTTY/CW Tx/Rx, log or index system, circuit analysis, entertainment, etc., \$600. John VK3BLN, QTHR. Phone (03) 459 1151.

Halliforters FPM300 Mk. II, 250W PEP, 10-80m, 24/12V, perfect, little used, \$275; Yaesu FL2000B amplifier, 1200W PEP, as new, \$325. Alec Dan VK2ABU, QTHR. Phone (02) 212 3833, AH 328 1261.

Discone Antenna, 280 MHz-288 MHz, ex Army, with coax. lead and carry bag, FP \$25. VK2NSE, OTHR. Phone (067) 46 1745.

Yaesu FT401, good cond., \$350. VK2SI, QTHR.

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Yaesu Digital VFO FV-707DM, to suit FT707, perfect condition, still under warranty, with cables, handbook and original packing, see it working before you buy, \$200 genuine. Contact VK3DGV, QTHR, Geoff. Phone (03) 560 3773.

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Yagi Beam Four Element Monoband, 15 metre, gives excellent gain and low SWR, very good condition, \$80. VK2ENT. Phone (02) 86 4596.

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Super-80 Computer, in case, basic in Rom, 48k Ram, manuals, 10 C10 cassettes, \$700. Peter VK3XCR. BH (056) 23 1431, ext. 8. AH (056) 25 2288.

Icom IC701, no PS, \$750 ONO; Icom IC551, 6m all mode with all options, \$550 ONO; Yaesu FT290R, 2m all mode portable, \$335; Teletype Model 15, incl. HB table and transformer, \$65; Hygain DB62, 6m and 2m duoband yagi, \$40; TH3JR triband yagi, \$75; 2m Dingo vertical, \$30; ATN 420-440, 15 el. yagi, \$85 (unused). Reg VK3KK, QTHR. Ph. (03) 652 8260 bus., (03) 469 4200 AH.

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Swan 350 Txcr, CW tone osc., power supply, mic. and stand, int./ext. speakers, manual; Kyoritsu SWR meter, KW E-ZEE match, \$400 the lot. VK3AXQ. Phone (03) 819 2005.

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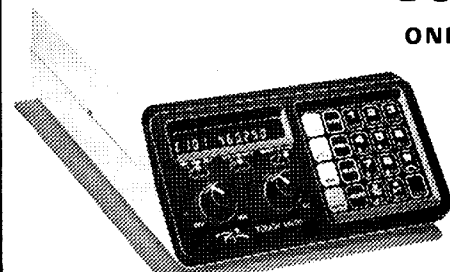
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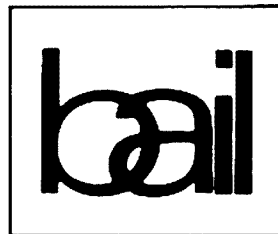
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(near corner of Garden St. and Maroubra Rd)

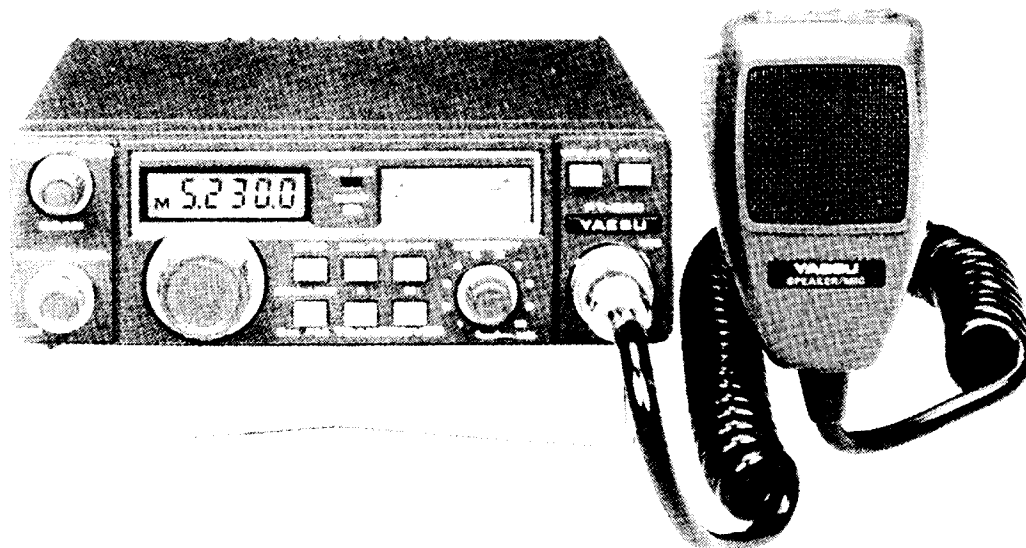
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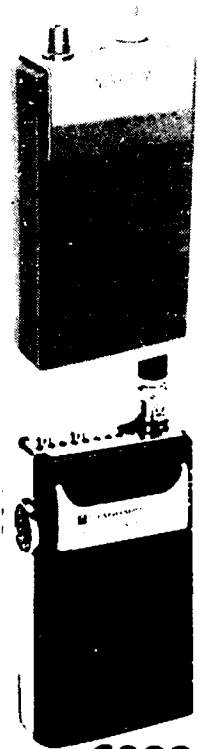
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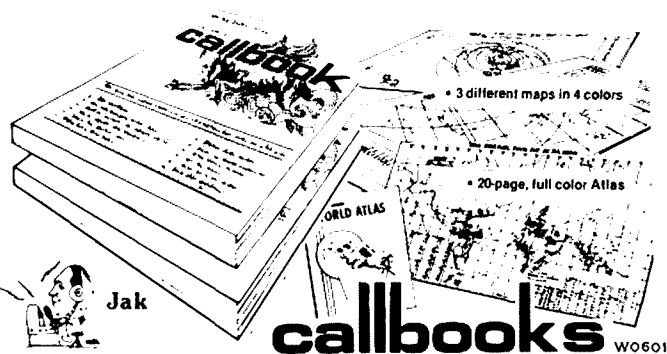


C800



SPECIFICATIONS

- Type: FM & AM
- Frequency Range:
 - a) 26-57 995 MHz Space 5 kHz
 - b) 38 FM MHz Space 12.5 kHz
 - c) 108-180 MHz Space 5 kHz
 - d) 380-514 MHz Space 12.5 kHz
- Sensitivity:
 - FM a) 26-180 MHz 0.6 V S/N 12 dB
 - b) 380-514 MHz 1.0 V S/N 12 dB
 - AM a) 26-180 MHz 1.0 V S/N 12 dB
 - b) 380-514 MHz 2.0 V S/N 12 dB
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 - FM More than 60 dB at -10 kHz
 - AM More than 60 dB at -10 kHz
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VOL. 50, No. 6
JUNE 1982

amateur radio

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FRONT COVER

Peter Wolfenden VK3KAU (right) WIA Federal President, welcoming NZART President "Jumbo" Godfrey ZL1HV (left) to the 1982 Federal Convention, watched by David Wardlaw VK3ADW and Jamie Pye ZL2NN.



Photo by Dave Shaw VK3DHF



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OPTIONAL CONTROL BOX

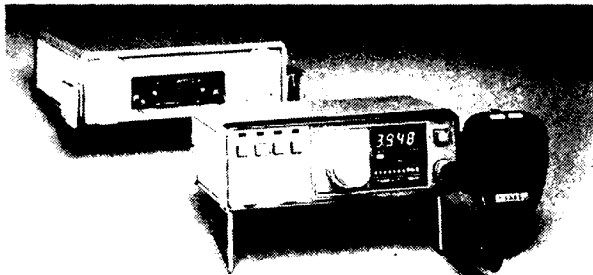
The S-72 control box option will allow you to connect the control head the 2 meter RF Deck and the 70 cm RF Deck together, thus enabling you to choose the desired band is simply by throwing one switch!

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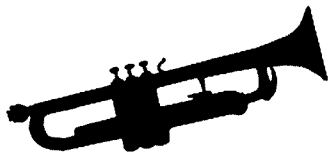
	FT-720RV	FT-720RU
Frequency coverage:	144.00—147.99 MHz 144.00—145.99 MHz	430—439.975 MHz 440—449.975 MHz
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Receiver type:	Double conversion superheterodyne	Double conversion superheterodyne
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Second IF:	455 kHz	455 kHz
Sensitivity:	0.32 μ V for 20 dB quieting	0.5 μ V for 20 dB quieting
Selectivity:	\pm 6 kHz (—6 dB) \pm 12 kHz (—60 dB)	\pm 12 kHz (—6 dB) \pm 24 kHz (—60 dB)
Power requirements:	13.8 VDC, negative ground 13.6 VDC (RVH model)	13.8 VDC, negative ground
Current consumption:	Approx. TX 3.5A (RV model) TX 6.5A (RVH model) RX 0.5A	Approx. TX 4.5A RX 0.5A
Case size:	150(W) x 50(H) x 247(D) mm	150(W) x 50(H) x 247(D) mm
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WIA NEWS

FEDERAL CONVENTION NEWS

These are a few extracts from the proceedings of the 1982 Federal Convention held in Melbourne, 1st, 2nd and 3rd May, 1982, as taken from the report of the editorial team consisting of Ron Henderson VK1RH, the ACT Div. Federal Councillor, and Wally Watkins VK2DEW, the NSW Div. Alternate Councillor:—

- Federal Council recognises that the subject of increases in Novice licence privileges has been regularly raised but the status quo has been and is maintained, and recommended that local contacts should be made where practical on the 10 metre band so as to relieve any congestion on the 80 metre band;
- A motion seeking an amendment to the Handbook to permit repeaters to identify as beacons was lost;
- The use of the 10 MHz band for WIA broadcasts is not to be encouraged;
- Efforts are to be made to promote co-ordination between third party traffic networks (which are to be supported) and authorised amateur emergency networks, and that third party traffic agreements with other countries must continue to be pursued;

- The Executive is to investigate the formulation of standards relating to the transmission of ASCII;
 - Rules for the affiliation of Australia-wide special interest organisations to the Federal body were adopted;
 - DOC is to be requested to permit the cross-linking of repeaters in general, but tone-burst access to repeaters was not passed;
 - Forward planning proposals were adopted for Implementation, including public relations for WCY83;
 - The new WIA Book, Volume 1, was launched by the Editor;
 - Continuing WIA pressures to exempt amateurs from the sticker or label proposals to identify the legality of possession of transmitting equipment (vide trial run in VK7) proved inconclusive in discussions with DOC guests at the Convention dinner.
 - Closer relations with other IARU societies, but particularly NZART, were enlarged upon also in discussions with NZART President, Jumbo Godfrey ZL1HV, one of the two NZART guests throughout the Convention.
- Further details are to be published in July AR.

P. WOLFENDEN VK3KAU,
Federal President. ■

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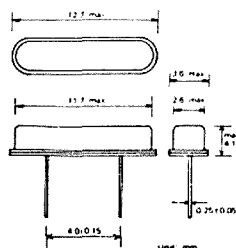
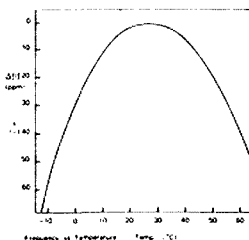
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SPECIFICATIONS

- | | |
|---------------------------------|--|
| 1. Nominal Frequency | 32.768 KHz |
| 2. Frequency Tolerance | +30 ppm/28° +1°C |
| 3. Drive Level | 1μW max. |
| 4. Series Resistance | 31.0 kOhms max |
| 5. Q Factor | 40,000 min. |
| 6. Parabolic Curvature Constant | Less than -0.04 ppm/°C
(Refer Fig. 1) |
| 7. Turnover Temperature | 28.0°C +5°C |
| 8. Capacitance Ratio | 700 max. |
| 9. Storage Temperature Range | -30°C +80°C |
| 10. Operating Temperature Range | -10°C +60°C |
| 11. Aging rate | Less than +5 ppm/year |
| 12. Shock | Less than 5 ppm for 50 cm
Hammer Shock Test |
| 13. Package Size | W0603 |



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An Audio Read-Out for the ICOM IC701 Transceiver

P. J. Hall VK7PH
Physics Department, University of Tasmania

A simple talking readout for the IC701 is described. The unit can be interfaced to the transceiver with no interference to the function or performance of either the transmitter or receiver. The normal visual readout remains unaffected.

The concept of an audio readout for digital equipment is not new and has been described by at least two other writers in connection with amateur equipment (Ref. 1, 2) and one specifically relating to the IC701 (Ref. 3). The present unit is very simple and uses readily available parts. The heart of the readout is a Telesensory Systems S2A speech synthesis board available locally (Ref.4). The board produces a distinctly synthesised voice but the output is completely intelligible. The synthesiser has a 24 word calculator vocabulary but in this application only the numbers 0 to 9 and "point" are spoken. The speed of the speech is adjustable. The S2A is supplied with a well written technical description and the detailed working of the synthesiser will not be discussed.

THE CIRCUIT

The auxiliary circuitry needed to make a readout is concerned with initiating speech, sequentially presenting the S2A with the BCD digits to be spoken, low-pass filtering and amplifying the reconstructed digital output and terminating the speech. The synthesiser is a PMOS device and is easily interfaced to TTL by using a +5V and -10V power supply which needs to be in the readout unit. An audio amplifier power supply is also provided.

This design speaks kilohertz and tenths of kilohertz. For example, a display of 14250.6 is spoken as "two-five-oh-point-six". I have omitted the megahertz for three reasons. Firstly, the blind amateurs consulted never experienced any difficulty in placing the band switch in the correct position. Secondly, the megahertz decoding in the IC701 is not straightforward and extra readout circuitry is needed for spoken megahertz. Finally, extending the lines necessary to provide externally decoded spoken megahertz seemed to be inviting RF feedback problems.

The readout is connected to the IC701 by a 20-conductor ribbon cable (4 BCD numbers, 2 earths, 2 spares). Five 8-way multiplexers (IC1-5) are used to provide a 5-bit speech code to the S2A speech inputs WP0-WP4. The digit code is normal binary and "point" is spoken by applying the address 13 (hex) to the module.

I used Fairchild 9312 multiplexers but the 74151 is an exact functional equivalent (the pin connections are different). A 74LS161, (IC6) is used as the multi-

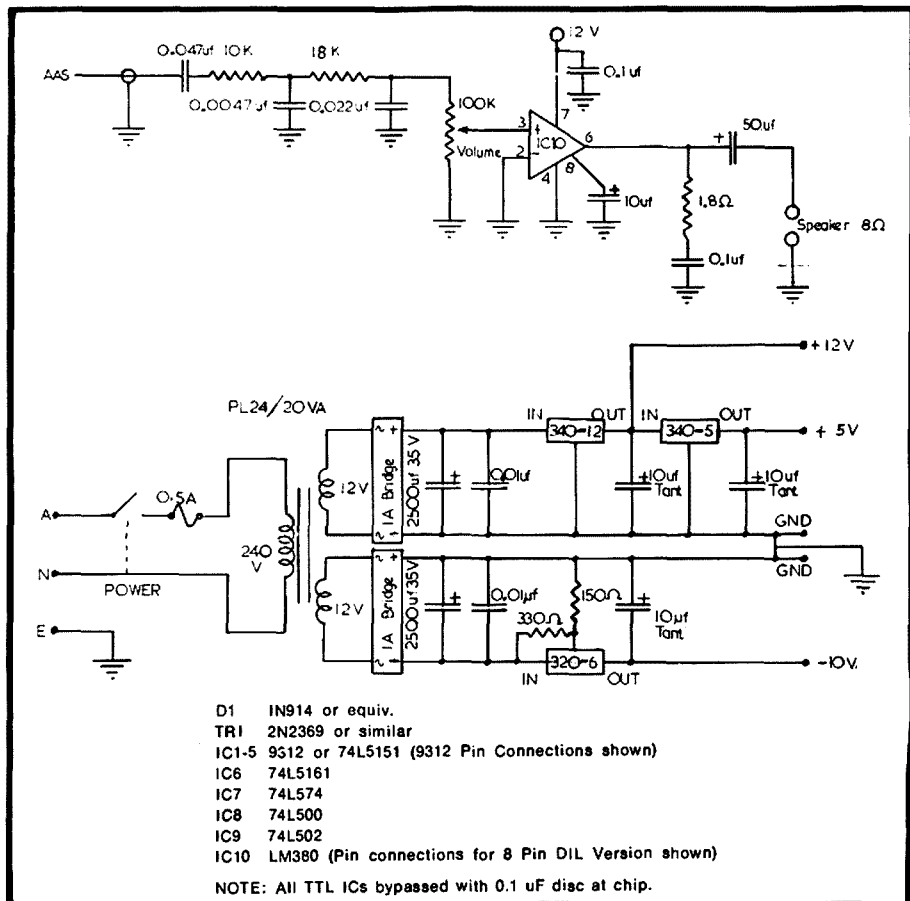
plexer address counter. When BUSY is de-activated (meaning that the current word has been spoken) IC6 is incremented and the multiplexers stepped to the next digit to be spoken. IC6 state 0000 is a "rest" one and the I_n inputs of IC1-5 are wired to give the "silence" code OD (hex) to the S2A. I_n inputs give the "point" address.

HOW IT WORKS

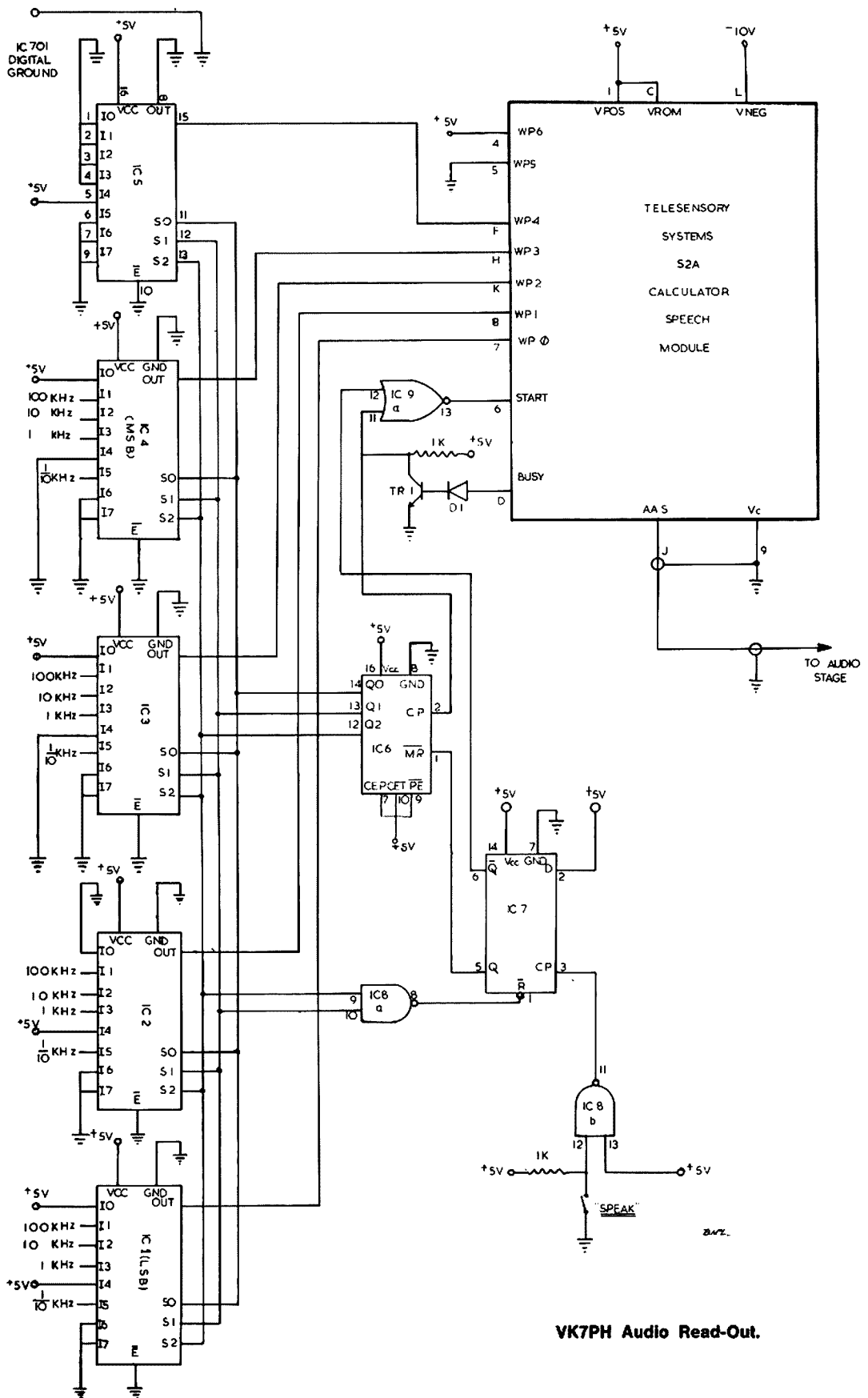
The basic function of the unit is as follows. When the SPEAK momentary contact switch is closed the D flip-flop IC7 is set causing the S2A START line to go high. After a short time BUSY goes low causing the collector of TR1 to go high, taking START low and incrementing IC6. The falling edge of START begins the utterance of the word on WP0-WP4. When the utterance is complete BUSY goes high, taking START high and re-commenc-

ing the speech cycle. When the state 110(6) is detected by IC8a the multiplex counter is reset and the system is ready for another SPEAK command. In order to have spare gates in the prototype both NAND and NOR gates (IC8, IC9) packages were used. The spare gates are easily eliminated if desired.

The low-pass filtered audio output is amplified in an LM380 stage and used to drive a 100 mm speaker. An effective baffle improves the speech quality. The cut-off frequency of the low-pass filter is not critical and can be changed to suit the speaker used. I have used the G3YFQ component values with good results. The S2A applications literature gives details of an optimum audio response. I do not recommend the use of active filter sections because indiscriminate design often



Power Supply and Audio Amplifier.



VK7PH Audio Read-Out.

generates poor impulse responses.

INTERFACING

Interfacing to the transceiver readout is straightforward but dismantling and re-assembling the IC701 requires care. See the IC701 circuit diagram for display driver pin connections. Check that the digit lines are connected in the correct order and with correct significance. I_1 is the hundredth of kilohertz digit, I_2 is the tenth of kilohertz digit. Digit MSBs connect to IC4, LSBs to IC1. Connect the two earth lines to earth at the driver ICs. The 20-conductor cable (600 mm long) may be brought out through one of the top ventilation slots, allowing the readout to sit on top of the IC701. A standard multi-pin connector can be used at the readout to allow easy disconnection.

With the readout housed in a metal box earthed via the mains and a short, heavy RF earth run through the IC701 ground lug no problems are evident on any band. The system has been checked with the transceiver running full power to antennas, running into a 400W linear amplifier and driving a 2 kW linear amplifier into an unshielded dummy load. Omission of the RF earth may lead to RF feedback, usually evident as FM on the transmitter output.

I thank my friends Doug Parish VK7AZ and Ian Nichols VK7ZZ for their unambiguous definition of the problem from the point of view of the visually impaired. Doug's transceiver was my first victim and he is happy to give on-air demonstrations of the readout (quaintly named "Henry").

REFERENCES

1. Ham Radio, June 1979.
2. 73 Magazine, April 1981.
3. G3YFQ, "Audio Display Unit for IC701", Publication details unavailable.
4. A.J. Distributors Pty. Ltd., P.O. Box 71, Prospect, S.A. 5082. Approx. \$109 (to disabled) plus tax. ■

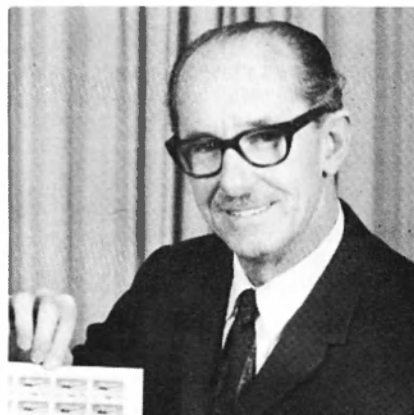
Young boy explaining why he wasn't putting money in his piggy bank: "It turns kids into misers and parents into bank robbers."



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Sir Frank Sharpe



Marcus Brims

SIR FRANK V. SHARPE, CMG, OBE(MIL.), ED, ex 4AZ, 1925, VK4FV

A 1925 Queensland Radio News article gives exceptional praise to Frank, who obtained the first licence to broadcast in Queensland and operated from the Trades Hall for the Radio Society of Queensland, but also carried out experiments from his Clayfield home from the early 1920s.

Frank's interests also included the Australian Military Forces and from joining in 1918 he became a Captain in Signals in 1928, and followed on in the service to become Lieutenant-Colonel in the early war years and Acting Colonel, I/Charge Administration, Queensland, for which he was awarded OBE(Mil.) and ED.

During WW2 Frank's radio equipment became dispersed and he later became deeply involved in pioneering helicopters in Australia, and subsequently in experimental fruit growing.

Frank took up amateur radio seriously a few years ago until failing health limited all activities.

For "outstanding services to the community" Frank was knighted in 1979. ■

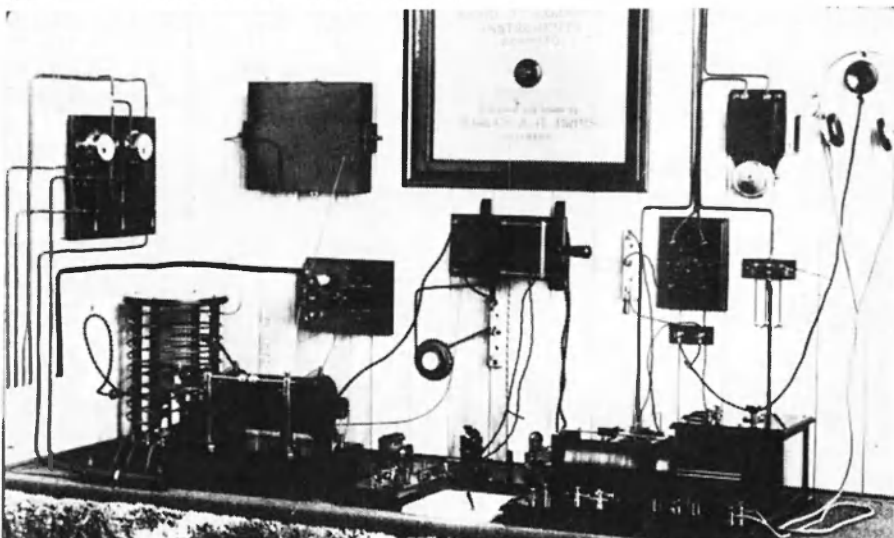
MARCUS BRIMS, XGA, licensed 1914

Marcus was born in Ingham in 1888.

After applying in July 1913 Marcus was granted a licence in February 1914 and is first on the list of that period. He was permitted to transmit on a wavelength of 160 metres with power of 72 watts, at Mareeba, and mentioned Andrew Couper of Mareeba, who had not yet been allocated a call sign, as a fellow experimenter. There were 10 Qld., call signs then. In 1914 Marcus, in accordance with war-time regulations, boxed up his equipment, and forwarded it to the PMG, and reduced his antennas to ground level.

The family operated a sawmilling business and the equipment was stored in four, what we would call cabinets, recovered after WW1, and one cabinet was opened up for display at a Gold Coast Hamfest in near perfect condition last year.

Marcus never returned to radio but instead built aeroplanes which carried Brisbane newspapers to the north for many years. Marcus retired recently from the very well known family ply and particle board business and enjoys relatively good health. ■



Marcus Brims' Early Experimental Station.

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IC290	2M Transceiver FM/SSB/CW Mobile	\$599	\$449
IC2KL	Solid-State Linear Amplifier 1kW	\$1729	\$1399
IC451	70CM Transceiver AC/DC	\$999	\$769
IC730	HF Transceiver	\$999	\$749
DAIWA			
CN620A	"X" needle SWR/PWR Meter	\$99	\$79
KENWOOD			
BS5	Pan display for SM220-TS520	\$75	\$63
PS20	Power Supply for TS120V	\$96	\$81
SP40	Mobile Remote Speaker	\$25	\$22
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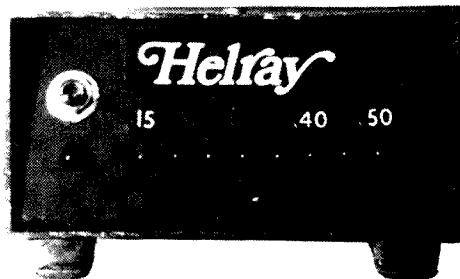
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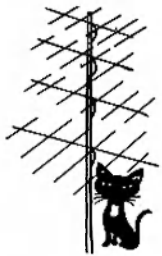
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People to People.

Staggered Stacking

G. J. McDonald VK2ZAB
59 Wldeview Road, Berowra Heights, NSW 2082



ABSTRACT: Stacked yagis and similar antennas are usually fed in phase with the corresponding elements parallel and in a plane perpendicular to the axis of the individual arrays, **Broadside Stacking**, or with the corresponding elements collinear and all elements of the individual arrays in the same plane, **Collinear Stacking**.¹

The author has never seen or heard of any departure from these rules being applied to an amateur antenna and it may be that we have forgotten that other arrangements are not only feasible but may be quite advantageous in some circumstances.

This article describes one such departure from the norm.

Following a change in QTH the author was faced with the need to reduce the substantial back and side lobes of a two metre antenna comprising four 6 element yagis stacked two alongside two.

The side lobes were expected to be reduced by decreasing the stacking distance but the back lobe was found to be inherent in the design of the individual yagis and overcoming this required a little more thought.

Experiments were carried out in an attempt to reduce the back lobe by altering the reflector spacing and by changing to trigonal reflectors. This proved to be a waste of time except to verify classic advice which pointed out that such methods would not work.²

The prospect of scrapping four yagis and starting from scratch was not attractive particularly as, apart from the back lobe, the performance of the antennas was quite satisfactory. A polar plot of the response is shown in Fig. 1. The gain is just over 10 dBd.

Fortunately antenna fundamentals provided a more acceptable solution in the form of the end fire couplet.

END FIRE COUplet (FIG. 2)

Signals from the front induce currents in element "a" 90° ahead of those in element "b". However, the currents from element "a" have to traverse a $\lambda/4$ line before joining the currents from element "b" at the junction "c" and their 90° lead is cancelled thereby. Thus currents from both elements are in phase at the junction.

Signals from the rear induce currents in element "a" 90° behind those in element "b" and after traversing the $\lambda/4$ line this lag is increased to 180° so that cancellation occurs at the junction.

The polar pattern exhibits a high front to back ratio as a result.

The principle of the end fire couplet was applied to the stack of yagis.

THE STAGGERED STACK (FIG. 3)

The bottom yagi of each vertically stacked pair was advanced on its mounting so that it projected $\lambda/4$ in front of the upper array. The phase lead in the forward direction thus introduced was cancelled by adding another $\lambda/4$ to the phasing harness con-

nected to the bottom yagi thereby ensuring that currents from both arrays arrive at the feeder junction in phase.

Signals from the rear are subject to 90° lag by the position of the bottom yagi relative to the top, plus the additional 90° lag caused by the extra length of phasing line. Cancellation occurs at the junction, i.e., the back lobe is eliminated.

PRACTICAL RESULTS (FIG. 4)

Without the staggered stacking arrangement the front to back ratio of the complete array would be the same as that for one yagi, i.e., 12.5 dB.

Theoretically, the back lobe could be cancelled completely but in practice several factors act to limit the degree of cancellation. The most important of these is probably the stacking distance. Obviously the signals from the rear must induce the same currents in both antennas of the staggered pair in order to achieve complete cancellation. This is possible only if both antennas occupy the same space as in the end fire couplet. As the stacking distance is increased so the cancellation departs from the ideal.

Nevertheless, the improvement obtained in this case (11.5 dB) is well worthwhile as reducing interference from the rear from its previous level of two "S" points down to four may make the difference between being able to just detect that DX signal to being able to copy it comfortably.

This is without consideration of the added advantages of the staggered stack.

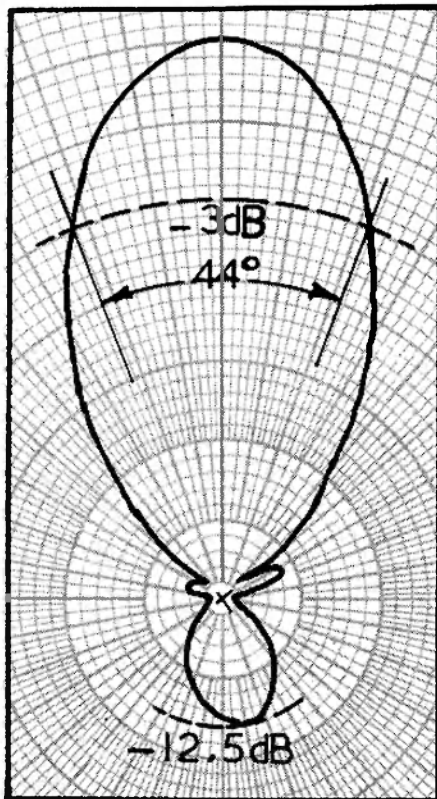


FIG. 1: E Plane Pattern 6 Element Yagi.

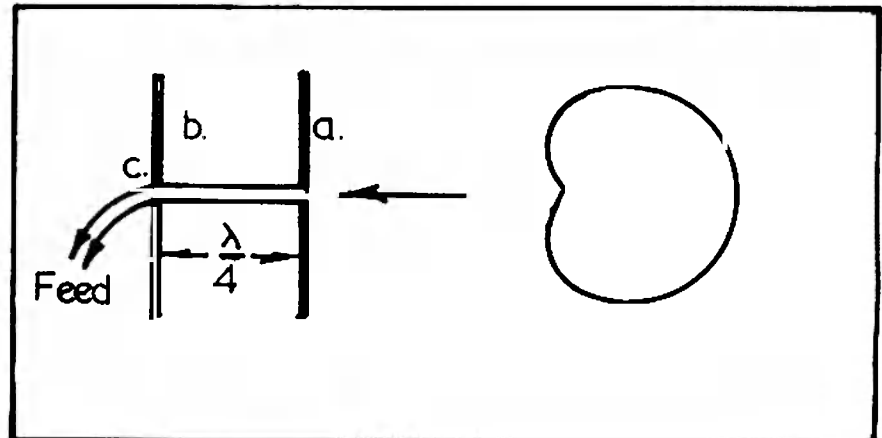


FIG. 2: End-Fire Couplet and its Radiation Pattern.

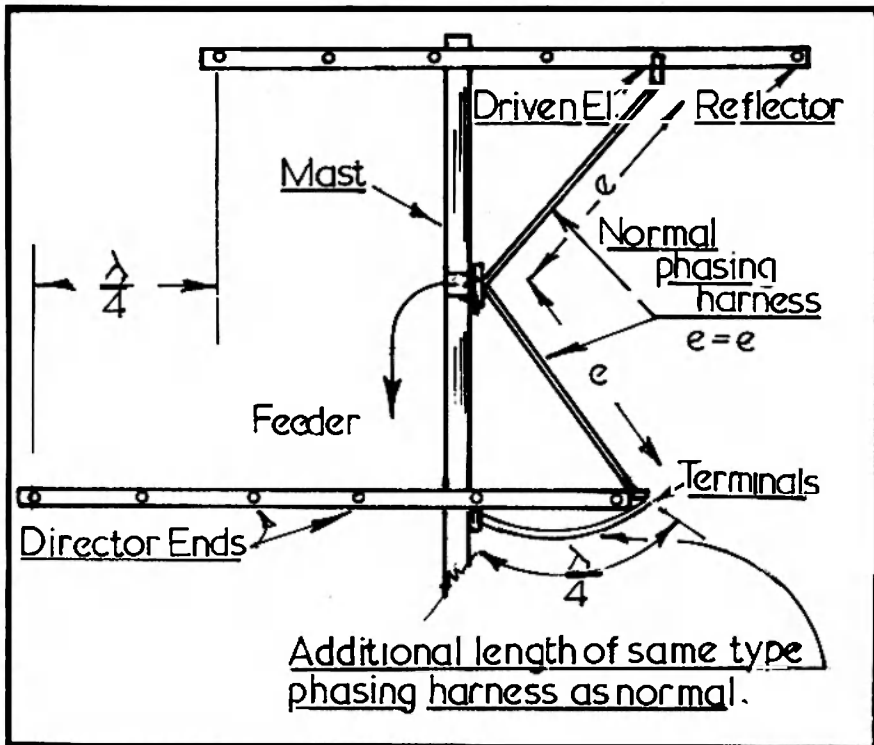
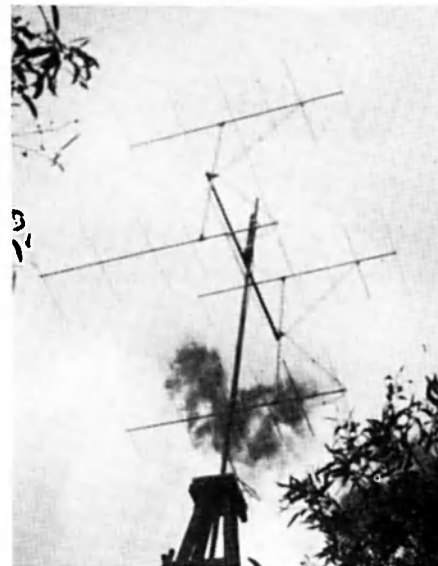


FIG. 3: General Arrangement of Stacking Yagis to obtain Back Lobe Reduction.



be in phase at the feeder junction. Although the phasing sections in this case are balanced open lines, the principle applies to any sort of transmission line. The points to remember here are to take the velocity factor into consideration when cutting the $\lambda/4$ sections and to ensure that the phasing lines are the same impedance as the impedance of the individual antennas, i.e., not transformer sections. This is not meant to imply that the principle cannot be applied to antennas where the phasing lines double as impedance matching transformers but merely to indicate that in that case additional steps may be necessary to ensure correct matching.

Happy staggering. ■

REFERENCES:

1. ARRL Antenna Book, Pages 154-156.
2. Design of Yagi Aerials, R. M. Fishenden and E. R. Wiblin, Proc.I.E.E., Pt. III, Vol. 96, No. 39, Jan., 1949, p.5.

BONUS POINTS

There are several other advantages to be had from staggered stacking. Those who wish to do so may verify the following by applying simple mathematics.

The same process which cancels the back lobes also reduces the side lobes to some extent as well as narrowing the main beam slightly. The stacked antenna gain is increased by a small amount over a non-staggered stack (about 0.25 dB in this case) as well as being at a higher level for a given side lobe amplitude because the stacking distance does not have to be reduced by the same amount to obtain that side lobe level as would be the case in a non-staggered stack. This is illustrated in the polar patterns. Note that the 3 dB beam width of the stack of four (2×2) is half that of the individual yagi, indicating 6 dB increase in gain.

A further advantage lies in the wider tolerance to impedance variations between the individual antennas making up the stack. This tolerance is a result of the asymmetrical phasing arrangement.

Finally it is different and thereby provides an excellent subject for rag chewing.

CONCLUSIONS

Staggered stacking provides a cost and effort effective way of improving the performance of an array of antennas.

Although applied to yagis in a vertical pair in this example the principle applies to antennas of any type in any plane. The point to remember is that currents due to signals from the desired direction must

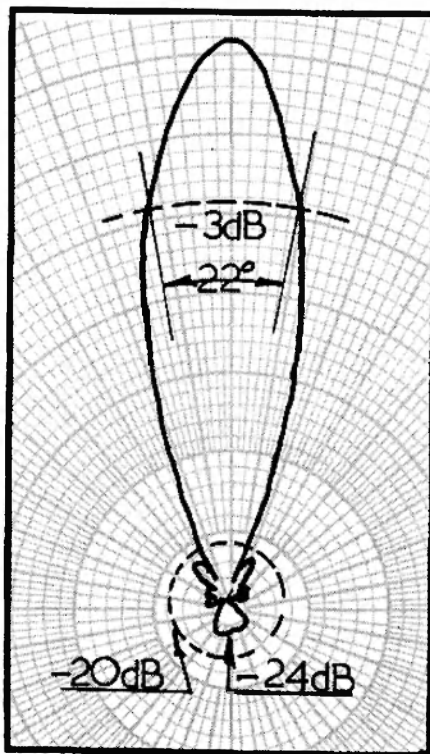


FIG. 4: E Plane Pattern 4 x 6 Element Yagis.

CALL SIGNS

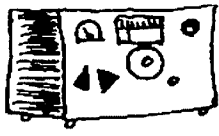
Attention of members is again drawn to the habit of omitting the prefix "VK" when announcing call signs. This is particularly noticeable in the case of phone operation.

Such practice is not in accordance with International requirements and contravenes the Wireless Telegraphy Act. Operators should be careful that they use the full call sign allotted to the station concerned.

- This appeared in AR August 1955 and is again necessary as a reminder.
- Remember that during a "session" of short to and fro transmissions it is only necessary to announce call signs at the beginning of the "session" and not less than every 10 minutes thereafter
- — and this applies equally to contacts through the repeater.
- Separate concessions apply only in respect of WICEN communications.



TECHNICAL CORRESPONDENCE



Short Active Receptor

Ian R. Bryce VK3BRY
2/15 Rockley Road, South Yarra 3141

In the December, 1981 AR, Ross Treharne explains his version of how short active antennas work. He stresses throughout that "... it is not ... the antenna which actually picks up the signal", it is just a return path. "The car body collects more energy ... the whip is just an earth return."

These views, which contradict the theory of antennas as I understand them, cannot go unchallenged.

In an effort to discover the reasons for his views, I studied his references in detail. In the 1971 digest paper, he observes that the signal from a short horizontal dipole on a vertical mast is little changed if the dipole is shorted. He interprets this to mean that the mast does most of the reception, and the dipole is only an earth return. But, of course, vertically polarised signals are efficiently received by the effective mast—top hat system, and any unbalance or asymmetry can render these stronger than the wanted horizontal pick-up.

In the next two references, Cook describes high impedance buffer amplifiers for short antennas. There is no suggestion that it is the earth connection picking up the signal.

The 1980 Symposium Extract follows a similar line to the 1971 paper, and in the 1981 AR article by Barnes uses the earth and antenna for their proper functions.

So how do short active antennas work? The mechanism is very simple. The buffer stage (such as a source follower) removes any load admittance from the antenna, i.e.: It sees open circuit. Thus there are a number of conducting bodies (the whip, car or mast, earth, etc.) insulated from each other.

As each is small compared to a wavelength, there are no resonances. The quasi-stationary solution applies—given the electric field at any instant in time, each conductor is at the potential it would assume in a constant electric field of that value.

The electrostatic field problem can be solved in many ways. I have used conformal transformations and resistance-paper mappings. Generally, an isolated conductor will assume the voltage which would exist at its "midpoint" if it were not there; i.e., proportional to its height above ground. This can be used to find the voltage from a single wire or a dipole as in Figures 1 and 2.

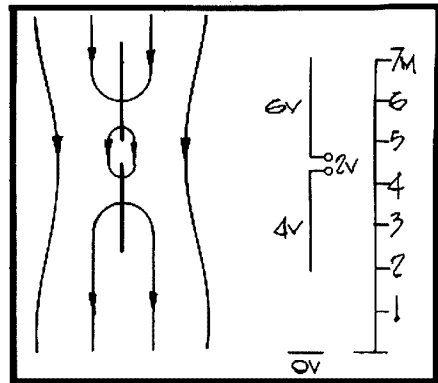


FIGURE 2

If more complex shapes are involved, estimation of the capacitances between conductors will show how the voltage is divided, as in Figure 3, for a car with a short active monopole.

If a mast or feeder is earthed, this will distort the electric field as shown in Figure 4.

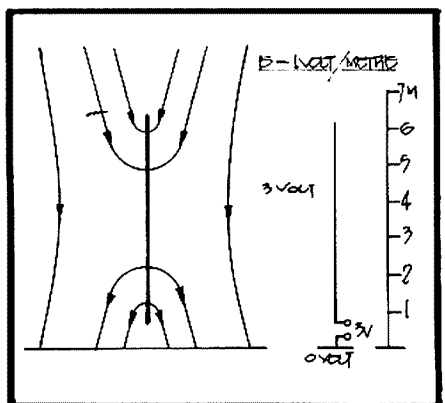


FIGURE 1

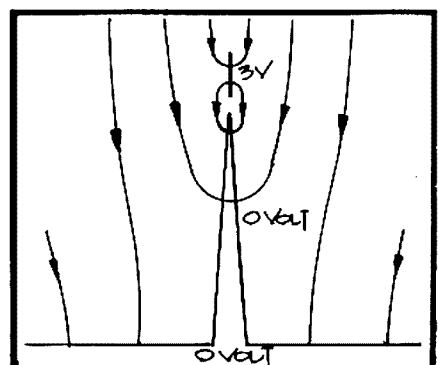


FIGURE 4

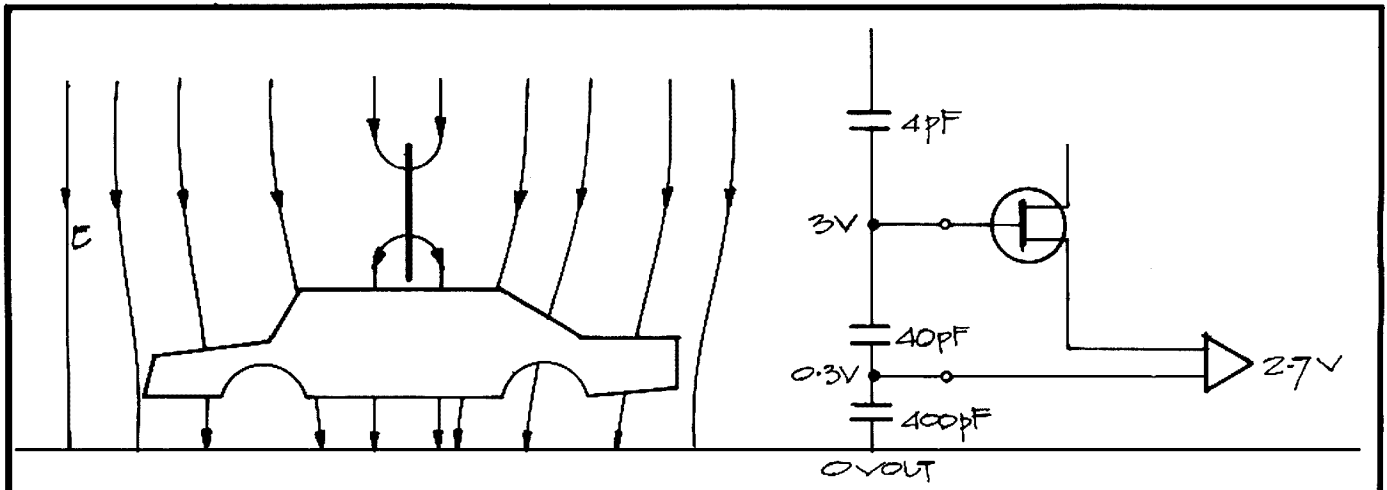


FIGURE 3

The Even Simpler Regulator

Bernie Wills VK4ABY
Kent Street, Forest Hill, Qld. 4342

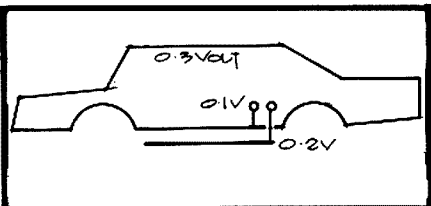


FIGURE 5

The "antenna under the running board" picks up little voltage, as Figure 5 shows, but can be used as a passive tuned antenna because of its low impedance.

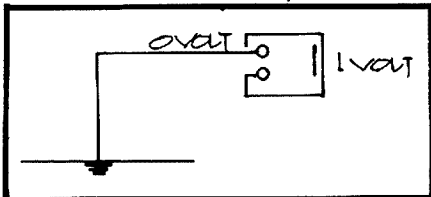


FIGURE 6

The "Little Wonder" uses the voltage of the chassis of the radio, if it is not earthed, as in Figure 6. If both the chassis and the antenna terminals are earthed, there is no electrostatic pickup, and operation will rely on the magnetic field in the loop created by different earthing points (Figure 7).

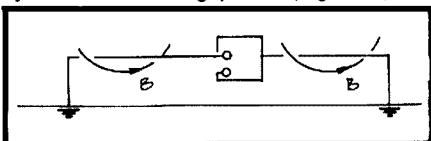


FIGURE 7

The open circuit emf of any short antenna can be found in this way. When a source-follower is employed, this same voltage is applied to the cable or the receiver.

For passive or resonant small antennas, the actual voltage occurring at the terminals can be found by voltage-divider action between the antenna's capacitance and the receiver's input resistance and reactance, as shown in Figure 8:

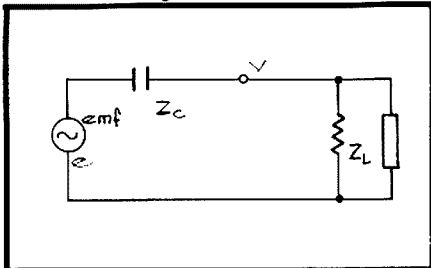


FIGURE 8

$$V = eZ_L / (Z_L + Z_C)$$

The radiation resistance can be neglected. It is $10 \pi^2 h^2 / \lambda^2$ ohms for a short monopole.

:: ::

We seem to be moving toward two extremes. The water in our pipes will be either dried up or frozen. That is a weather comment.

TECHNICAL EDITORS' COMMENTS

The purpose of C2 is to prevent instability or oscillation of the regulator IC which may occur when the lead length between the filter capacitors and the IC is more than, say, 75 mm. The placement of C2, as shown in Mr. Roden's article "The Even Simpler Regulator," A.R., Jan., 1980, is quite satisfactory from that point of view.

Unfortunately, C3 does not have negligible impedance at 100 Hz, compared to R7, so any ripple across the filter capacitors appears across the capacitive divider C2, C3. C3 is shunted by R7. Typically 5% of the ripple could appear across R7 and a similar amount would consequently appear in the output. In many applications this would not be significant.

Mr. Wills has apparently observed this effect and found corrective action necessary. We are grateful for his letter bringing this problem to our attention.

VK3AFW

Your attention is drawn to an error which appeared in A.R. In the January 1980 issue, in an article entitled "The Even Simpler Regulator" (p.12).

Fig. 2 (p.13) shows the incorrect placement of a 1 uF tantalum capacitor when the LM 317 regulator is used. Similarly, it would be incorrect for any other regulator having a resistor between the common leg and 0 V.

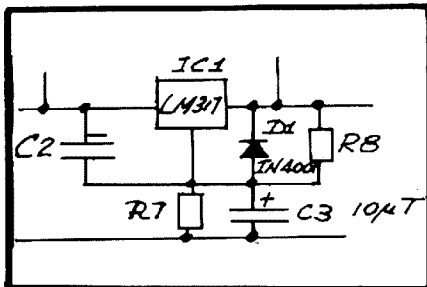


FIG. 1: The original Fig. 2 circuit.

I have built three different power supplies using this basic circuit.

- (a) 20 A 13.8V for HF transceiver
- (b) 1 A 12V for TV monitor
- (c) 6 A 5V for a micro-computer.

The most recent of these (c) showed 400 mV p-p ripple (C.R.O.) on the regulated output with a load of about 2A, when a 10 uF tantalum capacitor was used as in the diagram above. This was reduced somewhat when a 1 uF capacitor was used, but disconnection of the capacitor removed all noticeable ripple. No problems were observed with (a), but the picture on the TV (used with microcomputer) did tend to be unsteady until the problem was fixed. All the suppliers had adequate filter capacitance and suitably wound transformers. The ripple has disappeared in each case when the capacitor was isolated.

The National Semiconductor Voltage Regulator Handbook shows that if a tantalum capacitor is used, it should be connected from the input to 0 V as shown below.

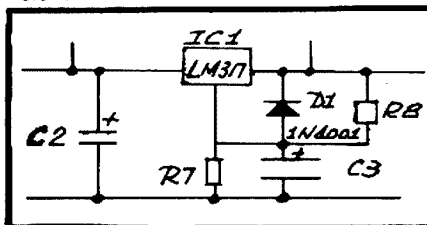


FIG. 2: The recommended circuit.

I hope that this information will be of some assistance to your other readers.



QSP

"BLACK BOX" OPERATORS

Probably one of the best balanced of notes about the real meaning of amateur radio comes from the pen of Pat Hawker G3VA, writing his Technical Topics column in Rad. Comm., February 1982. This is what he says:—

"Over the past few months I have attempted to highlight some of the problems facing those who do not wish to see amateur radio become predominantly a 'consumer-appliance' hobby. There is, I have found, a wide measure of agreement that the 'non-professional' home-constructor and experimenter can no longer hope to compete on anything like equal terms with the major firms in the construction of full-facility HF or VHF transceivers, while the strongest signals tend to come from the large beam antennas that do not fit easily into many urban or residential areas. Furthermore some of these stations are tending to become well beyond the financial reach of many who in the past have formed the solid core of the hobby.

To maintain the 'experimental' tag some believe that the hobby should concentrate more on the latest technology, in advance of the factory-built rigs: various forms of spread-spectrum modulation; data 'packets' to provide 'electronic mail' by means of advanced store-and-forward repeaters; fast and slow-scan colour television; more computer-to-computer links in which the RF path is basically a substitute for a cable or optical fibre. These are indeed mostly laudable projects but not altogether in keeping with what most of us tend to think of as "amateur radio" for the majority.

So some consider the answer would be to encourage a return to more basic communications, using equipment that is simple enough for even newcomers to build; CW rather than phone; DSBC rather than SSB; and with less emphasis on competition between stations in the form of contests and awards. Yet others say 'Go higher, young man' and make more use of orbital repeaters and self-excited microwave rigs, or alternatively become more scientific in the study of propagation anomalies.

In practice, I suspect there is no all-embracing answer: it is a measure of the quality and depth of the hobby that it can encompass so many diverse threads; including, let it be said, the appliance-user who intends to become efficient in 'inter-communication'—accepting that this is an inherent part of the ITU definition of the amateur service as a form of self-training. Good OPERATING is still a highly skilled craft that is rightly part and parcel of experimental amateur radio."

Manila Conference

Edited by R. G. Henderson VK1RH
171 Kingsford Smith Drive, Melba, ACT 2615

This is an edited report on the Fifth Conference of the international Amateur Radio Union Region 3 Association, held at Manila, Philippines, from 2nd to 5th April 1982. Australia was ably represented by Federal President, Peter Wolfenden VK3KAU, and David Wardlaw VK3ADW.

SCOPE OF REPORT

This report is intended to give general information about the Fifth Conference of the IARU Region 3 Association, which commenced on 2nd April, 1982, and concluded on 5th April, 1982, in Manila. For information in more detail reference should be made to the official minutes.

PARTICIPANTS

The participants were delegates of eight Member Societies, viz.: ARRL, JARL, MARTS, NZART, PARA, RAST, RSGB and WIA, the President, Vice-President and Secretary of IARU and four Directors and the Secretary of the Region 3 Association. Regions 1 and 2 were also represented.

OPENING CONFERENCE

The Conference was opened by Gen. Ceferino S. Carreon, Commissioner of the National Telecommunications Commission, Quezon City, Philippines.

In his address, Gen. Carreon said that PARA was honoured to host this important Regional Conference of the Association. The importance of promoting international friendship and goodwill via amateur radio was recognised. The General also took the opportunity to announce the release of the 10.10-10.15 MHz band, albeit with certain time conditions, for the use of the amateur radio service in the Philippines.

SIXTH REGIONAL CONFERENCE

Only NZART had submitted a written invitation to host the next Regional Conference in 1985. The invitation was accepted.

REPORTS

Formal reports submitted by the Secretary, individual Directors and Member Societies were noted.

The Secretary mentioned that the Bangladesh Amateur Radio League had since obtained membership of IARU and that it would now apply for membership of the Region 3 Association.

POLICY MATTERS

1. WARC 79.

Several Societies indicated that the new band allocations gained at WARC 79 for the amateur radio service are being implemented. The Conference recommended that all IARU Regions should agree to a common policy on frequency allocations for the amateur bands.

2. NEW BANDS — 10, 18 and 24 MHz.

It was considered a very dangerous tactic to make it a policy of pressing for an additional extension of the frequency allocation in the 10 MHz band. However, there were no restrictions on

Societies making individual proposals to their own administrations.

The IARU Region 1 band plan was adopted for the 18 and 24 MHz bands in respect of their use in Region 3 countries.

The Conference endorsed the principle of a world-wide uniformity in the subdivision of bands into certain transmission modes.

3. FUTURE ITU WARC MEETINGS.

It was resolved that IARU observers should as far as possible attend ITU conferences that have deep Region 3 involvement. All IARU observers and observers from the Region 3 Association should function under a common leadership.

It was further resolved by the Conference that the Directors of the Association are to make financial provisions for the possible attendance of Region 3 observers at four ITU conferences in the period to 1986. These four conferences potentially affected the amateur radio service in this region.

4. IARU RESTRUCTURING.

The following resolution was passed:—

"This Conference endorses the concept of changes in the Constitution of the IARU by which the Union will have as its policy making body, a body composed of representatives of the three regional organisations and the Headquarters Society, and that the sense of this resolution be conveyed to the President of IARU and the members of the IARU Restructuring Committee."

A further resolution was passed outlining the method of implementing the above.

5. THE "SECOND SOCIETY" PROBLEM.

To overcome the effect of more than one Society representing amateurs in a particular country, the Conference passed a resolution forming the basis by which a Member Society membership in IARU could be terminated.

The basic provisions are:—

- (a) The Member Society has failed to fulfil its duties under the Articles of the Constitution;
- (b) The Member Society has acted contrary to the interests of amateur radio of the IARU;
- (c) The Member Society no longer adequately represents the interests of the radio amateur service

throughout the country or separate territory in which it is located.

6. THE PROMOTION OF AMATEUR RADIO IN DEVELOPING COUNTRIES.

IARU HQ is to seek information from Societies in developing countries about the type of assistance that they may require to promote the amateur radio service in their countries.

7. REGION 3 NEWS.

The offer by JARL to produce at least three issues per year was accepted by the Conference. (A copy is sent to each WIA Division.)

8. INTERNATIONAL LICENCES.

Societies should try to seek from their respective administrations permission for the issuance of temporary licences for visiting licensed amateurs without any prior formal or bilateral arrangements between the administrations concerned.

OPERATING MATTERS

1. INTRUDER WATCH.

It was recommended that each IARU Society continues to work for the establishment of an Intruder Watch and that each Society establish the necessary liaison with its administration so that complaints of harmful interference to the amateur radio service can be processed in a fashion which will ensure their recognition by the ITU.

2. QTH LOCATOR SYSTEMS.

The "Human Language Code" system proposed by JARL and the Region 1 "Locator" system were both adopted.

3. STANDARD SPECIFICATIONS FOR QSL CARDS.

A sub-committee was formed with JARL and NZART to develop a standard QSL card. This sub-committee was asked to report back at the next Region 3 Conference.

4. REGION 3 AWARD.

The proposal by NZART for the above award, together with its rules, was accepted by the Conference. NZART was chosen to administer the award on behalf of the IARU Region 3 Association. The printing and design layout of the award certificate was to be undertaken by MARTS.

5. INTERNATIONAL BEACON PROJECT (IBP).

The IARU HQ was urged to take necessary action to ensure proper co-ordination of this project, especially in regard

to the collection of propagation studies so that they are directed to the appropriate authorities for scientific analysis.

6. EMERGENCY COMMUNICATIONS

The Conference recommended that Region 3 Association should review the subject of emergency communications in their own countries from administrative and operational points of views and report within a year.

7. MICROWAVE BANDS.

All encouragement should be given to activity on these bands and also to the development and manufacture of suitable equipment.

AMENDMENTS TO CONSTITUTION

The number of Directors was increased from four to five.

The subscription rates are now to be decided at a Conference of the Region 3 Association.

FINANCES

Considering the finances required it was decided that the annual subscription rates be computed as follows:—

Up to 5,000 members, US\$0.50 per member; subsequent 5,000-10,000 members, US\$0.30 per member; over 10,000 members, US\$0.06 per member.

For the WIA this averages out at about 40c Australian per member.

GENERAL BUSINESS

1. The following papers were discussed and the subjects contained therein were endorsed:—

PRESERVATION OF THE STANDARD OF THE AMATEUR SERVICE.

This paper dealt with the ease of obtaining amateur licences by stations operating under the maritime mobile service.

THE AMATEUR CODE.

A more general model of the Amateur Code as proposed by NZART was noted. It was recommended that it be adapted for international use.

THE USE OF EXCESSIVE POWER.

Concern was expressed on the apparent disregard on the use of excessive power by some amateur stations.

CO-ORDINATION OF THE CONTEST CALENDAR.

HQ IARU are to publish in "The Calendar of the IARU" the contest activities of the Member Societies in an attempt to avoid clashes of contest events.

WORLD COMMUNICATION YEAR 1983. The IARU as well as the Regional Associations should actively involve themselves in promoting amateur radio throughout 1983.

2. The Bangladesh Amateur Radio League (BARL) was admitted as a member of the Region 3 Association.

ELECTION OF OFFICE BEARERS

The following persons were nominated and elected:—

Chairman/Director: David Rankin 9V1RH/
VK3QV.

Director: Jose Gonzalez DU1JMG.

Director: Keigo Komuro JA1KAB.

Director: Jumbo Godfrey ZL1HV.

Director: Michael Owen VK3KI.

Secretary: Masayoshi Fujioka JM1UXU. ■



Noise Blanker for the Woodpecker.

BOOK REVIEW

THE NOVICE OPERATOR'S THEORY HANDBOOK

To adorn the shelves of the technical book shops comes an excellent publication for Novice licence candidates who have had little or no experience with electronics.

It is designed to take a raw beginner of average intelligence to the level required to pass the DOC Novice operator's THEORY examination.

The authors are Graeme Scott VK3ZR, a well known Melbourne amateur, who has been a technical teacher for many years, and Sandy Bruce-Smith VK2AD, currently with the Sydney office of Kenwood.

Graeme was also the Education Co-ordinator of the WIA Federal Executive up to three years ago, and his committee was the driving force behind the current WIA/DOC syllabus of all amateur operators' examinations.

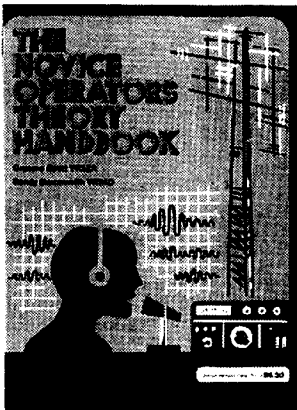
The book which is designed to the Novice syllabus has 80 pages in 17 chapters. Chapter titles are:—

Electrical Laws and Circuits, Vacuum Tubes, Semi-conductor Devices, Power Supplies, HF, Morse and AM Transmitters,

SSB Transmitters, Receivers, Propagation, Transmission Lines, Antennas, Interference, Test Equipment, Circuit Symbols, Morse Code and Answers to Questions.

Each chapter goes into sufficient depth to enable the reader to answer associated questions which are listed at the chapter's end.

Copious diagrams accompany each item, and with a little concentrated effort, should pose no problems to readers.



The questions asked at the end of each chapter are in the form as they appear on the multi-choice exam paper. The answers to these are at the end of the book.

The contents itself has been published previously in serialised form in another local amateur publication, and is now presented as a whole work in the one volume.

Graeme is to be congratulated on his efforts, and a candidate who has fully studied his book, together with the DOC operator's handbook and Morse code requirements, should have little difficulty in passing the Novice operator's examination.

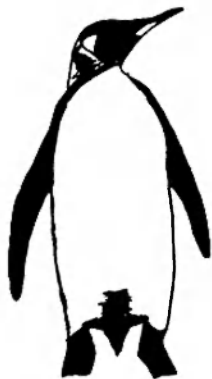
The book represents good value at \$6.50 (allow \$1.00 extra if ordering by post) and is available from the following:—

Most WIA Divisions, technical book shops in capital cities, major equipment retailers and distributors or direct from the authors — Graeme Scott VK3ZR, 11 Balmoral Crescent, Surrey Hills, Victoria 3127, and Sandy Bruce-Smith VK2AD, 110 Rosemead Road, Hornsby, NSW 2077.

(Reviewed by VK3UV.) ■

Heard Island

Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138



Probably one of the loneliest and inhospitable places in the world, most of it permanently covered by ice and inhabited only by fauna, but visited regularly by gusting and freezing winds. This island is located in about latitude 53° 01' S, longitude 73° 23' E and lies some 4000 kilometres south-west of Perth, is the intended home of the expeditioners for the proposed operating period of some six weeks and is a project being undertaken by the DX CHASERS CLUB, as detailed on page 22 of AR last month.

HISTORY

Documentation of who was the first to discover Heard Island seems to be a bit sketchy, but it appears that in late 1853 a vessel en route from Boston to Melbourne by chance sighted land and its skipper, Captain Heard, logged it, but did not land.

Two years passed before a landing by another vessel was made and then there was a long succession of whalers seeking the riches from the slaughter of abundant numbers of sea elephants which, because of uncontrolled slaughter, became extinct. Little more was heard until 1910. Whilst investigating the potential of establishing a whaling industry base at Heard the British flag was raised and the island claimed.

Early in 1947, Sir Douglas Mawson, who had visited Heard some 18 years before while en route to Antarctica, prompted the authorities to appoint an Authority, which is known today as the Australian National Antarctic Research Expeditions (ANARE).

The Heard Island ANARE group arrived on the 11th of December, 1947, 15 days later the Australian flag was raised and the island was claimed for the Commonwealth, although the sovereignty change-over from Great Britain to Australia did not actually take place until 1951, and since that date the laws in force in the Australian Capital Territory also apply to Heard Island where these laws are appropriate.

CQ de VK HEARD

One member of the 1947 ANARE exploring group, radio amateur Alan Campbell-Drury, the first to sign VK HEARD, remembers his trip some 35 years ago as if it were yesterday and recalls the majestic sight of smouldering Big Ben, a dormant volcano, which towers some 9,005 feet above the sea, and avalanches of ice dropping away and breaking the eerie silence of the night. This forbidding mountain has been conquered only once by a climbing expedition which was on its second attempt in 1964-65.

Alan in those days signed VK3ACD/HEARD ISLAND, but now signs VK3CD and is well known for some of his outback adventures (refer May 1982 AR, page 8). He describes the area as very rugged and beautiful, but he still remembers the cyclones (some 22 being recorded during

his stay), high winds and the severe gusts that lash the island, making landings very difficult and dangerous. He also recalls that, during his fifteen months duty, at various periods in excess of 100 knot gusts were recorded and once whilst repairing an antenna he was bodily lifted off the ground and transported some six feet, much against his will.

QRP — CW

The equipment Alan used was a Type A Mark 3 with an output of some four watts into the aerial, and Alan remarks that the west coast of Australia wasn't very difficult but the east coasts weren't so prolific. Incidentally, Alan still has the rig, and it is always with him on all his trips as a back-up for the more modern equipment he now uses.

THE GROUP

All of the members of THE DX CHASERS CLUB are well known for their "getting things done" participation in our hobby, and Nick VK6XI has been nominated spokesman for the project. ALL media releases will be made by Nick, including those in AR. Two others, Neil VK6NE and Gill VK6YL, have, due to being very active on the bands, been delegated the responsibility of co-ordination and documentation of the acceptance of offers of food, equipment and the general necessities required. Not to be forgotten are Hugh VK6FS and Don VK6DY, whose talents are keeping them well occupied with the project.

PARTICIPATION

Now is the time for ALL amateurs, including those "that have long pockets and short arms" whether it be in VK or other parts of the world, to participate with financial and other practical and constructive assistance so that the majority can benefit whilst the sunspot activity is still high and propagation is good on all bands.

In VK alone there are nearly fifteen thousand amateurs who have talents, expertise and contacts which are pertinent to this venture. The ground work has been done — NOW is the time to participate instead of sitting back in twelve months time with hindsight and saying "I would not have done it like that" or "I could have helped but I wasn't asked". Ladies and gentlemen, as fellow amateurs you are

being asked now, and the envisaged sailing time is early 1983.

Assistance for this Australian effort in the form of additional finance, actual aid and guidance in the selection and donation of suitable food, kitting, safety equipment, landing craft which are suitable for the treacherous seas and such items that are pertinent are needed from people associated with these industries. If you are technically orientated and don't fit into the above categories, small generators through to transceivers, linears and even antennae may be your forte.

The vessel's complement do not wish to dine on Caviare and go limousine style, but do require the basic comforts and a nutritionally balanced diet which will assist them to cope with the twelve week excursion into the Antarctic regions. Also reliable and adequate equipment to assist them on the island with safety under virtually any conditions they may encounter and simple reliable electronic equipment which will require only minimum basic maintenance whilst located in these arduous conditions so that a maximum "on air" time is achieved.

BUDGET

The budget for such an expedition as this is like talking telephone numbers, but the International DX Foundation, the Northern California DX Foundation and others have committed themselves to a significant percentage of the estimated figure but there is still a long way to go so that HEARD will be heard in 1983.

The VK6 Division of the WIA has endorsed its approval of the project, including the use of the QSL Bureau and the Federal Executive supports the Division and also agrees to act as a Trustee for the receipt of bulked donations of funds involved with the advance financing, which should be acceptable to all donors.

It is envisaged that all monies surplus after the return of the expedition, the forwarding of cards, return of equipment lent and disposal of purchased equipment, etc., will be distributed on a pro rata basis to all major donors. All incoming contributions and expenditure will be accounted for and a balance sheet published at the completion of the expedition. ■

KEYER COMPETITION

The Interest stimulated by the CLIPPER CIRCUIT QUIZ Competition has prompted the Publications Committee to submit you to another brain teaser, and GFS ELECTRONIC IMPORTS, of 15 McKeon Road, Mitcham, Victoria, have kindly donated a MFJ-402 SOLID STATE ECONO KEYER from the large range of MFJ products they distribute and service in Australia. The KEYER'S design is based on the renowned Curtiss IC and comes with built-in paddle, weight and variable speed control from 8-50 w.p.m. Valued at \$101, it is the prize with their compliments to the lucky WIA

member whose name is drawn from the correct entries submitted.

RULES

The contest is open to all members of the WIA, with the exception of all people and their immediate families associated with the production of Amateur Radio. One entry per member, each entry to be handwritten on the back of a standard Australia Post approved small envelope.

Entries must be received no later than the last mail, Monday, 2nd August, 1982,

and the winning entry will be the first correct answer drawn by the Editor of AR, Bruce VK3UV, on the 3rd August.

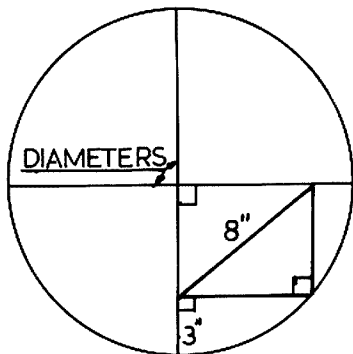
The Editor's decision will be final and no correspondence will be entered into regarding the decision. Results will be published in September AR.

All entries to: AR Competition No. 2, Box 150, Toorak 3142. On the back of the envelope your name, address, call sign and the answer to the problem.

Only entries in the above format will be accepted. All others will be disqualified.

The Problem...

What is the radius of this Circle?



This problem is intriguing as the elementary answer is so often reduced to its most complicated form.



Bruce VK3UV drawing the winner of the Switch.

CONGRATULATIONS TO APRIL'S WINNER

PAUL B. WEBSTER VK2BZC

25 Bayview Avenue, Earlwood, NSW 2206

who is the winner of the popular CLIPPER CIRCUIT QUIZ for the DAIWA CS401, 4 Position Coaxial Switch kindly donated by VICOM INTERNATIONAL PTY. LTD., which was drawn by Bruce VK3UV as pictured. Although not winners, thanks are extended to all participants for their interest, presentation and accuracy in the entries received.

The correct answers were:—

- | | |
|-------|--------|
| 1 = H | 6 = D |
| 2 = F | 7 = A |
| 3 = C | 8 = E |
| 4 = J | 9 = G |
| 5 = I | 10 = B |



INTERNATIONAL NEWS

The NZART President, "Jumbo" Godfrey ZL1HV, and the NZART Overseas Liaison Officer, Jamie Pye ZL2NN, were guests of the WIA at the 46th annual Federal Convention, Melbourne, 1st, 2nd and 3rd May, 1982. Exchanges of views were exceedingly valuable.

10 MHz BAND

Malaysian amateurs have been granted the use of 10.1 to 10.15 MHz on a secondary basis from January 1982. MARTS will conform with IARU Region 1 band plan — i.e. narrow bandwidth modes only.

JAPAN

The Japanese Ministry of P. and T. granted permission 23/1/1982 for amateurs to set

up repeaters. JARL proposes to establish one repeater per call area plus Okinawa. Channels have to be selected from a list which covers 434.52/439.52 to 434.98/439.98 MHz and 1271.02/1291.02 to 1272.98/1292.98 MHz only — i.e. 5 MHz separation on 70 cm and 20 MHz on 23 cm, power limits 10W on 70 cm and 1W on 23 cm. On 30/9/1981 there were 504,243 amateur stations licensed in Japan (123,676 were members of JARL on 7/11/81).

PREFIXES

Since WARC 79 the ITU has provisionally allocated the following call sign prefixes:—

- J8A-J8Z: St. Vincent and the Grenadines
V2A-V2Z: Antigua.

V3A-V3Z: Belize.

Z2A-Z2Z: Zimbabwe.

BURMA

A letter from the Ministry of Transport and Communications in Rangoon to the IARU and published in IARU Region 3 News of February 1982 states categorically that the administration objects to radio communications from radio amateurs and that no amateur radio licence has been issued. Amateur radio communication to and from Burma are prohibited.

2m DX

On 11/6/1981 G3VYF contacted 4X4IX on 144 MHz SSB. The distance is 3,540 km and signals were 5/9+ both ends. ■

VE to VK



in a Wheelchair

On the 2nd January, 1982, Tony VK2PJJ and Alex VE7AWT decided that an attempt would be made to establish contact on 10 metres whilst both were mobile.

Nothing very startling in that one may say, but Tony and Alex are both very keen radio amateur operators and are both confined to wheelchairs, so the mobile operation was to be whilst mobile in their chairs.

In Canada, Alex was transported to a chosen site near Duncan, British Columbia, by Nick VE7FES, while a VHF link was maintained to Chris VE2DYS/7, who in turn was in contact with Don VK2DXH on HF.

In Australia, Tony was transported to his

chosen site, Gan-Gan Lookout, Port Stephens, NSW, by Jim VK2DFY and Ian VK2PKB. They also had a VHF link to VK2DXH so that there was communication at all times while antennas and stations were being set up on the wheelchairs.

At 23.08 the all clear was given that all was in readiness and both stations established contact with a R5 S3 report at each end and they continued to talk whilst both mobile in the wheelchairs for 10-15 minutes. (Numerous other VK and VE stations were also worked by Tony and Alex.)

The exercise was a great success and both disabled operators were elated at

making what is believed to be the first Trans-Pacific wheelchair/mobile to wheelchair/mobile contact.

Tony's equipment was a quarter wave antenna and a TS120S powered from the wheelchair battery supply, while Alex was using a five-eight wave antenna to a TS120S. Weather conditions were extreme opposites. Canada was 0°C and snowing, while Australia was 32°C with bright sunshine.

Tony and Alex would like to thank VE2DYS/7, VE7FES, VK2DFY, VK2PKB and VK2DXH for their kind assistance in this exhilarating event. ■

I'm Fine Thank You

There is nothing the matter with me
I'm as healthy as I can be.

I have arthritis in both my knees,
And when I talk, I talk with a wheeze.
My pulse is weak, and my blood is thin,
But I'm awfully well for the shape I'm in.
Arch supports I have for my feet,
Or I wouldn't be able to be on the street.
Sleep is denied me night after night,
But every morning I find I'm alright.

My memory is failing, my head's in a spin.
But I'm awfully well for the shape I'm in.
The moral is this as my tale I unfold —
That for you and me who are growing old,
It's better to say "I'm fine" with a grin
Than to let folks know the shape we are in.

How do I know that my youth is all spent?
Well my "Get up and go" has got up and
went,

But I really don't mind when I think with
a grin,

Of all the grand places my "Get up" has
bin.

Old age is golden I've heard it said,
But sometimes I wonder as I get into bed,

With my ears in the drawer, my teeth in a
cup,
My eyes on the table until I wake up,

Ere sleep overtakes me, I say to myself
"Is there anything else I could lay on the
shelf?"

When I was young my slippers were red,
I could kick my heels over my head.

When I was older my slippers were blue,
But still I could dance the whole night
through.

Now I am old my slippers are black,
I walk to the store and puff my way back.

I get up each morning and dust off my wits
And pick up the paper and read the
"Obits".

If my name is still missing I know I'm not
dead,

So I have a good breakfast and go back to
bed.

"The Serviceman", August '81

from "ARNS Bulletin", Sep. '81

TRY THIS with the Technical Editors



ANTENNA CARRIAGE FOR FREE STANDING TOWERS

This was the title of an Item by John Tower VK6IM on page 13 of AR for August 1980.

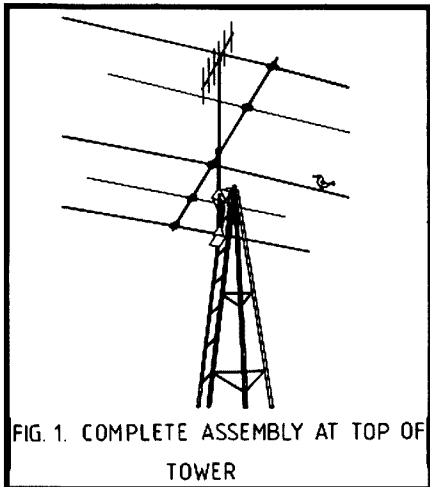


FIG. 1. COMPLETE ASSEMBLY AT TOP OF TOWER

After many discussions with Harry VK4VBV who has workshop facilities in the Sugar Belt the following construction was tried out.

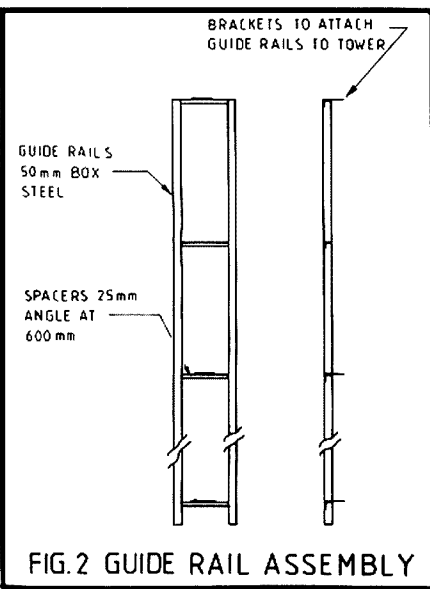


FIG. 2 GUIDE RAIL ASSEMBLY

The first stage is to build a ladder type affair that will carry the carriage. This is done with box steel. Two lengths equal to the height of the tower are required. You may need to join two or three lengths. The joints should be ground smooth so that they do not interfere with movement of the carriage. Note that the two lengths which run up the side of the tower should be parallel to each other.

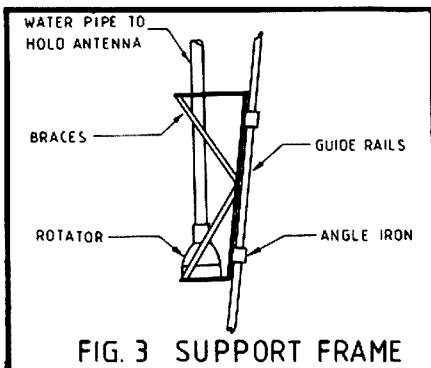


FIG. 3 SUPPORT FRAME

A winch is located at the bottom. A wire rope from the winch is run to the top of the tower then over a pulley with the end of the rope attached to the carriage. This allows the carriage to be raised and lowered by the winch. The carriage being winched up the tower guided by the rails along the side of the tower.

This is of great use in an area prone to cyclones as the aerial can be lowered to about two metres from the ground.

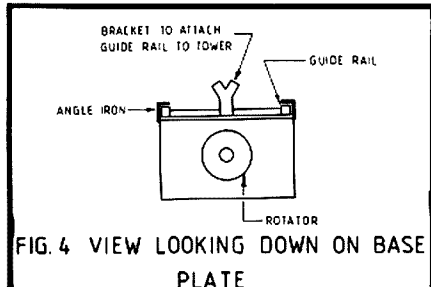
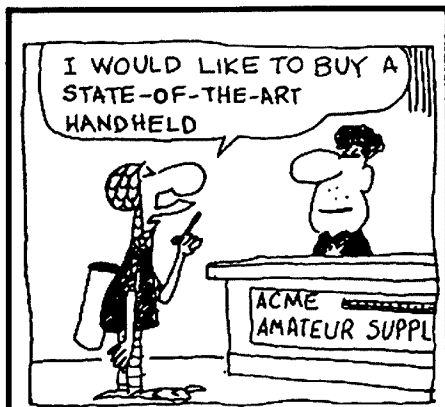


FIG. 4 VIEW LOOKING DOWN ON BASE PLATE

This item written by Allan Verner VK4ARV originally appeared in "Backscatter". Thanks to Peter VK4PV the publicity officer of Townsville Amateur Radio Club for bringing it to the attention of the Technical Editors.

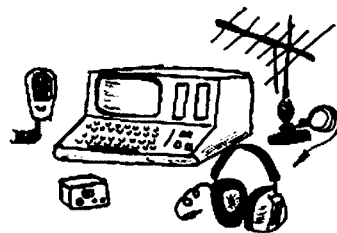


ALL I WANT TO DO IS TO WORK THE LOCAL REPEATER



From "The Propagator", Feb. 82

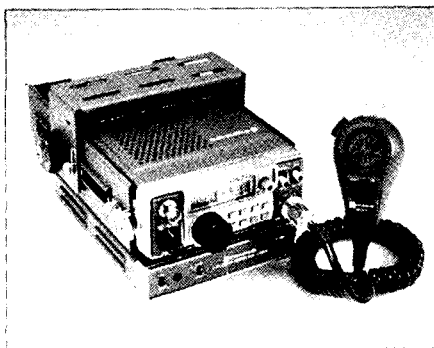
EQUIPMENT REVIEW



Ron Fisher VK3OM

3 Fairview Avenue, Glen Waverley 3150

The Standard C58 Multi-Mode 2m Transceiver



The Standard C58 is a compact, transportable, multi-mode 2 metre transceiver with full 144 to 147.999 MHz coverage using either USB/LSB, CW or FM. It is only slightly larger than some of the so-called hand-held transceivers. However, perhaps we are getting ahead of things.

Before returning to the other push button functions, lets look at the frequency read-out system. This is a four figure liquid crystal display. The size of this is the same as found on a standard man's watch. As well as frequency, memory selection, scan operation and noise blanker on are indicated. Frequency read-out to 100 Hz on the two metre band, of course, requires more than four digits. Here is how they do it: for a frequency of 144.124 MHz. If either 5 or 25 kHz stepping is selected, the display shows 4.123; if 1 kHz stepping is selected, the display shows :4.123. In

the 100 Hz mode, the display shows .1234. The one preceding dot in this situation indicates that the MHz is an even number, if it happened to be 145 or 147 MHz, then the display would show :1234. This all takes a little time to get used to, however operating in a particular mode, either SSB or FM, tends to sort things out.

Other push buttons provide for memory entry, memory recall, memory scan, 1750 Hz tone burst (not really required in Australia but handy if you intend taking the unit overseas), and finally a restore to normal button to stop scanning.

The meter acts as an 'S' meter, RF output meter and battery condition indicator. The latter function is selected by a slider switch on the rear panel which also operates the meter and display light. Two toggle switches select USB/LSB/FM and simplex/repeater normal/repeater reverse operation. The audio gain and squelch controls are concentric and a momentary push of the audio control selects noise blanker operation. Two RF output connectors are included, a BNC on the front to which the supplied helical antenna is connected and a standard SO-239 on the rear panel.

A RIT control gives ± 1 kHz receiver tuning in all modes of operation.

THE C58 ON THE AIR

The first thing noticed (by me) was that good eyesight is a desirable thing to have when operating the C58. As can be imagined, all of those controls on a front panel size 129 x 52 mm have to be small. I guess it's a case of you cannot have things both ways.

Operation as a home station can be quickly learned and mobile operation on FM is best accomplished by starting at a known channel and then pulsing up or down in 25 kHz steps with the microphone control. In this way most of the usual FM channels can be selected without even looking at the transceiver. I note that a mobile mount is available as an optional extra and that a very compact 25 watt amplifier can be attached to this.

AUDIO

Received audio is surprisingly good from the small built-in speaker and even at full audio gain very little distortion was noticeable. An external speaker output is on the side of the cabinet and a good quality speaker gave better than average reproduction. Transmitted quality on both FM and SSB was likewise reported as better than average.

Many amateurs will remember the name STANDARD from a few years ago as being a hand-held two metre FM transceiver. They achieved a degree of popularity although were never sold in large quantities. Here in Australia the name has disappeared, but in the UK at least a few models have popped up from time to time. Now GFS Electronic Imports have acquired the local agency for them and I can see that STANDARD will soon become a familiar name in two metre equipment. STANDARD is a product of the MARANTZ Company, well known in the high quality audio field.

MULTI-MODE TRANSCEIVERS

It seems only a short time since we reviewed one of the first multi-mode two metre transceivers, it was in fact 1976, and we were amazed on how they managed to fit all of those electronics into such a small enclosure. To say that things have changed would be an understatement. The C58 weighs only 1.45 kg complete with battery pack and measures only 129(W), 52(H), 190(D) mm which is exactly $\frac{1}{2}$ of the size of that first transceiver. Not only that but the little C58 includes functions that weren't thought of in those days. The only penalty one must pay is perhaps a somewhat low power output of only one watt, however this is usually easy to overcome with a small external amplifier.

The C58 comes with helical antenna and microphone, but batteries are an extra. It can take either standard AA penlight dry cells or nicad cells and a charging socket is provided on the rear of the set.

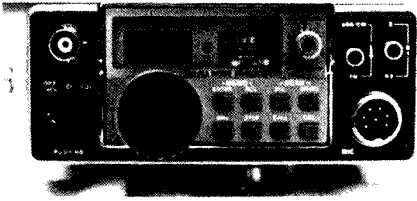
Let's look at all the features that are incorporated in the C58.

STEPPING ALONG

Naturally it is fully synthesized and tunes in steps rather than continuously. The steps are 100 Hz, 1 and 5 kHz in either SSB or CW mode and 100 Hz, 1 or 25 kHz in the FM mode. It is possible to change the 25 kHz step to 5 kHz by means of an internal switch but certainly for Australian conditions the 25 kHz stepping is ideal. The stepping rate is controlled by one of the eight push buttons on the front panel.

PUSH BUTTON CONTROLS

A second button enables the operator to select a one MHz up frequency, so if you start at 144 a push of the button selects 145, 146 or 147 in order. You can, of course, tune there by either turning the tuning knob or by using the up/down scanning button on the microphone.



Front view. Note push button controls.

POWER

Power output was checked with a fresh set of dry batteries and was spot on, one watt. With a specified current drain of 600 Ma on transmit, dry cells have a rather limited life, making operation rather expensive. I would recommend investing in nicads. Of course, for mobile work you can run the unit directly from the 12 volt car system. Unfortunately the special power input connector was not supplied with the test transceiver, so I was unable to check mobile operation using external power.



Rear view

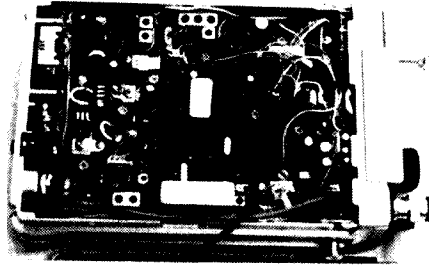
SENSITIVITY

Receiver sensitivity was equal to one top line transceiver in the shack and somewhat better than a well known hand-held unit that I have. However, it was noticed that cross-modulation was inferior to both. With the local channel two repeater in operation, its audio was loud and clear on the somewhat weaker channel three repeater 50 kHz away. This could present a few problems when operating on large antennas from home.



Transceiver and microphone. Microphone has a scanning switch.

SSB operation was simple and I found myself tuning up and down the band using the microphone scanning switch with the 100 Hz steps selected. This was much easier than using the somewhat "notchy" tuning knob on the transceiver front panel. Five memories can be programmed into the unit and selected by either the memory scan feature or by pushing the MEMO RCL once for memory one, twice for memory two and so on. As mentioned before, these buttons are small and one finger covers two buttons, so taking a stab in the dark may not produce the desired result.



Internal view.

INSTRUCTION BOOK

The instruction book is well written and contains plenty of information on operation, theory and alignment. A full circuit diagram is included as is a complete parts list. It should be noted that alignment and repair of a complex transceiver of this type should not be attempted unless you have both the knowledge and equipment necessary. However, the whole book is worth reading, you will be better informed on the operation of the C58.

CONCLUSION

The C58 is a delightful little transceiver and does everything it is designed to do in a very efficient way. It is however very small with small controls and the intending purchaser should be sure that it meets his requirements. It is quite amazing just what one watt will do with a reasonable antenna, but performance with the supplied flexi-antenna is limited to working into the local repeaters unless you happen to be located on a mountain top or in an aeroplane.

Our test unit was supplied by G.F.S. Electronic Imports of 15 McKeon Road, Mitcham, Victoria, to whom all enquiries should be directed. ■

WANTED

* * * *

Any good technical articles for publication in AR

2 METRE ANTENNAS

SCA 21
STAINLESS
STEEL
UNITY

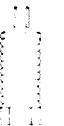
SCA 26
32"
HELICAL
3dB

SCA 25
BASE
LOADED

ACCESSORIES



MB
MOBILE BASE



MS
SPRING



MGB
MAGNABASE



GUTTER GRIP



SLOPE ADJUSTER



MK

Communicate with SCALAR

70cm



SCA 46
6dB
COLINEAR



SCA 31
STAINLESS
STEEL
UNITY



SCA 45
FLEXIBLE
STAINLESS
STEEL WIRE
UNITY



SCA 40
END FED TWO
ELEMENT WHIP
4.5dB

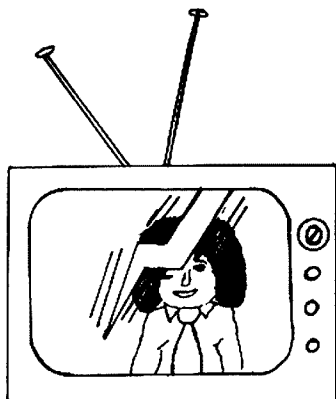
PROFESSIONAL ANTENNAS FOR THE DISCERNING AMATEUR

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NATIONAL EMC ADVISORY SERVICE



Tony Tregale VK3QQ
38 Wattle Drive, Watsonia 3087

This month's column has been prepared by guest writer Gordon Bracewell VK3XX. This excellent article should provide interesting reading and provoke much thought. It should appeal to all whether it be the Old-Timer, someone who has just acquired their licence or the SWL Intending to become a Licensed Amateur.

EMC — "The Total Problem"

Gordon Bracewell VK3XX

EMC means electromagnetic compatibility. What is electromagnetic and with what is it compatible or not? And what are the consequences?

1. Electromagnetic in this context means electromagnetic waves or radiation. It covers the spectrum from very long radio waves, through visible light to atomic radiations — e.g., X-rays or gamma rays. For the purpose of this discussion we are interested in only a narrow range, i.e. from the frequency of radio broadcasting, up through the so called "Short Wave" region to VHF television and stereo broadcasting and ultimately to UHF television, i.e., 500 kHz (kilohertz) to 500 MHz (megahertz), or so.
2. Compatibility is the effect of one piece of equipment upon another and vice versa. When it is objectionable it is called interference.
3. The consequences can usually be confined to the causing of nuisance. This has both legal and social consequences both in statute and in common law.

EMC IN THE DOMESTIC ENVIRONMENT

Here we will confine the discussion to the problems of the domestic or home environment. There are many varied and difficult problems in other areas such as the industrial and military fields.

Virtually every electrical appliance becomes involved in consideration of EMC. There are those appliances which are designed and/or intended to produce electromagnetic radiation — e.g., radio transmitters — amateur, business, marine, citizens' band. These are strictly controlled under wireless telegraphy regulations — although some may escape the net! Current technical standards determine the permissible radiations on other than the specified frequencies.

There are then those which are intended to do something else and as an unintended by-product they can produce electromagnetic radiation which can cause

nuisance — e.g., motor cars, television sets, electric irons, refrigerators, freezers and air-conditioners, heating systems, electric tools, food mixers, vacuum cleaners and many more right down to the humble electric light. By far the majority of these do not cause long term nuisance — for example they may manifest themselves by clicks and thumps on radio/hi-fi apparatus, or by flashes on television screens. Tolerance to such effects is very individual but is largely a function of the extent of exposure to the "interference". A new and potentially very troublesome source of parasitic electromagnetic radiation is the home computer.

Additionally, it must be recorded that EMC also includes the susceptibility of equipment to interference. Some is much more tolerant than others. In general, susceptibility problems are limited to radio and television reception, home audio and video equipment and home computing equipment. Susceptibility of the latter equipment certainly exists but is difficult to identify. Spurious errors in computation could equally be a fault in equipment or susceptibility to outside interference.

In the other cases, susceptibility gives rise to an annoyance which can often be identified, and this is where the social and legal consideration come to the fore. These are the ones with which the WIA EMC Advisory Service is mainly concerned.

It is certainly irritating to a consumer, having spent several hundred dollars on a colour TV or a hi fi system, to find that his quiet enjoyment of that equipment is disturbed by the "interference" frequently caused to it by for example:—

- (i) the taxi radio service just down the road.
- (ii) the CB radio enthusiast driving up and down the road talking to his friend in a car a couple of miles away.
- (iii) The amateur radio enthusiast next door talking to his friend overseas.

Each of these perfectly legal and government licensed and regulated activities can cause genuine interference to radio and TV reception by radiating emissions on the frequencies of public broadcasting services. The responsibility for removing the problem, which implies non-compliance

with regulations, is quite clearly defined in the legislation, i.e., the transmitting equipment must be corrected to meet the technical standards imposed by the licence.

On the other hand the consumer's apparatus may respond spuriously by receiving radiations legitimately produced on frequencies other than those to which the apparatus is tuned. Technically, all radio receivers are subject to the potential of spurious responses. Good design and manufacture recognizes this but the market place also dictate that money spent here is not always as profitable as money spent in advertising, or fancy packaging and presentation of the product. In other words the benefit of money spent in good design for electromagnetic compatibility is neither visible to the consumer nor to the manufacturer's finance or marketing director.

INTERFERENCE

One limiting example is the hi fi audio equipment which suddenly takes on the role of a radio receiver when subjected to strong electromagnetic fields. If this happens who is to blame — the manufacturer, the consumer (user), or the person or organisation producing the "interfering" electromagnetic radiation, perfectly legal and totally within the terms of his licence and the applicable regulations.

LEGISLATION??

IS LEGISLATION NECESSARY TO PROTECT THE CONSUMER'S INTEREST BY IMPOSING EMC SUSCEPTIBILITY STANDARDS UPON EQUIPMENT MANUFACTURERS? To date the general attitude has been, with few exceptions, no. Attempts have met with strong lobbying opposition by the manufacturers and have usually been confined to the "too hard" basket. However, the onset of the "electronics revolution" in respect to domestic equipment is with us and the use of equipment undreamed of 20 years ago is becoming quite commonplace in the house. The EMC aspects of this equipment are going to be a headache without some effective legislation constraining manufacturers to compliance with basic and reasonable technical standards.

At present, and certainly in Australia, there are no compliance standards in respect of EMC aspects of such equipment.

In time, thanks to investment in marketing techniques and keeping up with the Jones, many thousands of items of non-compatible equipment will be in use in suburban areas and will, to a varying degree, be susceptible to trouble.

SO WHAT HAPPENS NOW? The manufacturer doesn't want to know. EMC does nothing to help his sales or profits — indeed it can adversely affect them. The consumer does not even think of EMC when he elects to buy a particular product. Having got it home his amplifier suddenly becomes a radio receiver. Who is to blame and who is responsible for the "nuisance" or "interference"? Naturally it isn't the manufacturer or retail supplier in the consumer's eyes. Therefore it must be the guy whose voice can be heard coming out of the loudspeakers.

WHO'S FAULT??

So, to the consumer, where does he seek his remedy. He can contact the source of "interference". As he is aggrieved, such an approach can vary from the mildly objectionable to the positively violent. Due to lack of understanding by the consumer he feels that his opponent must be in the wrong, particularly as the equipment has just cost so much money.

At this level, by the exercise of quiet diplomacy and the total co-operation of both parties, coupled perhaps with technical assistance from the Department of Communications or others, either the problem can be solved or a regime of mutual tolerance can be developed between both parties. If so, all is well and this is how most EMC problems are solved to date. We will consider cost later.

It sometimes happens that the consumer is not content with such an approach and seeks his remedy through litigation. There is no statute on which to base his complaint so the matter is usually considered under common law as applying to nuisance and the remedy sought is an injunction or damages against the "creator" of the "interference".

The Courts are ill-guided in this matter and experience has shown that many injunctions may be made against perfectly innocent people, quietly using equipment within the terms of their own licences and regulations. Such miscarriage of justice due to ignorance of the technicalities involved can only increase until the facts and consequences of EMC are properly and widely understood.

WHO PAYS??

Earlier references were made to the costs of fixing the problem of ill-designed consumer equipment. By saving a few cents the manufacturer has created problems which may cost tens or even hundreds of dollars to solve to an adequate degree of satisfaction of the user. The manufacturer excuses his action by saying that the market will not stand the extra few cents of cost (or few cents reduction in profit per unit of production) and that in any case only a very small percentage of the units are going to be installed in a troublesome environment. This may well be true

but for how long? So who pays the bill? This is usually settled by amicable agreement and expediency but very little recognition of true justice. Again, the real problem arises when one party, usually the complainer, is not prepared to be assisted or to recognize the technical liability arising from his ill-conceived choice of equipment and remedy is sought in law.

So it can be seen that EMC has social and legal significance which is bound to become worse with the electronics revolution unless adequate standards are defined and legal compliance is legislated for.

SPURIOUS COMPUTERS

In the United States the Federal Communications Commission has set standards for the spurious radiations from home computer equipment. The manufacturers naturally sought a stay of execution in respect of compliance. Imagine their reaction to a delay in compliance coupled with the mandatory condition that the equipment should be clearly marked to the effect that it was capable of creating interference, and as it was non-compliant with FCC regulations in this respect the liability for rectification of any interference caused by use of the equipment lies entirely with the user and all rectification costs are to his account. Not too many salesmen would draw attention to that condition!

What is needed is more mandatory recognition of the technical problems. There is no problem in setting and meeting the necessary technical standards. Making compliance with them mandatory by law is a wholly different problem and needs to be addressed by our legislators — sooner preferably than later when the situation has got out of hand. ■

The Value of a Smile

from "ARNS Bulletin", Sept. '81

From an old copy of GROUNDWAVE (Daytona Beach ARC)

It costs nothing but creates much.

It enriches those who receive, without impoverishing those who give.

It happens in a flash and the memory of it sometimes lasts forever.

None are so rich that they can get along without it and none are so poor but are richer for its benefits.

It creates happiness in the home, fosters good will in a business and is the countersign of friends.

It is rest to the weary, daylight to the discouraged, sunshine to the sad and nature's best antidote for trouble.

Yet it cannot be bought, begged, borrowed, or stolen for it is something that is no earthly good to anybody until it is given away.

And if it ever happens that some of our brethren should be too tired to give you a smile may we ask that you leave one of your own.

For nobody needs a smile so much as those who have none left to give.



*Have a
Smiley
Day*

For WIA Members only

THE WIA BOOK

**YES,
IT IS
READY!!**

This book attempts to bring together in one place a range of historical and other material including the best in VHF.

Coverage is given to a chronological table of events interesting to amateurs up to 1925, historical articles on Morse keys, emergencies, QSLs, call signs, satellites, the ionosphere and other items.

There are illustrations of QSL cards of 1926/28, a 1914 licence as well as other photographs.

This is Volume 1 of a Series you must not miss.

Stocks will be available from **YOUR DIVISION** or direct from

MAGPUBS
P.O. BOX 150,
TOORAK, VIC. 3142

Price will be
\$3.50 plus postage.

W0611

HOW'S DX

Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138



Conditions generally have been good with some excellent openings on 10 metres to all continents, and with the little listening that I have done the Novice operators have had a ball. Fifteen metres has had its moments but good pickings were there to be had even for the CW operator if they could get past the Pacific Island station who holds "COURT" below 21.150 MHz on SSB with his "SUBJECTS" which comprise many VK calls with both Novice and Unrestricted privileges.

It is time that amateurs who respect band plans and gentlemen's agreements joined forces and educated this presently minority group to the ethics of our hobby before it develops into a "CHICKEN BAND" area which is to be listened to by few and used by no one.

Twenty is its old reliable self and excellent signals are coming into the eastern States from the "early risers" in Europe on the long path.

HEARD ISLAND

For adequate coverage of Heard Island please refer page 18 where we have endeavoured to give a brief coverage of history, environment and amateur events, past, present and future. ■

ZD9

Tristan de Cunha/Gough Island is represented by ZD9BV. He irregularly appears on 20 metres generally at weekends — 16.00 to 17.00 UTC. ■

BY1PK

Doing good business when they are on 20 metres CW — understandably they DO NOT stay in the one spot for too long! But the equipment they are using is capable of THREE KILOWATTS to the antenna. ■

BEWARE 2 METRE JAMMERS IF YOU WERE IN JORDAN YOU COULD COME TO A STICKY END.

Whilst on a recent visit to Los Angeles, King Hussein JY1 worked many local amateurs on 2 metre repeaters. During his QSOs there was some jamming as is typical of repeaters, but I don't think JY1 would have this problem in Jordan.

Jamming of radio repeaters by licensed amateurs in Jordan incurs a two year prison sentence and a fine. If communications are jammed by an unlicensed person the penalties are far worse.

WOULD THIS WORK IN VK???? SENEGAMBIA

Since Senegal and Gambia united to become one country on January 1, 1982, the amateurs have been relatively quiet, although C5s and 6Ws have been heard on the rare occasion.

There is the possibility that for DXCC purposes C5 and 6W will be deleted and one new country will be added to the DXCC list. This could be one of many changes in the next year or so.

US TRUST TERRITORIES

During 1982 many islands in the Pacific that belong to the US Trust Territories will become Commonwealths within the USA (as Puerto Rico). One which has elected to do this is the Mariana Islands which will be known as the Commonwealth of the North Marianas. Palau Island became the Republic of Palau last year and a new nation called the Federated States of Micronesia will come into reality. This will probably include the Marshall and Caroline Islands.

NO LEGAL ACTIVITY

Latest news from the Bangladesh Amateur Radio League is that the authorities have

decided not to issue licences for the time being. This is a very unfortunate setback to amateurs world-wide and particularly those in S21-land.

Any station heard signing .../S21 could be doing so without official consent and obtaining a card would therefore pose a problem.

MORE HIs?

It is believed that 1,783 people sat for the Amateur Qualification Test late last year and those that successfully passed will go on to undertake the CW test.

Therefore there may be more activity with that prefix in the near future.

OBJECTIONS TO AMATEURS

The IARU recently received a letter from the Ministry of Transport and Communications of the SOCIALIST REPUBLIC OF THE UNION OF BURMA asking them to communicate to ALL amateurs that radio communications from radio amateurs ALL over the world to ANY station in that country is strictly prohibited as NO amateur radio station has been licensed.

Therefore DF8./XZ are you genuine??

ABU AIL

They made it! And what a signal on 10 metres in the eastern States. This remote area, located in the Red Sea, has one building and that is the Lighthouse. If you were one of the lucky ones, and you would have to be if you depended on 20 and 15 metres for a QSO, then QSL to F6ATQ, QTH 1982 Call Book.

OY5

Anyone needing this prefix or the Faeroes for a new country then listen for OYs 5IB, 5ACQ, 5BTX, 5ENX, 5FUG, 5KMU and 7WI. QSLs to the home SM call (e.g. OY5ACQ = SM5ACQ).

They will be operating all bands on CW and SSB and are due to commence operations the first week of July.

5H3

Bjorn 5H3BH is settling down to life in Dar es Salaam and will be active on the bands until the end of 1983. Bjorn is a Management Consultant working with a Tanzanian company and he is engaged on a training programme to work with the Tanzanians and gradually be phased out as they become more familiar with foreign practices.

The station that he has set up comprises a FT101Z exciter into an FT2100Z feeding a TH3MK3 at 13 metres. Without spending too much time on the air in excess of 3,000 contacts have been enjoyed since December. WAS has been achieved and all confirmations have been received. Other amateurs such as 5H3AA, 5H3PA, 5H3KG and 5H3JR (Jack Rabbit), Father Chuck, to mention a few, are quite active on the bands.



中国无线电运动协会业余电台



For anyone wanting to set up a sked, the address is Bjorn Humble, PO Box 4358, Dar es Salaam, Tanzania. IRCs or a "greenie" would be appreciated to help defray escalating postal expenses. Via the bureau to the home call SM0EAL is another method for a QSL.

Unfortunately amateur "ADVERTISING" in the form of call signs on the envelopes to and from is discouraged, as is the case with many other countries.

DX SILENT KEY

It is sad to report that Soma 4S7YL/8Q7AC/V59YL, a friendly lady that was known across all continents with broadcast quality modulation, became a Silent Key in early April after a period of illness resulting from a vehicle accident.

Soma, with the OM, Wick, and daughters, Luchmea and Chitra, did many tours of duty to 8Q7-land, Wick being the local engineer and Soma doing announcing duties at the studios of the regional broadcast station in Male.

Sincere condolences from all DXers are extended to Wick 4S7WA and family.

THE LONG PATH

Proof that the "posties get the mail thru".

I have received an envelope from VK6NE, sent to him from the German Democratic Republic and addressed to 388 Huntriss Road, Woodland 6018, his correct address but no country defined.

The letter, containing QSL cards, was posted in BARTH, GDR, on the 30th November 1981. It was received in USA postal district 60016. Posted again from DES PLAINES 60016 on the 7th December, then through their North Suburb USPO on the 10th December and on to Melbourne, where it was received on the 19th March, 1982, and finally to Perth, arriving on the 23rd March, 1982. Quite an eventful trip for a small envelope????

LATE QSL (or was the postage too dear) Never give up on that wanted QSL.

Morrie VK3BZ recently went to his mailbox and received a pleasant surprise, for there was a QSL card for a contact he made on 29th August, 1932.

Accompanying the card was a letter from Leland Smith W5KL ex-W4AGI, explaining the delay. When Leland contacted Morrie on 40 metres in 1932 he was but a young teenager with very little money but much enthusiasm, so he wrote out the QSL but never saved the required amount to drop it in the mail-box.

Recently, he found the card along with another 19 VKs and ZLs which had also met the same fate, and upon checking the current call book Leland was thrilled to see that the call sign was still allotted to Morrie and he could rectify his "tardiness".

For old-timers that may have worked Leland W4AGI in the 1930s, he is still active on all bands, CW and SSB, under the call sign W5KL, and as he has been fully retired for 11 years he now has plenty of time to "rag-chew".

PROFILE G3NBC

Ken Hurrell G3NBC was born in London

QRH 7170 kc.

1036 GREEN ST.	TARRANT, ALABAMA	U. S. A.
Radio_YK3BZ...Ur_pdc...Sigs wkd hr on 8/29/32, at 7:15AM., CST.		
QSA 3...R4... Wx.ok QRM yes QRN nil QSB yes Band 40 m.		
XMTR:	<h1 style="font-size: 2em; margin: 0;">W4AGI</h1>	RCVR:
247 xtal		3
247 dblr		201a's
211-d Amp		
DX_VK, ZL, OM, G, FB, PA, etc.		
Remarks: Sri Iso so bum. The VK's fade out at 6:30 usually but ur sigs just kept coming in. Hi.		
Pse QSL OM!	Please call Ken Hurrell	Gnd Luck LELAND SMITH, Op.
Tnx	es 73	Op.

WORTH PRINT

and lived for most of his life in and around that area and in the County of Essex until 1973, when he moved to Dorset.

All his working life has been spent in connection with radio/television and electronics, even when he spent a few years in the RAF in the early 1950s. Ken found the Air Force work extremely interesting as he was in the radio communications section of the Bomber Command and spent most of his time working on BIG transmitters.

Ken's interest in amateur radio has been with him for as long as he can remember (short memory) and he spent many years as an SWL before he took out the call sign "G3NBC" in September 1958.

On the first day he had his licence Ken was thrilled to work a K3 on 10 metres with his home-brew transmitter (45 watts of AM from an 807 in the final to a dipole antenna). The receiver was a Marconi CR100 converted to the amateur bands.



Ken G3NBC

Ken first worked into VK on 9th March, 1959, and that was on 15 metres with VK3VJ, the ultimate in DX working for those times. By this time Ken was using SSB with a home-made transmitter, a Heathkit receiver and a three band quad.

In 1969 Ken rebuilt his transmitter to use a pair of TT21s, which gave a peak

output of 300 watts and fitted into a 6 ft. metal cabinet, a rig that he was so proud of that he still has it tucked away in a cupboard in case he may need it.

Ken is very keen to work "that new one" and his current DX score is 322 with 4 not yet confirmed. Ken is very ably supported and assisted in his hobby by his XYL, Kitty. Kitty is also very interested in listening to the radio, but as it is against regulations in G-land, she is unable to talk with Ken and as yet she has not tried for a licence.

Ken has been a member of the RSGB for 24 years and was certificate manager for the RSGB in the 1960s, but had to give it up as there was not enough time for his other hobbies of collecting stamps, home decorating and amateur astronomy. When Kitty is not keeping Ken company at the controls she keeps herself out of mischief with either her embroidery, tapestry or painting.

Ken's current equipment is an FT101ZD, FL2100 to a Mosley 3 element Mustang on top of a tilt-over mast at 45 feet.

The area in which they live in Dorset is very ancient with remains from the time of the Roman occupation and prehistoric times, although the village of Marnhall where they live was originally an Iron Age settlement.



Kitty

YL INFLUX?

Comparison between the 1980 Foreign Call Book and the recent 1982 edition show an increase from 101 to 432 licensees in the Falklands Islands VP8. Though a thorough check has not been done YLs are predominant and for a population of some 1,800 it would have to be the most amateur orientated area in the world and take the prize for the most YLs in any one prefix.

Anyone with the Call Books, time and inclination may care to do some research for interested readers. Any volunteers?

VATICAN AWARD

Due to reasons unknown, the Vatican City Special Award dates for contacts has been extended until the 30th of June this year. As a starter for those wanting a qualifying QSO with HV3SJ, he can frequently be found 10 kHz above the International Pacific DX net when I am NC on a Tuesday, and with Luigi I0LLZ drumming up business for them on the Pacific DX net frequency they are kept busy, and I am driven crazy.

TRINIDADE

Another attempt will be made this month by all reports, so sit back and wait hoping that everything fits into place for them this time.

CHOPPER HOPPER

From unconfirmed rumours and "reading the mail" on 20 metres, indications are that a well known VK amateur, electronics parts manufacturer, importer, film maker and explorer will be visiting many countries in the next couple of months and the main method of transport will be by helicopter. From previous experience it is guaranteed that this exploit will receive vast media coverage as other expeditions have.

SMOM

Much wanted and it stands for the Sovereign Military Order of Malta. It is a fully independent entity which was founded in 1099, from 1310 to 1522 had the sovereignty of Rhodes and from 1530 to 1798 was located on the island of Malta.

Established in Rome in 1834, where it now holds several extra-territorial areas. This Order is represented in Australia by the St. John's Ambulance organisation. For further details work the country, as a lot of further information is on the card. QSL to Mario I0MGM, Call Book QTH.

T32

WA6VNR and WB0BNR will be operational from T32-land from the 15th to the 24th of this month. Operational on all bands 10-160 metres on both CW and SSB with perhaps a try on SIX METRES. Good luck.

Assistance and information that have made these notes possible have come from Region 3 News, World Radio, QST, QTC, RSGB magazines and amateurs, including G3NBC, JY3ZH, ON7WW, VKs 2DXH, 3BZ, 3UX, 3DFD, 4AIF, 6HD, 6IH, 6NE, 6XI and Eric L30042. ■

SSB WORKED ON THE EAST COAST

10 Metres:
3V8JYC, 5Z4CM, J20Z, WB0MKR/KH3.

15 Metres:
5N9ACO/8, 9Y5ONP, FH8OM, FR0GGL, GJ6UW, H44AP, SV1EX.

20 Metres:

4U1ITU, 5B4JE, 5H3BH, 5V7RE, 5Z4CF, 8P6AH, 9Q5MA, 9Y5ONP, A22BW, A71AA, AH2L, GE0ZAD, DL2VK, FM7WE, FO8IW, FR7ZN, HS1ALP, J20Z, JX5VAA, KP2A/KP1, KV4AA, OX3ZM, OY5NS, TA1MB, TF3A, TL8CK, UG6GAF, VE1A1/1, VK9NM/LH, VP2MO, VQ9CW, W5BTH/KH8, WB0MKR/KH3, WD9CDU, XT2AU, XZ9A, YO3QK, ZB2J, ZD9BV, ZK1CG.

21 Metres:

CE7NR, CO7AM, FR0FLO, GB4DX, GB4GS, GU3KFT, TI2LL, VP5BAM, 6Y5HN, AP2KS, CP6EL, EM0ZC, RP2BCV, VP2MGG, VS6EL, VS6JW, VS6KV.

CW WORKED ON THE EAST COAST

21 Metres:

KC6DZ, OE5BS/5N7.

28 Metres:

A4XIZ, KC6DZ, VC3JEV, VS6EY.

QSLers OF THE MONTH — VK4

C5N0WRA, 9M2HZ, C21NI, EC1MC, EC6DI, EC8DP, HK0BKX, HZ1AB, KC6DX, KC6DY, SP9CDA, SV0AA, T2VEL, VU2RA, VU2SGR, W5VFO/HC7, W9DCN/C6A, XF4MDX, ZB2EO, ZK2EL, ZK2TA.

QSLers OF THE MONTH TO SWLS

8Q7BD, 9Y4KG, DJ1US/ST3, FO8IK, G3GNR (10 MHz), G8FR (10 MHz), GD4BEG, GU4CHY, HB0ALO, HL1CX, KA6HIQ/KH3, P29PS, T3AT, TF3YH, VK9XT, VK9YT, XE2XW, Y48YL, ZS2CR.

SSB WORKED ON THE WEST COAST ON

10 METRES

5H3DM, 7P8BX, 7Q7LW, 9U5WR, 9X5PP, A92F, C53CL, EP2TY, FB8WG, J20Z, JW5IJ, JY3ZH, OD5AW, TN8AJ, TR8BJ.

SSB WORKED ON THE WEST COAST

1 R/CW: EI9J, SM6EHY, SM7BIC, UK2RDX, UQ2PQ, VK9YC, ZS5LB.

1.8/SSB: G3RTY.

21/CW: DJ6SI/3X, KP2A/KP1.

21/SSB: 6Y5HN, VP2EC.

28/CW: DJ6SI/3X, FB8WG.

3.5/CW: GI3IVJ, T30AT, UL7CAD, ZK1CQ, ZM7VU, ZS5LB.

3.5/SSB: A22BW.

7/CW: GI30QR, OY7ML, TN8AJ.

CW LISTENING WITH ERIC L3-0042

80 Metres:

HA4XT, UA1DZ, UA0LCZ, UK5IBB.

40 Metres:

EA1QT, FG0QT, FG0DYM/FS, GI30QR, GW3AX, HK3YH, HK0BKX, KG6RT, KP2A/KP1, OK1TN, ON5NT, SM7ALC, UK2GDZ, UO5OGK, VK9NM/LH, VP8ANT, YU2CBM, ZK1CQ, ZL4PO/C, ZM7VU, YV4BOU, 8P6AU.

30 Metres:

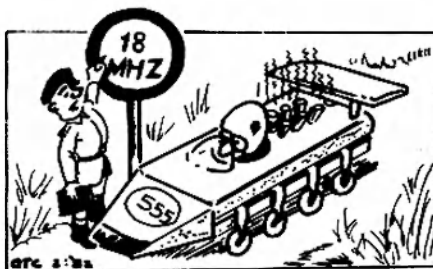
DL6NB, ELOBY/MM, GB2RN, GD4BEG, GW3AHN, F6ELA, HB9CJC, JA5DQH, JA5CKJ/3, OE6RH, OK1DAV, OZ1LO, PA0CQ, DL2GG/YV5, ZM7VU, 5Z4CY.

20 Metres:

EA6DI, FR7BX, FR8JCM, HI8LC, HP1AC, HS7AID, JT1KAA, KC6DZ, P29RH, SVINC, T30AT, UD6AI, V2AU, VS6EN, YT3L, ZB2EO, ZM7VU, 4S7MX, 4U1ITU, 4X4XX.

17 Metres:

DL7HZ, ZM7VU.



15 Metres:

BY1PK, EA6FV, FO8IW, HC4BB, HP1XZK, HS1ANM, UL7XE, VS6CF, VK9YC, XE2ACG, YC5AR, ZK1CQ, ZM7VU, ZS6ME, ZS6ANL/3D6, 3B8CF, 5W1AB.

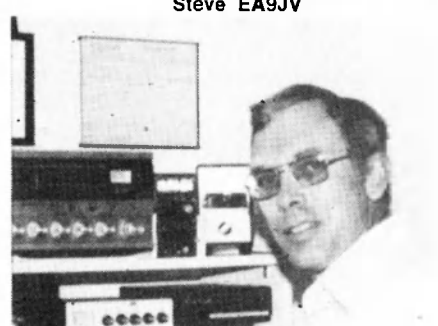
10 Metres:

A4XJP, CR9UT, I6ZOO, JO1BMV, KC6DZ, OE1EHB/YK, UD6DNJ, UK9HAC, VQ9CW, VS6EY, VU2VTM, XE1CM, YB3DC, YV1DTL, ZK1CQ, ZS1ZQ, 3B8CF, 4X4FA, 5Z4CM, 8J5SUN.

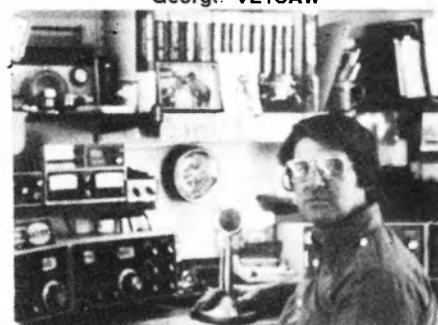
Faces Behind the Key and Microphone



Steve EA9JV



George VE1CAW



John KA2BYC



Ignacio EA2IA

HELP WITH INTRUDER WATCHING

**THE
BIG
THREE**

LIST
PRICES

ICOM

IC720A HF Deluxe Transceiver \$1479
 IC730 HF Transceiver \$999
 IC22U 2m FM Mobile Transc. \$359
 IC25A 2m FM Mobile 25W \$429
 IC4A 70 cm Handheld 1.5W \$339
 IC2A 2m Handheld 15W \$309
 IC290 2m FM/SSB/CW Mobile \$599
 IC251A 2m Multimode 10W \$349

YAESU

FT107M HF Tx \$1328
 FT902M HF Tube Finals \$1195
 FT707 HF Mobile Transceiver \$795
 FT480R 2m All Mode Mobile \$589
 FT290R 2m All Mode Portable \$395
 FT208R 2m Handheld 2W \$368
 FT780R 70cm Transceiver \$695
 FRG7700 HF Receiver \$539

KENWOOD

TS930S New HF Pacesetter POA
 TS830S Special this month \$995
 TS530S HF Transceiver \$769
 TS130S HF Mobile \$699
 TR9000 2m Transceiver \$563
 TR7800 70 cm Transceiver \$435
 R1000 HF All Mode Receiver \$515
 TL922 HF Linear Amp \$1336

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**IT IS WORTH FITTING
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DON'T GET STRANDED THIS WINTER

- Easy Cold Starting
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- These were \$59.95
 This month only
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\$29.50

Scotchlok Connectors 20c ea.
 18V @ 1a Regulators 60c ea.
 BC558 Transistors 16c ea.
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 .8 MHz Series 400 Choke 1.50
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 Bags of mixed components,
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 take your pick — Great Value

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 ROTATORS**



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DR7500R HEAVY DUTY
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\$219

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\$319

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\$299

Requires 6 Core Cable

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5 watt Resistors 30c ea.
 10 watt Resistors 50c ea.
 10 uF 50V Bipolar Elec. 30c
 1000 uF 10V Electrolytic 60c
 470 uF 25V Electrolytic 50c
 1 uF 63V Electrolytic 20c ea.
 Tantalum Capacitors 50c ea.
 Toggle Switch DPDT 16 amps centre off \$1.20

ET1496 FC8
 SERIES 4000
**CROSSOVER
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A crazy
\$2.50 ea.

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 CITIZEN BAND
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 'Cybernet' Chassis**

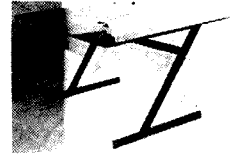
THIS 40 CH. TRANSCEIVER BLENDS RUGGED CONSTRUCTION WITH CLASSICAL STYLING. Technically, it produces a new level of performance which reflects the outstanding reputation of Electrophone.

\$239

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COMMUNICATION CENTRE

**PHONE ENQUIRIES:
 (03)**

288 3107

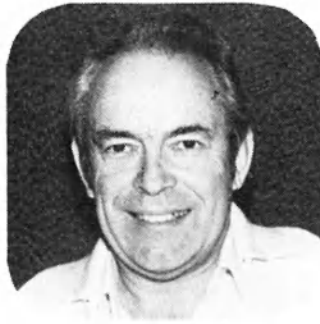
168 ELGAR ROAD, ROX HILL STH., VICTORIA 3128



Wally Watkins VK2DEW
Alternate Federal Councillor



Courtenay Scott VK3BNG
Honorary Treasurer



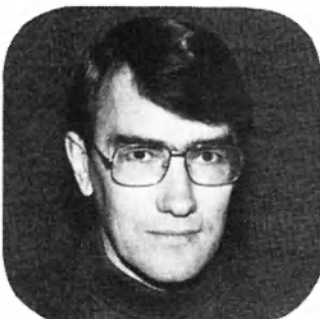
John Butler VK5NX
Alternate Federal Councillor



Michael Owen VK3KI
IARU Liaison Officer



Ken Seddon VK3ACS
Federal Executive



Bruce Hedland-Thomas VK600
Alternate Federal Councillor



David Wardlaw VK3ADW
Immediate Past President and
Joint IARU Liaison Officer



Ivan Ling VK7XL
Alternate Federal Councillor



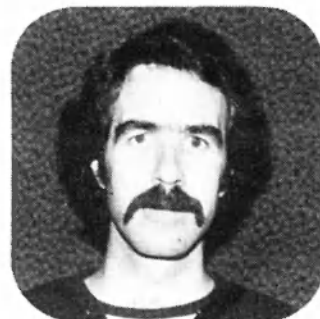
Alan Noble VK3BBM
Federal Councillor



Bruce Bathols VK3UV
Executive Chairman and Editor of AR



Fred Robertson-Mudie VK1MM
Alternate Federal Councillor



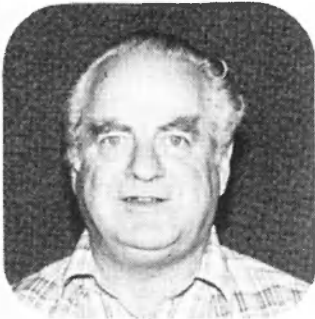
Dave Clegg VK5AMK
Alternate Federal Councillor

COUNCILLORS

AT THE

W

FEDERAL C



Des Clarke VK3DES
Alternate Federal Councillor



Jenny Warrington VK5ANW
Federal Councillor



Peter Fudge VK7BQ
Federal Councillor



Neil Penfold VK6NE
Federal Councillor

AND EXECUTIVE

1982

IA

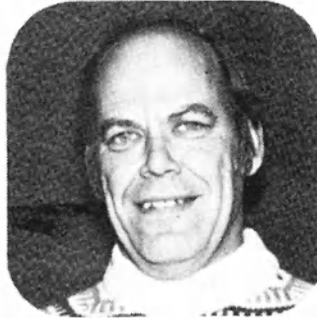
CONVENTION



Guy Minter VK4ZXZ
Alternate Federal Councillor



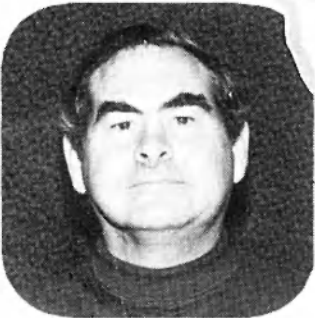
Peter Wolfenden VK3KAU
Federal President



Earl Russell VK3BER
Federal Councillor



Peter Dodd VK3CIF
Secretary/Manager



Ron Henderson VK1RH
Federal Councillor



Tim Mills VK2ZTM
Federal Councillor



Harold Hepburn VK3AFQ
Federal Executive



David Laurie VK4DT
Federal Councillor

Photographs and Processing Courtesy of Dave Shaw VK3DHF



LISTENING AROUND



Joe Baker VK2BJX
Box 2121, Mildura, Vic. 3500

"NIP O' WHISKY"

There's at least one New Zealander who doesn't like the sheep that they have over there. When Alan (W6UBM) of North Hollywood asked Fred (ZL1ACP) on "ten" one day if he had anything to do with New Zealand sheep farming Fred was heard to reply "No — I hate the stinking things", which wasn't exactly a good advertisement for New Zealand's "baa-baas".

Anyway, then Alan told Fred of how, many years ago, he had a friend who had 10,000 sheep somewhere in California and, just after shearing, up came a cold snap which resulted in many of the sheep contacting pneumonia. So, in order to save as many as he could the friend gave all the baa-baas a nip of whisky, and he reckoned that because of this about half the flock were saved. So there's an idea for some of you mainland sheep cockies — when the weather suddenly turns sour, give them a nip of Scotch.

A NEW RECRUIT??

A visitor to my QTH a few days ago was Bill McKinnon, a former resident of Mount Gambler and now living in Mildura. Bill is not an amateur, but is interested in radio, so on the night I put him up here, I decided to give him a practical demo on what amateur radio is all about. On "80" I introduced him to many of the regular night owls, but was particularly pleased to hook up with Leo (VK5GJ), seeing that Bill formerly lived where Leo lives. Bill and Leo had a great time reminiscing about the Mount, and people that were known to them both.

On the following morning I decided to let Bill hear some of the more distant stations and fired up on "TEN" on my converted Kraco. Soon we linked up with Art AA6A, of Petaluma, 40 miles north of San Francisco, and 20 miles from the ocean. Art was using an Icom 720 with a four element beam aimed right on Australia, and the most that I could offer was my very, very QRP signal squirted in Art's direction from my 27 feet high three element beam. Art had difficulty in even copying my call sign, but the fact that I could contact America duly impressed my visitor, who could hear Art quite well. Art had trouble copying the "Victor Kilo Two Bravo Juliet" bit — especially the "Bravo", so I decided to throw that phonetic overboard and when I substituted "Boston" he got it quite well. Lesson to be learned here I think is that because of our Aussie strine, it might sometimes be wiser to use a place-name more easily recognisable by the chap on the other end.

HOW OLD ARE CALCULATORS?

Had a word or two with Sue VK5AYL the other night — or rather, early the other

morning. Sue has left her job with ABC-TV in Adelaide and she is now studying electronic engineering. She was preparing an essay on the early history of computers or calculators, and she told me that her research has revealed that the first calculators were in use hundreds of years before the birth of Christ. She said that they used a system of gears to predict the position of planets. She spoke about the early ILYAC and UNIVAC computers, and said that one with 18,000 valves was used in World War Two for some very hush-hush ballistics work. SHE SAID THAT ALL OF THE WIRING FOR THE 18,000 VALVES WAS DONE BY WOMEN. Good luck, Sue, with your studies, and I'm certain that the good wishes of all who read this will go with you also.

TEN METRES

Reverting back to my earlier mention of ten metres, which has been pretty good during March. Even with a humble QRP of approximately 14 watts PEP from the converted Kraco, I was able to have a word with Tom, a student of the Indian Institute of Technology at Madras. Tom was using the club station VU2NCS with only 40 watts into a long wire aimed towards Aussie, and I heard him work stations right across this continent from Perth to Canberra, and he was really having a ball.

ODD PLACES

Why do those VK6s often have difficult place names. There's a chap named Terry VK6NTM who lives on wheat and sheep farm at WYALKATCHEM, 100 miles east of Perth. Terry's brother, aged 24, is off to Antarctica soon. Not a bad place to be, I suppose, in hot weather, but I don't think I'd care to be there in winter.

WATER SPORTS

What is it that they have on Sydney Harbour (besides THAT coathanger and Opera House)? Is it a hydrofoil or an aerofoil? Apparently there is a fine distinction and Gordon VK5HM knows the answer. Anyway, be it hydrofoil or aerofoil (who cares), apparently it has long since replaced many of the ferries that, as a child born in Sydney, I remember from all those years ago. Got talking (as I usually do in the wee small hours) to Gordon about the joys of trips on Sydney Harbour (there's nothing to equal it anywhere else in the world) and Gordon told me that those posts to which they attach the ferries at Circular Quay were not hitching posts or mooring posts, but BOLLARDS. Ah well, I'm learning all the time. Want to know anything about anything? If so, ask Gordon. He's got all the answers tabbed, and he's a pretty cluey bloke, too. But don't fall asleep between overs, Gordon! Leave that to me to do! That's My privilege!

Ahoy there any of you ex-Navy types reading this. Ted W6SRP near LA in California was heard at Buronga, and told me that he had a friend, Alan, in the shack, and they wanted to know if I was anywhere near Perth in Western Australia! Told that I was well over a thousand miles east of Perth, he was somewhat disappointed. It appears that Ted and Alan have some buddies over Perth way, and they were anxious to hook up with them. So if any of you Perth fellers know these Californian Navy types, of course — go to it, man!



On the observation deck at Tullamarina Airport. Left to right: Don VK3VPW and XYL Uter, Olwyn and Des VK3BSB.

TO THE AIRPORT

Just before Christmas I was a guest at the home of Don VK3VPW and his wife, at Narre Warren, and while there we went into Melbourne to meet Des (VK3BSB, of Paynesville, Glppsland) and his wife, who were about to leave for the Apple Isle for a short holiday. We then headed for Tullamarine Airport, only to find that the departure time for Des's plane had been put forward by a couple of hours, so we eventually QSY'd to the airport lounge with a liberal supply of 807s to help us pass the time. We found time also to take some photos and these were taken on the observation platform. Des was well equipped electronically for the trip, and in the days that followed we kept in touch with him while he was touring. The picture shows a happy foursome, just before take-off. It would have been a happy fivesome, but for the fact that yours truly was the one behind the camera.

OLD-TIMER

On "ten" the other day I heard ZL1VL in contact with VK2VYI. No handles were heard while I was listening. The New

Far Reaching Net

Zealander was coming in quite well but little or nothing from the VK2, who probably was beaming straight towards ZL and away from me. I heard ZL1VL say that he was all of 85 summers and that he's been licensed for 52 years. Any takers to beat that record? Why, even Gordon (VK5HM) has only been on the air since 1934. ZL1VL is also an ex pilot and he finds now that the digital readout on his gear is a great help to those well on in years.

The low frequency end of "80" is not the only part of that band on which the brass pounders can be heard. Leastways, a couple of times recently in the wee small hours I've heard some pretty slick CW operators on the high end of 80, VK2s I think. And they were ripping along at about 30 w.p.m. or more, which is much too fast for me to keep up with. Anyway, it was great fun trying to read these two very experienced operators. The top of 80 is usually occupied at this time by stations trying for the South Africans.

73s to all.

Joe VK2BJX. ■

EMC

(Electro Magnetic Compatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO
VK3QQ,
Federal EMC Co-ordinator, QTHR.

On the 25th of each month amateur radio enthusiasts Australia-wide, all employed by Comalco, meet on-air to discuss aspects of their work, leisure activities and radio. It is a net which had very humble beginnings when Kevin Whittaker from Bell Bay (Tas.) Smelter was on holidays in Weipa (Old.) and wanted to contact a friend back home. He used Weipa Safety Officer, Dale McCarthy's equipment and was able to contact Bell Bay Metallurgist, Norm Thorley.

This contact led to further contact between the two operations centres, with Dale, Arthur Stead of Survey and Alan O'Connor of Communications joining in.

The Comalco Net developed from this and each month employees from Bell Bay, Weipa, Thomastown Research Centre and C.R.A., Melbourne, all take part and they are hoping that employee amateurs from Yennora, Tiwai Point, N.Z., and other Comalco centres will soon join in.

Radio enthusiasts not employed by Comalco have shown interest from as far away as London and regular contact is made with the Radio Officer on the "Curtis Oceanic" and also an engineer on an ore carrier which travels between Gladstone and New Zealand.

Further information about this net may be obtained from Dale VK4KDM or Norm VK7KTN, both QTHR.



Arthur, Alan and Dale pictured at Dale's house on Comalco Network Night, January 1982.

Norfolk Island Holiday

During March this year, armed with a bag (which the XYL thought contained fishing gear) "choc-a-block" with a 120V Kenwood, linear and helicals for 3.5, 7, 14, 21 and 28 MHz, John VK2AMV spent a very enjoyable five days holiday on Norfolk Island.

As the XYL hates radio John had a limited amount of time on air but he hired a small car and worked 30 different countries and 203 contacts whilst mobile on all bands.

John has been licensed since 1949 and is still very keen. He says that Norfolk Island is 5 miles long and 3 miles wide and an extremely enjoyable place to go for a holiday and particularly work DX. ■

:: ::

At today's prices, it's OK to cry over spilled milk.



John's QSL card showing John, hire car and picturesque scenery.

VK2 MINI BULLETIN

Athol Tilley VK2BAD

P.O. Box 123, St. Leonards, NSW 2065

COUNCIL REPORT

The 1982-83 Divisional Council met for the first time on the 16th of April and appointed the following office-bearers:—

Divisional President: Susan Brown VK2BSB.

Secretary: Athol Tilley VK2BAD.

Treasurer: Gordon McDonald VK2ZAB.

Vice-Presidents: Tim Mills VK2ZTM and Stephen Pall VK2PS.

Affiliated Clubs and WICEN Liaison: Peter Jeremy VK2PJ.

Education Service: Stephen Pall VK2PS.

New Membership: Gordon McDonald VK2ZAB.

The positions of Repeater Committee Chairman, WIC Property Officer and Publications are held by Tim Mills VK2ZTM.

Dural Officer-in-Charge and Broadcast Officer: Jeff Pages VK2BYY.

QSL Liaison: Susan Brown VK2BSB.

AR VK2 Sub-Editor: Athol Tilley VK2BAD.

Other positions include—Library Officer: Bill Hayes VK2AJL. Course Supervisor: Cec Bardwell VK2IR. Intruder Watch Co-ordinator: Bill Martin VK2EBM. Co-ordinator for the Disabled: Jim Saunders VK2BNY. State WICEN Co-ordinator: David MacKay VK2ZMZ. Honorary Solicitor: Fred Herron VK2BHE.

The positions of Slow Morse Co-ordinator and AR Publicity Officer for VK2 have been filled and will be confirmed at the May Council meeting.

EDUCATION SERVICE COMMITTEE

Ken Hargreaves VK2AKH, Ian O'Toole VK2ZIO, Les Dickenson VK2DNS, Dave Wilson VK2ZCA, Ian Hook, Martin Lansdowne, Kurt Welzel VK2GQ, Bro. Peter Connolly, Mrs. D. Browne, Stephen Pall VK2PS.

WICEN COMMITTEE

Mike Richter VK2BMM, Syd Griffiths VK2AHF, Eric van de Weyer VK2KUR, Christo Simeonoff VK2ZAX, Fred Parker VK2ZBK, Ian Nance VK2BIN, Alan Boxsell VK2YEQ.

DURAL COMMITTEE

Jeff Pages VK2BYY, Roger Henly VK2ZIG, Charly Walker VK2BXX, David Walters VK2AYO, Colin McKinnon VK2DYM, Phil Cole VK2BQC.

STATE REPEATER COMMITTEE

Gordon McDonald VK2ZAB, Michael Goard VK2ZNV, Jill Rowling VK2DLY, Henry Lundell VK2ZHE, Paul Smith VK2ZSA.

CHANGE OF ADDRESS?

Consideration was given to the motion carried at the recent AGM recommending that Council purchase a suitable commercial property in the Parramatta area as future

Divisional headquarters and sell the Atchison Street property. Stephen Pall and Susan Brown were appointed as Council representatives in negotiations and they will obtain firm quotes for the purchase of Atchison Street for consideration by Divisional Council.

PRIZES

Publications were donated as prizes to the Urunga Convention and Council resolved that this Division would donate up to \$25 worth of publications to affiliated clubs requesting prizes for field days.

CONVENTION

Federal Councillor Tim Mills VK2ZTM and Alternate Federal Councillor Wally Watkins VK2DEW presented and discussed agenda items for the WIA Federal Convention. They noted Council's views on the various items as a guide to their vote at the convention.

CALLBACKS

Broadcast Officer Jeff Pages reported that one request had been received for full callbacks to be taken on 10 metres after broadcasts. Council decided that the existing system of callbacks involving call signs only continue, due to the considerable time required for personalised callbacks on all frequencies. The meeting closed at 11.16 p.m.

AMATEUR RADIO TO THE RESCUE

On the 16th of April a car overturned several times near the QTH of Peter VK2TK. Driving quickly to the scene, Peter found one passenger (without seat belt) had been thrown onto the road and was suffering extensive facial lacerations and broken fingers, the other occupants being mainly uninjured. Peter called for assistance on repeater 6650 (Mt. Bindo) and Ross VK2BRC replied almost immediately. Ross passed the request on for Police and Ambulance services to Bathurst Police.

Bruce VK2FD took over communications and phoned the relatives of those persons involved in the accident.

Peter is to be commended for his quick action in establishing protection at the accident site, tending to the injured person and requesting assistance. It is of note that all amateurs involved were members of WICEN.

Do YOU know your procedures well enough to operate calmly, efficiently and effectively in an emergency?

Submitted by Ross VK2BRC.

WICEN AT BATHURST

Communications at the Easter 1982 motorcycle races were again provided by members of WICEN and the SES. Net control was based in a 12 metre caravan with three VHF frequencies and 27.240 MHz being available.

Prompt communication of information

greatly assisted the marshalls and race organisers, in one instance allowing an immediate decision to stop the race preventing further collisions following a serious accident.

Fourteen amateurs took part, including Jan VK2KGH, Neville VK2DR, Martyn VK2DLD, Wally VK2DEW, Frank VK2ZFE, Kim VK2ASY, Peter VK2TK, Jack VK2DDN, Barry VK2DBA, Chris VK2PNI, John VK2BHM, Ross VK2BRC, Peter VK2KBP, Gerald VK2BFR.

In all, 585 messages were handled and for the first time the organisers were less worried about having sufficient people to man check points.

Submitted by Ross VK2BRC.

DETAILS OF TWO CLUBS AFFILIATED WITH THE NSW DIVISION:

Novice ARG of NSW

17 Bamfield Avenue, Yagoona 2199.

Net: Tuesdays at 2000 EST on 28.385 MHz using VK2NAZ.

Meetings: 14 Atchison Street, Crows Nest, Saturday, from 1 to 4 p.m. EST.

President: John VK2PBW. Vice-President: Stuart VK2ADE. Secretary: Dennis VK2KVV. Others: Michael VK2EPM, Winstone VK2KWV, Jim VK2NBY.

Magazine: "NARG NEWSLETTER", bi-monthly. Editor: Michael VK2EPM.

Castle Hill RSL ARC

C/- 16 Mills Road, Glenhaven 2154.

Meetings: 1st Wednesday of month at 8 p.m. at Castle Hill RSL Club.

President: Bob VK2VKP/YVO. Vice-President: Karl VK2PLT. Secretary: Colin VK2DYM. Other: Colin VK2ZIO.

Classes: NAOCP each Tuesday at 8 p.m. at Castle Hill RSL.

NSW members and clubs are invited to submit news for inclusion in this column to PO Box 123, St. Leonards 2065. News for August AR should reach us by 20th July.

Athol Tilley VK2BAD. ■



A Definition of Resistance in Series.

K. B. Pounsett VK4QY
33 Lasseter Street, Kedron, Qld. 4031

WORKSHOP

The 1982 Radio Club Workshop of the Queensland Division was held over the weekend of 17th and 18th April at Griffith University in Brisbane. This gathering of Council members and delegates from 20 clubs throughout the State (from Brisbane to Cairns, to Mt. Isa) was an unqualified success.

The workshop acts as a meeting place and a forum for a wide cross section of the 1,250 or so VK4 amateurs who are members of the Institute. Club motions were presented to the workshop, some gained favour, some were rejected. Motions for the 1982 Federal Convention were discussed at length, leaving no doubts in the minds of the Federal Councillor and his assistant as to the thinking of VK4 members in regard to these. The delegates were divided into working committees to formulate suggested WIA policy on a number of important subjects.

POLICIES

From these working groups a number of valuable policy statements emerged and these will be presented to Federal Executive. Some of the subjects covered were Education, Intruder Watch, Third Party Traffic, Gentlemen's Agreements, EMC, History, WICEN, Public Relations, Novice Licensing, Examinations.

M.H.R.

Again this year Council and delegates welcomed Mr. David Jull, MHR, member for Bowman, who is chairman of the Government's Backbenchers Committee for Communications. Mr. Jull had been given a number of questions a short time before the meeting and had very kindly obtained answers from Mr. M. R. Ramsay, First Assistant Secretary of the Radio Frequency

Management Division of the Department of Communications. The questions related to a number of matters of interest, including Government action on Intruder Watch reports, Harmful Interference, the publication of the new Australian Table of Frequency Allocations, the new Radio Communications Act, log-keeping, Phone patching.

A copy of the questions and the answers will be forwarded to the Editor and may appear in AR in due course.

A lively discussion with Mr. Jull brought out some very interesting points, one being that there are two backbench committees, one on each side of the House. The purpose of the Government committee is to bring to the notice of the Minister for Communications such matters which it deems necessary. The committee acts in an advisory capacity to the Minister and as a gauge of public opinion. Another point worth bearing in mind is that members of Parliament do take a lot of heed when constituents write letters, especially when they are bombarded by letters.

The Queensland Division is indeed fortunate in having such a good friend as the Honorable Member for Bowman (a Queensland electorate) and we extend our most sincere thanks for the friendly way in which he gives us some of his valuable time each year. Our thanks also go to Mr. Jull for his efforts on our behalf at other times.

A very large amount of work went into making the 1982 Radio Club Workshop such an outstanding success; many people were involved to a greater or lesser extent and they know how much their efforts are appreciated. One name must be mentioned, a lady who put all she had into our Workshop and thoroughly earned a special mention, Anne Minter VK4NRA. Thanks, Annie. ■

AM's Demise

from "DX Post", Feb. '82

AM broadcasting stations are going down hill rapidly with their financial status in the US of A. This fact can be gained by looking at statistics. A good example is KPOI-AM and its KDUK-FM affiliate. The FM station out billed the AM \$86,000 to \$30,000 in the last financial year. Indeed, the manager of Broadcast Services in Hawaii has strongly suggested that his AM only clients get an FM affiliate else they will most likely go out the door backwards.

The reasons for AM radio finding itself in so much trouble are mainly: FM, its competitor, can provide a clear, crisp stereo sound whereas AM is cramped to 8 kHz and is subject to parasitics. FM is taking out the top ratings in the major markets and leaving the talk shows for AM. AM operators have a new weapon in the battle to cut overheads and that is the communications satellite. Networks from satellite fed programmes are springing up all over.

A recent operator to take the satellite way out has been KCNL in Homer, Alaska. Peninsula Communications, the operator of KCNL-AM and KGTL-FM are feeding the FM operation with computer controlled "beautiful music" tapes. The AM operation is fed by the Christian Broadcasting Networks (CBN) "Continental Radio" from Virginia Beach, Virginia over SATCOM III. CBN's Continental Radio is a total package of 24 hours a day, news, weather and adult contemporary music with a Christian flavour. No programme director or announcer need be at the local station and only a technician is needed to load the cartridge machines with local id's and commercial spots. The master control at Continental Radio sends out a 25 Hz pulse over the satellite to start the cartridge machine when a local id is required. If there is no cartridge in the machine, music goes out anyway so there is no break in the programming. This system cuts down markedly on overheads (also puts programme managers and announcers out of work). Time checks over the Continental Radio network aren't that good. They announce "xx minutes after the hour" or "xx minutes before the hour" the actual hour is not given! Is this any way to run a radio station? Some operators obviously think so. The AM stations will no doubt lose out even more due to non-localisation and lack of listeners.

Should you think all of the above is applicable only to the USA then you are mistaken. Latest Australian statistics given out by the Broadcasting Tribunal show that AM operators here are losing in a big way, too. Last year fourteen metropolitan stations and twenty-two country stations reported losses.

Third Party Traffic

The following procedures are recommended by Council as forming a suitable basis for amateurs wishing to participate in third party traffic handling nets whether established on a regular basis or for specific emergencies.

1. These procedures apply only up to the stage of an emergency being declared and do not involve official WICEN organisation.
2. Messages to be handled should be of a compassionate nature, e.g. reports of hospitalisation, funerals, deaths, births, etc. Individual cases should be considered on their merits at the time.
3. The originator of the message should be advised that messages are handled in good faith and that no guarantee of delivery can be made.
4. Transmission of commercial messages is strictly forbidden.

5. Clubs are encouraged to form a committee within the Club to prepare contingency plans for involvement.
6. Liaison with local police stations is essential, particularly when distressing messages are involved.
7. At an appropriate time the individual amateur or Club should advise necessary organisations of available facilities and capabilities.
8. Messages of a distressing nature, e.g. notification of death, should be authenticated if possible by the originating station.
9. Stations participating in third party traffic handling should at all times operate within the terms of their licences and adhere to DOC regulations.

From QTC VK4 AR insert, February, 1982. ■



EDUCATION NOTES

Brenda Edmonds VK3KT
56 Baden Powell Drive, Frankston 3199



ALARA

AUSTRALIAN LADIES' AMATEUR
ASSOCIATION

Margaret Loft VK3DML
28 Lawrence Street, Castlemaine 3450

BOOKS

This month I would like to comment on books for use by intending examinees.

There are several books of sample questions. These are a useful resource if used simply as a question bank, but cannot be considered as textbooks unless there are good explanations of the answers.

Two new books have appeared recently.

INTO ELECTRONICS

Into Electronics, produced by the VK2 Division of the WIA, is a revised version of the old YRS notes. It is a well prepared and laid out publication with clear diagrams, simple explanations and an easy-to-read text. The main emphasis is on Electronics rather than radio, though, so it cannot be considered a full novice text. Of 19 chapters (about 90 pages), all is "basics" except the three chapter (18 pages) devoted to Receivers, Propagation and Test Equipment. There are no chapters on Power Supplies, Transmitters, Modulation or Interference. If these topics are included in a future Part 2, it will provide an ideal starting text for intending novices. I would also like to see included an index, some safety notes, a little on vacuum tubes and some multi-choice questions.

THE NOVICE OPERATORS THEORY HANDBOOK

The Novice Operators Theory Handbook, recently produced by Graeme Scott and Sandy Bruce-Smith, should have wide application as a text, both for classes and for students working on their own. It has been written specifically for the novice syllabus, and adheres closely to it, both in organisation and degree of depth — although in a few places it includes material above novice level. It is liberally, perhaps over-supplied with diagrams, to the extent where the thread of the text may be lost while finding the relevant diagram, but on the whole it is easy to read and the explanations are good, as is the artwork. The sample questions seem well written and appropriate.

One disadvantage is that, in keeping the book small, the pages have become crowded and the print small — not a recommendation to the more elderly novice who would appreciate larger print.

Again I would like to see the next edition with a reference index and some safety notes — perhaps instead of the large section on circuit symbols. On the whole this book should fill a long felt gap.

RSGB RADIO AMATEURS EXAMINATION MANUAL

A new edition of the RSGB Radio Amateurs' Examination Manual, by G. L. Benbow, makes it more useful for Aus-

tralian conditions by the inclusion of multi-choice questions. Most sections have been expanded slightly, and some new diagrams added. It is above our novice level — almost to AOCPP standard, but as with most RSGB publications the presentation is of a high standard, with clear explanations, easy to follow diagrams and chapter headings on each page. However, there is still no index, vacuum tubes have disappeared, and the terms "skip zone" and "skip distance" are used as interchangeable. The appendix sections on syllabus and objectives will be of interest to class leaders and those on operating procedures and tackling the exam should be read by all students.

Overall it is a very useful book for someone intending to go on to a full licence after achieving novice standard.

RADIO AMATEURS EXAMINATION REVISION NOTES

Another RSGB publication which I have found valuable is the Radio Amateurs Examination Revision Notes — again by G. L. Benbow. This is a pocket sized publication crammed with vital information — the sort of thing you would get if you summarised the class notes down to a minimum. It is ideal for carrying for spare time study or general reference — but I have not seen it on sale for years. If you see it, grab it — and please let me know where you found it.

THE HAM EXAM CRAM BOOK

The Ham Exam Cram book, by I. Botha and K. Howard of Westlakes Club, is an attempt to produce a similar product for the Australian AOCPP, but will also be of some interest to novice students who are aware of the limitations of the novice syllabus. It has very little on the Basics and little on Interference, but has good diagrams and does explain the answers to the questions which are grouped according to topic.

MORSE TAPE

Now for the final commercial: A reminder that I now have available from DOC ten past Morse exams at each speed, 5 and 10 w.p.m. Send me a C60 tape and I can copy what you wish onto it — 5 exams fills 30 minutes.

THEORY TRIALS

There are now two novice and one AOCPP trial theory exams available, and three Regulations papers available from the Executive office. I hope to have another AOCPP theory paper ready early in July for the August exam. I would be pleased to hear from anyone who has used any of these papers if you would like to comment. Let me know if there is any other way I can help. ■



ALARA

AUSTRALIAN LADIES' AMATEUR
ASSOCIATION

Margaret Loft VK3DML
28 Lawrence Street, Castlemaine 3450

ALARA CONTEST

Hello to all again. The new rules for ALARA Contest have now been finalised and will be distributed to magazines for publication so watch Contest columns.

CONGRATS, JOY

Congratulations to Joy VK2VJV, who passed the AOLCP. Joy is now awaiting a "K" call.

NEW MEMBERS

Welcome to new members: Charlene VK1NEJ, youngest member and only VK1, Lesley VK4ZN, Barbara VK3PCI, Susan VK2PLG, Christine VK4VIT, Judith VK5NNW, Wendy VK2YQK/VKD, Margaret VK2DQG. Sponsored: Diana VY1DV, Sharlot 5Z4CM.

ALARA AWARD

Mavis VK3KS is being kept busy with the ALARA Award applications, but please remember to sign your application and get two licensed amateurs to verify your log. 50 certificates were issued under old rules, 7 under new rules, plus 27 additional stickers.

A very special thank you to Valda VK3DVT, our Treasurer and a talented artist, who designed the contest certificate. Those who have receive one will agree with me they are well worth winning. So why not participate in our contest number 2 on 13th November, 1982, and see if you can receive one next year.

MEETINGS AND NETS

Remember the ALARA meetings on air on the fourth Monday of each month on 3.570 ± QRM at 1030Z. ALARA nets on same frequency and time each Monday.

HOLIDAY TIME

Hope all who have had holidays enjoyed themselves. Geraldine VK2NQL and family planned a caravan trip to Queensland in May, and my family are off to Lakes Entrance then up the coast of NSW for a couple of weeks. Really looking forward to a break. Next report will be written en route.

Until next month, good luck, DX and keep happy.

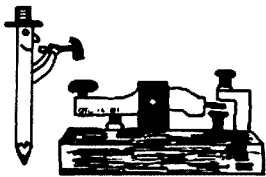
33/73/88. Margaret VK3DML. ■

GREMLINS LOOSE

Unfortunately the gremlins caused a misprint in "System Loss and Antenna SWR" in April AR, page 24.

The second line in the simplified step-by-step calculation should read:—

$$\sqrt{(2)^2} \times \sqrt{(3)^2}$$



Slow Morse Broadcasts

Marshall Emm VK2DXP
PO Box 362, Goulburn, NSW 2580

Tune in to 3.550 MHz at 0930Z any evening and you will hear a Morse Code practice session under the aegis of VK2BWI, conducted by a volunteer member of the VK2 Slow Morse Team.

It is something that is universally acknowledged to be of great benefit to anyone learning Morse Code, yet most amateurs take it for granted.

If you ever stop to think about it, there must be more to it than meets eye (or ear).

RESPONSE NEEDED!!

As the newly appointed Slow Morse Supervisor for the VK2 Division, two problems immediately confront me — what sort of broadcast is of most benefit to the listener, and what can be done to get more people involved in the effort? Your response to this article will go a long way toward solving those problems.

PRACTICE SESSIONS

In consideration of the format and content of broadcasts, it must be stated up front that the purpose of the broadcast is to provide USEFUL PRACTICE TO EXAMINATION CANDIDATES. Where time permits, broadcast operators are free to provide practice at higher speeds for those who wish to improve their copying ability, but that is the basic principle behind sponsorship of the broadcasts by the WIA Education Service. Providing "useful practice", though, is not as simple as it may seem at first glance. There are two examinations, at 5 and 10 w.p.m., so practice must be given at speed ranges from 3-4 w.p.m. (beginners) to 12 w.p.m. (full call candidates). Punctuation and numbers are included in the examinations, so they must be included in the practice sessions. So the basic format of a practice session is simply this — letters, numbers, and punctuation at speeds ranging from 3-4 w.p.m. to 12 w.p.m.

COMMENTS PLEASE

And now we get back to one of the basic reasons for this article. A team member can only gauge the success or otherwise of his efforts by means of feedback from the listener. Call-backs are taken after each

session, but they come from licensed amateurs only, who have generally listened to the last, faster portion of the broadcast. Therefore I would like to take this opportunity to invite written comments from ALL listeners. A questionnaire is provided at the end of this article for those who have opinions in the areas surveyed, and we would like to see as many responses as possible, so we can either (a) applaud ourselves for doing the right thing, or (b) try to improve things for the listener. Hopefully both! And please bear in mind that we are soliciting the opinions of all listeners, licensed or not, regardless of whether they are located in VK2 or not.

WE NEED VOLUNTEERS

This has been stated with monotonous regularity ever since the first broadcast. If you are a licensed amateur, why can't you help? Aside from the satisfaction of participating in a team effort, conducting the practice sessions is an invaluable contribution to the education of prospective novices and full calls, and it is also good practice (a lot of regular CW users could use some sending practice!).

BRASS POUNDERS

Not much is required, really. You don't have to have a full licence. You don't have to be able to copy Morse at 12 w.p.m. in order to be able to send it. You can use a straight key, a keyer, a computer, or any other device which makes the job easier (as long as it's legal). You can send any sort of material you like (bearing in mind copyright, as well as legality and good taste). You can pound brass for an hour, or break it up with SSB read-backs.

Most of the current team members conduct a regular session on the same night each week, but there is an urgent need for relief operators, some of whom, if they are willing, will eventually become full time regular operators. You can't expect any amateur to give an hour each week forever, and if there are enough casual operators around, it shouldn't be necessary. Even if you would be willing or able to do only (say) one session per month, please let us hear from you.

You will not be "dropped into it". Any team member, including myself, will be more than happy to give any possible advice and assistance. If you respond in the affirmative to Question 7 on the questionnaire, I will send you a sample broadcast format, and we can take it from there.

THANKS

Finally, on behalf of the VK2 team and, I am sure, team members in the other Divisions, our thanks to those who call back with their invaluable comments and expressions of support. To all the other listeners — let us know you're out there!

SLOW MORSE QUESTIONNAIRE

Please complete and return to Marshall Emm VK2DXP, PO Box 362, Goulburn, NSW 2580.

- I find the most useful material is:
 - plain text
 - letter groups
 - number groups
 - mixed letter and number groups
 - combination of the preceding types
 - other.....
- I am currently most interested in Morse sent at speeds of:
 - 3-4 w.p.m.
 - 5-8 w.p.m.
 - 10-12 w.p.m.
 - other.....
- I am a:
 - prospective novice
 - prospective full call
 - full call
 - other.....
- I feel that:
 - all sessions should be in the same format
 - different formats are better.
- I believe that Morse text should be read back on phone:
 - Yes
 - No.
- Any other comments:
- I might be able to help by conducting the odd session, if adequate training and support are given:
 - Yes
 - No.

NAME

ADDRESS

CALL (if any)

TELEPHONE.....

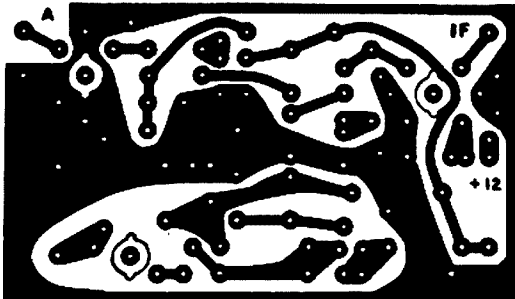
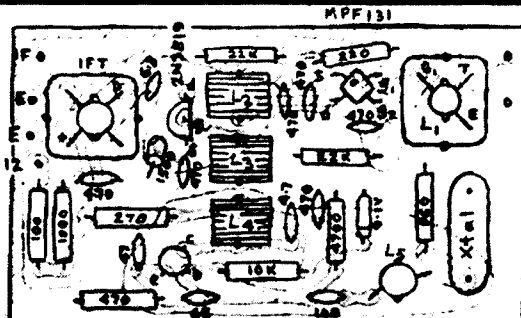


FIG. 1: PCB Artwork.



2N3563 FIG. 2: Component Placement.

The gremlins also attacked the camera.

In reproducing the circuit boards in 2 Metre Converter, page 14, May AR, they were increased 20%.

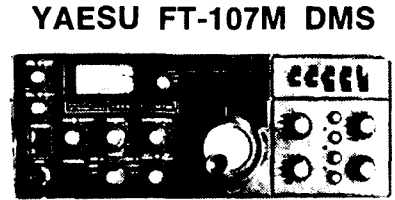
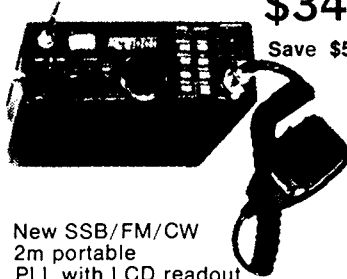
This is as they should have been — full size.

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- ☆ FT-208R \$298
- ☆ FT-480R \$489
- ☆ FT-680R \$489
- ☆ FT-690 \$319
- ☆ FRG-7700SW \$469



ALL MODE COMMUNICATIONS RECEIVER
YAESU FRG-7700 "SW"

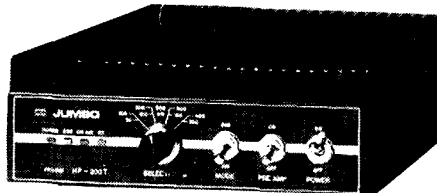


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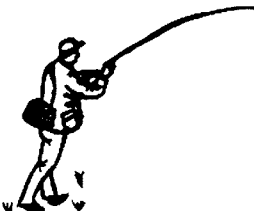
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W0613



CONTESTS



Reg Dwyer VK1BR

P.O. Box 236, Jamison, ACT 2614

CONTEST CALENDAR

June		
12-13	ARRL VHF	CQ
12-13	SOUTH AMERICA CW	CQ
18-20	SMIRK QSO PARTY	CQ
19-20	ALL ASIA DX	AR (June)
26-27	ARRL FIELD DAY	CQ

July		
3-4	VENEZUELA PHONE	CQ
17-18	INTERNATIONAL QRP	CQ
24-25	VENEZUELA CW	CQ

August		
7-8	EUROPEAN CW	CQ
14-15	SARTG RTTY	CQ
21-22	ALL ASIAN CW	AR (June)
	CLYDE VALLEY DX	(DX Column May)

THE 23rd ALL ASIAN DX CONTEST

The purpose of this contest is to enhance the activity of radio amateurs in Asia and to establish as many contacts as possible during the contest periods between Asian and Non-Asian Stations.

Contest Period

- (1) Phone: 48 hours from 0000 UTC June 19, 1982, to 2400 UTC June 20, 1982.
- (2) CW: 48 hours from 0000 UTC August 28, 1982, to 2400 UTC August 29, 1982.

Bands

Amateur bands under 30 MHz.

Entry Classifications

- (1) Single operator, 1.9 MHz band (CW only).
- (2) Single operator, 3.5 MHz band.
- (3) Single operator, 7 MHz band.
- (4) Single operator, 14 MHz band.
- (5) Single operator, 21 MHz band.
- (6) Single operator, 28 MHz band.
- (7) Single operator, Multi-band.
- (8) Multi-operator, Multi-band.

Power, Type of Emission and Frequencies Within the limits of own station licence.

Contest Call

- (1) For Asian stations:—
 - (a) Phone — "CQ contest".
 - (b) CW — "CQ test".
- (2) For non-Asian stations:—
 - (a) Phone — "CQ Asia".
 - (b) CW — "CQ AA".

Exchange

- (1) For OM stations: RS(T) report plus two figures denoting operator's age.
- (2) For YL stations: RS(T) report plus two figures "00 (zero zero)".

Restrictions on the Contest

- (1) No cross band contest.
- (2) For participants of single operator's entry: Transmitting two signals or more at the same time, including cases of different bands, is not permitted.
- (3) For participants of multi-operator's entry: Transmitting two signals or more at the same time within the same band, except in case of different bands, is not permitted.

Point and Multiplier

(1) For non-Asian stations:—

- (a) Point — Perfect contact with Asian stations (excluding US auxiliary military radio stations in the Far East, Japan: KA stations) will be counted as follows:—
 - 1.9 MHz band: 3 points.
 - 3.5/3.8 MHz bands: 2 points.
 - Other bands: 1 point.

(b) Multiplier — The number of different Asian prefixes worked on each band. According to the WPX rules.

(2) JD1 station:—

- (a) JD1 stations on Ogasawara (Bonin and Volcano) Islands belong to Asia.
- (b) JD1 stations on Minamitori Shima (Marcus) Island belong to Oceania.

(4) Contacts among Asian stations and among non-Asian stations will neither counts as a point nor multiplier.

Scoring

(The sum of the contact points on each band.)

(The sum of the multipliers on each band.)

Awards

- (1) For both Phone and CW, certificates will be awarded to those having the highest score in each entry in proportion to the number of participants from each country.
- (2) The highest scorer in each Continent of the single operator multi-band entry will receive a medal and certificate from the Minister of Posts and Telecommunications of Japan.
- (3) The highest scorer of the multi-operator multi-band entry in each Continent will receive a medal.

Reporting

- (1) Submit a summary sheet and logs of only one classification.
- (2) Both log and summary sheet must arrive in JARL, PO Box 377, Tokyo Central, Japan, on or before the following dates:—
 - (a) Phone — September 30, 1982.
 - (b) CW — November 30, 1982.

Disqualification

- (1) Violation of the contest rules.
- (2) False statement in the report.
- (3) Taking points from duplicate contact on the same band in excess of 2 per cent of the total.

Announcement of the Results

- (1) Phone — About February, 1983.
- (2) CW — About April, 1983.

You may have contest results by enclosing one IRC and SAE with your log. ■

ALARA'S FIRST CONTEST RESULTS

VK2PFH	42	VK4VCE*	43
VK2AKE	51	VK4-L40018*	90
VK2KDX	80	VK5CA	20

VK2NQI	83	VK5ANW	38
VK2DXH	91	VK5QO*	162
VK2NYL	99	VK6YL	25
VK2SU*	150	VK6QM	36
VK2DYL†	313	VK6JS	42
VK3DMS	3	VK6YF	43
VK3DJN*	17	VK6WT/YF	59
VK3DML	44	VK6NYL	88
VK3DVT	69	VK6KYL*‡	175
VK3KS*	406	VK7NPR	4
VK3XB*	308	VK7HD	112

DX

ZL2AZY	96	VE3DNV	7
ZL2QY*	121	VE3ARG	38
ZL3RK*	124	VE6AUP	53
ZL1BIZ*	146	VE7CBK*	103
P29NSF*	159	DF2SL	46
G4EZI*	81	DJ1TE	84
N6ARR*	40	DJ0EK*	87
WA2NFY*	50	DJ2YL*	210
WB3CQN	163	PA3AWI	13
WB7QOM	287	PA0HIL	17
WA3HUP*	297	PA3ADR*	43
VY1DV	13		

* Denotes certificate winner.

† Club station.

‡ Also top score VK novice.

JOHN MOYLE CONTEST

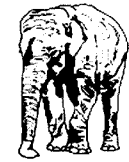
Unfortunately the logs of the Geelong Amateur Radio Club arrived at my address well after the copy for May AR had been sent for publication, mainly because of its route through Orange and then to Canberra.

This is a great pity, as the score gained by the Club was a tremendous effort and is well worth commendation.

Because the certificates have already been sent and the results recorded it is impossible to award this Club with a place. However, they will receive a certificate for excellent performance for the very good score rate they achieved.

Best of luck. ■

REMEMBER



CALL BOOK DATA

The Editor is aware that there are still a small number of errors, duplications and omissions as well as uncorrected addresses in the current edition.

The data in the Call Book is only as accurate and complete as the information supplied to the Institute.

PLEASE tell us about any errors, etc., and please tell your amateur friends to tell us too. Write to —

WIA

Box 150, Toorak, Vic. 3142

DXCC NEWS FIRST!!

VS9K has been deleted from the countries list by the ARRL. Any future operation from the islands would count as the Republic of Yemen (701). This deletion will apply to our DXCC listings and amended totals will be shown in the top DXCC tallies, published in September AR. The current number of countries now on the list stands at 318.



Mike Bazeley VK6HD
8 James Road, Kalamunda, WA 6076

OPEN	VK5SO	207	253
	VK3NUN	208	130

DXCC AMENDMENTS

PHONE	Call Sign	Tally	Call Sign	Tally
	VK2AHH	273/296	VK3NSR	219/220
	VK2BQS	120	VK4VC	308/319
	VK2NHV	169/170	VK5LC	255/266

VK2VFT	183/184	VK5WO	267/285
VK3ALM	256/262	VK6AJW	251
VK3AOT	211	VK6HO	304/311
VK3DFD	260/261	VK6NE	299/306
VK3DU	247		

CW	Call Sign	Tally	Call Sign	Tally
	VK2AHH	135/150	VK3JI	220/241
	VK2QL	311/350	VK5ARA	113
	VK3AKK	135	VK6HD	261/267

OPEN	Call Sign	Tally	Call Sign	Tally
	VK2AAC	168/171	VK5ARA	185
	VK2AHH	282/308	VK5WO	294/317
	VK3JI	268/293	VK6HD	311/324

RTTY	Call Sign	Tally
	VK2SG	123/124

NEW AWARD

Mavis VK3KS has forwarded requirements for the Australian Ladies' Amateur Radio Association (ALARA) Award. This award is available to all licensed amateurs and SWLs.

RULES

(Starting date 1st January, 1982)

XZ5A AND XZ9A

At present no credit is being allowed for contacts with these two stations. This operation is not recognised by the "lawful" government of Burma and therefore these operators could be classified as pirates. If we accept this operation we should also accept any operation by anyone operating in our amateur bands, using a VK call, provided they were located in Australia. The fact that XZ5A and XZ9A are DX and nearly everyone needs a genuine Burma QSL (myself included) does not legitimise the situation.

RE-APPRAISALS NEEDED?

Let's be honest, the present DXCC countries list is in a mess. How can one justify buildings as countries? 4U1UN, 4U1ITU and IA0KM—pieces of rock jutting out of the ocean. KS4 Serrana Bank, KP6 Kingman Reef, VK9 Mellish Reef, or the same location counting as two countries, depending on the call sign in use? T31 or KH1. I do not suggest that I have the answers though I do believe the time has come for a re-appraisal of the situation.

AWARDS ISSUED

Awards issued and amendments made during the period 1st January, 1982, to 31st March, 1982, are listed below.

WAVKCA AWARD

Call Sign	Cert. No.	Call Sign	Cert. No.
JH2UZR	1023	ISHOR	1030
VS5JM	1024	ZL4JN	1031
PA0BDO	1025	G13YDH	1032
DJ6MA	1026	JH6XJW	1033
A4XIU	1027	VK2PY	1034
VK6YF	1028	JH1EDB	1035
WB4SXX	1029		

DXCC NEW MEMBERS

PHONE	Call Sign	Cert. No.	Tally
	VK4VBK	285	106
	VK3VSL	286	107
	VK4VIC	287	101
	VK3JI	288	249/260

CW	Call Sign	Tally
	VK5DL	119 100

ALARA AWARD

THE AUSTRALIAN LADIES AMATEUR RADIO ASSOCIATION

is pleased to certify that

Sample

has submitted satisfactory evidence of having conducted two-way communications with members of ALARA in accordance with the rules of the awards committee.

Award Custodian: _____ President: _____

For VK/ZL: 10 members to be contacted and to include 5 Australian States.

For DX: 5 members to be contacted and to include 4 Australian States.

All contacts to have been made with members on or after 30th June, 1975. No 2 metre repeater contacts will be allowed.

Applicants must submit a complete extract of log entries, which is to be certified correct by two other amateurs whose signatures must be appended. In the event of an applicant in an isolated location being unable to obtain certification, QSL cards should be forwarded in lieu.

Application must include full name, address, signature and call sign of the applicant.

All contacts must be made from the same call area.

Special endorsements available, e.g., Mixed, All CW, All Phone, All 28 MHz, etc.

Endorsement stickers available for each 10 additional members contacted. For DX applicants, 5 additional.

FEE

Application should be accompanied by the equivalent of 3 Australian dollars or 7 IRCs. Fee for additional stickers, 1 Australian dollar.

APPLICATIONS SHOULD BE FORWARDED TO

ALARA Awards Manager,
Mavis Stafford VK3KS,
16 Byron Street,
Box Hill South,
Victoria 3128, Australia.

* * * *

AMENDMENT TO "A NEW TOWER DESIGN" March '82, page 12

Since drawing up his tower design article over 12 months ago, John has made some modifications which he feels are an improvement.

John has changed the tower leg base from 1/2 in. to 1 1/4 in. pipe.

John has also changed his identification to VK6NJV/ZVZ from L60052 and many will recognise him better by his call sign rather than his SWL call, as he has had well over 6,000 QSOs.

We also had a misprint in the article. VK6LY, photographer, should read VK6IY.

* * * *

STOLEN EQUIPMENT

Vicom would like to advise readers of this magazine that items bearing the serial numbers shown below were stolen from Vicom's premises in April. Readers are warned against purchasing this equipment and in the event that such equipment is offered to them for sale should contact Vicom or the Police.

Icom IC-290A, Serial No. 14101468.
Icom IC-730, Serial No. 13803754.
Icom IC-2B4, Serial No. 13701101.
Icom IC-BP2, Battery Pack.
Icom IC-4E, Serial No. 15701304.

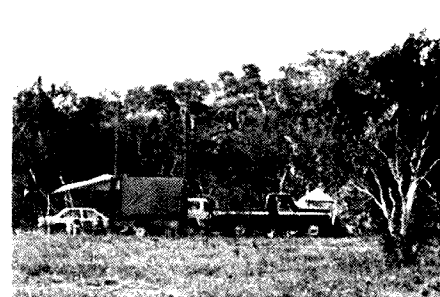
John Moyle Field Day

Mount Isa and Districts Amateur Radio Group were out and about during the recent "John Moyle Memorial Field Day Contest".



Operational Sight

They were located at Spring Creek, N.W. Queensland and were operational on the 160, 80, 40, 20, 15, 10 and 2m bands.



Working Conditions

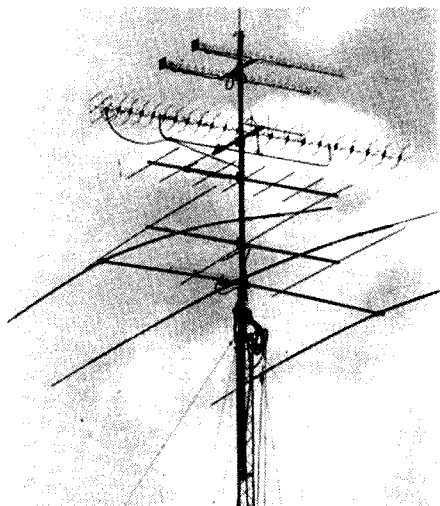
Interesting VHF DX

On 25th January 1982 at 0820 UTC Richard VK2BDN received a telephone call from New Zealand stating that the band was open on 2 metres. Richard promptly fired up on 432 MHz and contacted ZL2VT. The QSO lasted for over one hour with ZL1TGB, ZL2TAL and ZL2THG joining in with signals peaking to S8. 1296 MHz was also tried but with no success.

Openings of this type may be a regular occurrence as two years previously similar openings occurred.

On 8th February 1982 a similar opening occurred with 5x9 signals lasting for several hours, and again on the 9th when Richard contacted Brian ZL1AVZ and as conditions were so good it was suggested to try 1296 MHz. At 2045 UTC contact was made, Brian using CW and SSB was receiving R5 S3 whilst Richard copied Brian R5 S2. Signals held up for approximately 20 minutes.

This contact over 2134 km (1326 miles) was made more remarkable since Brian was using only 5 watts on CW and 1.3 watts on SSB while Richard was using 35 watts.

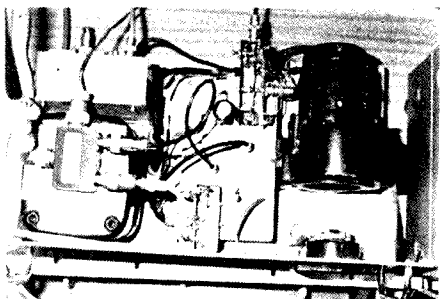


Dick's antenna array with two 1296 loop yagis near the top.

Brian was using a Microwave Module transverter and a 4 metre dish and Richard had a home brew transmitter using a 2C39 mixer driving a 2C39 amplifier with Microwave Module pre-amplifier receiver and two 27 element loop yagis.



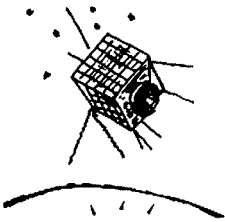
Dick VK2BDN at his 1296 operating position.



Transmitter using 2C39 mixer driving 2C39 amplifier.

AMSAT AUSTRALIA

Bob Arnold VK3ZBB
41 Grammar Street, Strathmore 3041



CO-ORDINATOR

CHAS ROBINSON VK3ACR.

AR NOTES

BOB ARNOLD VK3ZBB.

CORRESPONDENTS

VK3KW, VK3YCCQ, VK5HI, VK5AGR.

ACKNOWLEDGEMENTS

ASR (AMSAT Report).

INFORMATION NETS

AMSAT AUSTRALIA

Control: VK3ACR.

1000Z Sunday and Wednesday, 3.680 MHz* (7.064 MHz in summer).

AMSAT PACIFIC

Control: JA1ANG.

1100Z Sunday, 14.305 MHz.

AMSAT SW PACIFIC

Control: W6CG.

2200Z Saturday, 28.880 MHz.

FREQUENCIES

*It is frequently difficult, during spring and autumn, to find a frequency which will give Australia-wide coverage from Melbourne. It is suggested that listeners try both frequencies nominated above.

PHASE IIIA

As reported last month the launch of Phase IIIA by ESA, the European Space Agency, has been delayed for a minimum of two months. Surprisingly this is not due to the Ariane launch vehicle but to problems which have arisen with the main payload. An investigation is under way into the design of the MARECS series and similar satellites, but meanwhile some confusion exists on launch dates for several satellites.

MORE CONFUSION

ASR reports that RCA will shortly discontinue the manufacture of the 807 and other veteran valves.

The only hospitality I can offer in future will be a mundane MRF 747 or similar fruit juice!

THE FUTURE

Some months ago I philosophized on the future role of amateur satellites and in particular the growing number of persons without a radio background who have become interested in our segment of the hobby. In fact, it has since been suggested to me that there are more non-amateur satellite enthusiasts in this country than amateurs themselves.

This subject was referred to in AMSAT Satellite Report No. 29 and subsequently at the April meeting of AMSAT Directors.

I quote from ASR following references to future launch opportunities: "It may be time to consider aligning ourselves with a broader community of amateurs in space. Not 'radio' amateurs but folks like the World Space Foundation (Solar Sail), the Independent Space Research Group

(Amateur Space Telescope) and others. Should AMSAT assume a leadership role in the broader context of amateurs 'in space'? And if we don't move forward with inspired, constructive use of launch opportunities will somebody else displace us? Does it come down to, lead or be led (at your own peril)?"

The outcome of the Board of Directors discussion on this item was (a) to pursue a liaison with a university engineering department for the purpose of co-operative effort and (b) to pursue with vigor, co-operation with the Independent Space Research Group (ASR No. 30).

FUTURE LAUNCH SLOTS

Options afforded by two major launch opportunities to follow Phase IIIB have been under discussion.

In the first case an AMSAT payload would displace a US Government simulator of some 500 kg in mass. One can imagine the wide array of experiments which could be included in such a payload but at a cost and effort which must be shared by all enthusiasts.

The second possibility could be the payload aboard the next generation Ariane 4 launch vehicle. This could provide a payload of up to 4,000 kg. Both possibilities provide for geosynchronous launch and to serve all the world's amateur population a so-called geosynchronous drifter may provide an acceptable solution. (It should be borne in mind that a geosynchronous satellite will look at only one-third of the earth's surface and most of the satellite fraternity are either side the Atlantic Ocean.) The drifter would always give an "out of sight" period twice as long as the "in sight" period and would certainly be a boon to amateurs on the "wrong side" of the earth.

1983 and 1984 are not far away so there should be some more news in the near future.

SATELLITE STATUS REPORT

AMSAT OSCAR 8 continues to operate satisfactorily on both Modes A and J. There is a tendency for the battery temperature to increase to a dangerous level but in recent weeks the temperature has stabilised around 40°C — this is just OK. The RS series perform faultlessly and we still await for some further project to emerge from one or more of the six satellites.

At the time of writing there is disturbing news of UOSAT OSCAR 9. It is understood that, during the Easter period, a new command was sent to UO9 which permitted the simultaneous operation of the beacons on 144.825 and 435.025 MHz. These beacon signals caused the command receiver to be desensitized, thus blocking further command signals to the satellite.

On 22nd April and subsequent days very high power signals, in the order of 1 mW ERP, were sent to UO9 but to date they have been of insufficient strength to activate the command receiver.

PHASE III COUNTDOWN

By courtesy of AMSAT Satellite Report here is the second of the Phase III Countdown Series.

Ariane Launcher

In this second of the Phase III Countdown series in ASR we will begin our detailed look at the various systems that will make the entire project work. Appropriately we begin our detailed view with the baseline for everything; the launch vehicle which will carry Phase IIIB to its lofty perch from which vantage the wonders fashioned by technicians around the world will become real.

In many ways Ariane is rather conventional as launch vehicles go. In fact the 11-nation consortium that comprises ESA, the European Space Agency, is counting on that conventionality to payoff. They believe that the lower risk, "standard" approach is to be preferred over any attempt at radical new technology as alluring as may be the potential benefits. For example, the Viking engines that power its first two stages are derivatives of the well-tested French Diamant rocket of the mid-sixties. That spells low risk. Now seeing the first three of four Arianes as successes, the path ahead for the operational launch appears bright indeed. In fact, the failure of other major programmes was, at times, much more dismal than is Ariane's now.

The main mission of Ariane is to carry about 1,700 kg (3,750 lbs.) to a geosynchronous transfer ellipse of 200 km x 36,000 km and 7° inclination from the launch site at Kourou, French Guiana. To do this, Ariane uses a three-stage liquid fuelled rocket.

Ariane's first stage engines are called the Viking 5. Clustered in the "four pack" they are called the L140 stage. The L140 is rated at 2,445 kN thrust at lift-off and at 2,745 kN in a vacuum. The specific impulse of the stage is 281.3 seconds. The fuel for the engines is UDMH or unsymmetrical di-methyl hydrazine. This liquid is combined with the oxidizer, nitrogen tetroxide in the combustion chamber at considerable pressure to produce the thrust. The two components do not require an ignition source as they explode on combination. The first stage engines burn for 145 seconds. For steering, each of the Viking 5 engines can be gimballed in pairs about two orthogonal axes to provide three-axis control.

The second stage consists of a single Viking 4 engine called a L33 stage. It uses the same fuel as the first stage. The L33 develops a thrust of 709 kN in a vacuum with a specific impulse of 293.5 seconds. The second stage burns for 132 seconds.

The third stage of Ariane is the first cryogenic stage developed in Europe. It caused considerable headaches and worry since it WAS a development item unlike most of the other hardware. It had a strong tendency to explode in ground tests. However the devils in the design seem to have been exorcised and the flight tests of the third stage have been good. What makes the third stage so tricky is the use of the combination of liquid oxygen (LOX) and liquid hydrogen. The HM-7 engine produces a thrust of 60 kN and has a specific impulse of 440 seconds.

The engines for all three stages are built by Aerospatiale/SEP with Air Liquide and MBB participants in the HM-7 cryogenic engine of the H8 third stage.

In all, the Ariane stands 47.4 metres (155.5 feet) tall and weighs 207 metric tonnes (455,400 lbs.). At lift-off 90 per cent of the weight is propellant (fuel and oxidizer). The structures account for 9 per cent and the payload a mere 1 per cent of take-off weight. The third stage diameter is 3.78 metres (12.4 feet) and the diameter of the second and third stage is 2.6 metres (8.5 feet).

The payload sits atop the entire arrangement covered by a fairing which protects the payload during the ascent. The interior

of the fairing is a roomy 3 metres in diameter by 5.3 metres high (9.8 x 17.4 feet), which is large enough for the largest satellites or two medium sized satellites to be accommodated. Phase IIIB will be carried aloft with another satellite in the Ariane double launch system called SYLDA. The fairing consists of two half shells that are jettisoned during the second stage burn when the launcher has reached about the 110 km altitude.

The launch site at Kourou is especially noteworthy because of its proximity to the equator. The site's latitude of 5.23°N allows it an advantage of using the added velocity of the earth's surface at the equator to add to the launch velocity of the Ariane. It's rather like an aircraft carrier turning into the wind to launch its aircraft, though this is a superficial analogy to be sure. In any case the low latitude affords Ariane a 17 per cent throw weight advantage over Cape Canaveral.

Ariane seems to be a launcher with a growing following. Since the successful completion of the fourth and final test launch, LO4, last year, three major US passengers have signed on for launches of their communications satellites. AMSAT's launch on L6 is presently scheduled for July 1982 after the May launch of L5. Let's all hope for a good ride!

Next time we'll look at another of the major systems that will make Phase IIIB the most exciting thing to happen in amateur radio.

A Call to all holders of a 'NOVICE LICENCE

Now you have joined the ranks of Amateur Radio, why not extend your activities?

THE WIRELESS INSTITUTE OF AUSTRALIA (N.S.W. DIVISION)

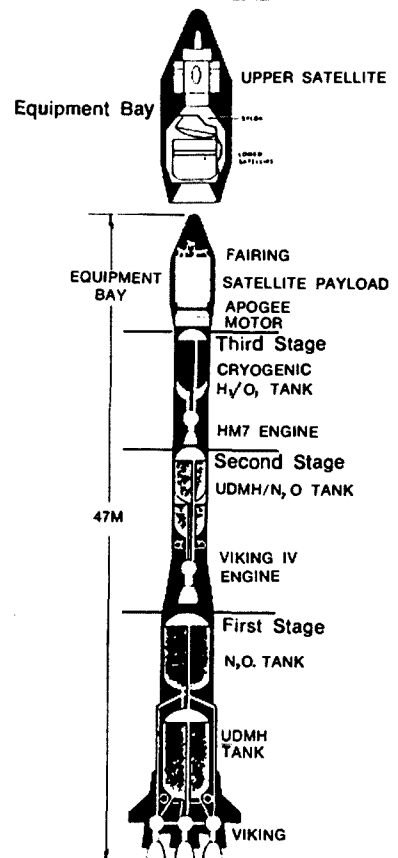
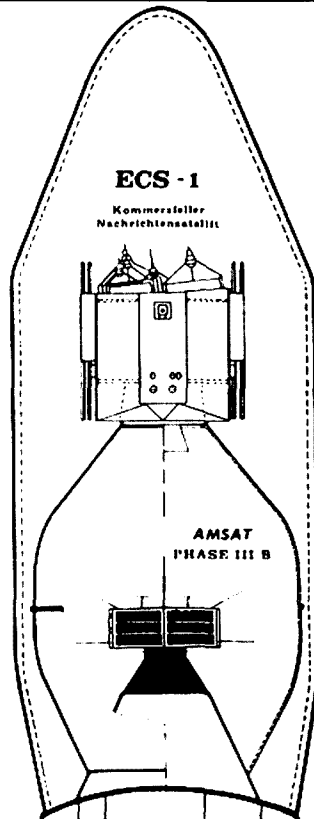
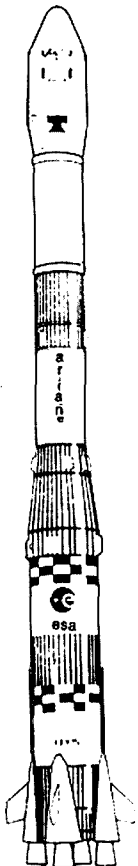
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For further details write to:
THE COURSE SUPERVISOR, W.I.A.

P.O. BOX 123,
ST. LEONARDS, N.S.W. 2065

WO614



CW				
JA1-3477	6,392	Y2-10280/E	644	
HE9EVI	2,420	Y2-6405/N	360	
JA6-9330	1,600	JA0-3235	228	
OK1-11861	1,184	DE5-SML	140	

CW SECTION

Call	Band	QSO's	Mult's	Points	Corr.	Total
EUROPE						
Y39XO	M	78	31	156		4,836
Y21YK	M	79	27	158		4,266
G3WPF	M	61	27	122		3,294
HB9IK	M	59	24	118		2,832
OK3ZAM	M	50	18	100		1,600
OZ4PM	M	41	21	82		1,722
OZ5EDR	M	40	20	80		1,600
SM0AJU	M	39	20	78		1,560
OZ2ILO	M	43	17	86		1,462
Y31XA	M	34	19	68		1,292
G5MY	M	39	16	78		1,248
SM6AYM	M	30	20	60		1,200
SM7ANB	M	31	16	62		992
DL1JF	M	30	16	60		960
SM5DAC	M	25	15	60		900
G3PVA	M	27	13	54		702
Y24EA	M	27	13	54		702
YU7NQG	M	27	12	54		648
OK2BUJ	M	31	9	62		558
I5YDI	M	22	10	44		440
Y54ZA	M	17	12	34		408
YU3TMF	M	18	10	36		360
ON4XG	M	16	10	32		320
SM5AHK	M	15	9	30		270
HB9AGH	M	15	9	30		270
HB9DX	M	15	8	30		240
OZ5KW	M	12	9	24		216
OH7NW	M	14	6	28		168
LZ2KKZ	M	12	7	24		168
DJ6OP	M	11	7	22		154
Y22WF	M	9	7	18		126
Y64YG	M	7	6	14		84
DL1TH	M	6	5	12		60
OH1PS	M	6	4	12		48
OZ2AE	M	4	4	8		32
YU7SF	M	4	3	8		24
Y23VB	M	3	3	6		18
Y31WC	M	2	2	4		8
OH2BCI	80	7	6	14		84
SP9HWN	40	2	1	4		4
YU7OCZ	20	25	8	50		400
I1XPQ	20	23	7	46		322
DL3DD	20	19	8	38		304
Y22UB	20	19	7	38		266
YU7NZR	20	10	7	20		140
EA2CR	20	11	5	22		110
OK2BJU	20	7	6	14		84
Y43ZK	20	9	3	18		54
SP9KLF	20	5	4	10		40
Y38ZB	20	3	1	6		6
LZ1IF	20	1	1	2		2
LZ1KBZ	20	1	1	2		2
SM0KV/0	15	30	9	60		540
LA4YW	15	1	1	2		2
OH2BAH	10	8	5	16		80
OZ1HXL	10	3	2	6		12
UK0FAI	MBMO	108	35	212		7,420
Y03KWJ	MBMO	22	14	44		616
SP7KTE	MBMO	22	11	44		484
YU6KOP	M020	13	7	26		182

CHECK LOGS: LA8CJ, OK1AD, OZ7BW, SP2EFU, SP2GOW, SP7AW, SP9EMI, Y23BF, Y33UE, Y47YM, Y67ZG.

JAPAN						
JH0BBA	M	112	40	224		8,960
JA0GJJ	M	107	36	214		7,704
JE1CKA	M	97	36	194		6,984
JA8EAT	M	93	33	186		6,138
JF2VDY	M	95	30	190		5,700
JH4IFF	M	82	34	164		5,576
JA4ESR	M	80	33	160		5,280
JA7GLB	M	82	32	164		5,248
JA2WB	M	92	28	184		5,152
JH3AIU	M	85	30	170		5,100
JA2PSV	M	82	26	164		4,264
JH9DCJ	M	67	30	134		4,020
JA7DOT	M	66	30	132		3,960
JA2DCN	M	74	25	148		3,700
JN1KEJ	M	71	26	142		3,688
JA2MYA	M	61	24	122		2,925
JA1SJV	M	50	22	100		2,200
JA9SQO	M	47	23	94		2,162
JA4BFL	M	51	21	102		2,142

JA3KMM	M	46	23	92		2,116
JE2IEQ	M	46	22	92		2,024
JH7WKQ	M	46	20	92		1,840
JA7BVA	M	42	20	84		1,680
JA2DN	M	40	21	80		1,680
JE3DYW	M	38	20	76		1,520
JA7UFZ	M	35	21	70		1,470
JA1OP	M	36	17	72		1,224
JH2XTV	M	32	18	64		1,152
JA4YFH	M	32	14	64		896
JA8SW	M	28	16	56		896
JR4CCG	M	29	14	58		812
JH5AUE	M	27	15	54		810
JA3ARM	M	26	11	52		572
JA3HTT	M	22	11	44		484
JA7YAL	M	17	10	34		340
JA6IP	M	15	11	30		330
JH1MTR	M	15	10	30		300
JR3XEX	M	11	9	22		198
JA7KM	M	11	7	22		154
JA8CAO	M	7	5	14		70
JA2EAB	M	4	4	8		32
JH6HKV	20	17	9	34		306
JA1UPO	20	8	5	16		80
JK1LUY	20	6	4	12		48
JG2LGM	15	7	6	14		84
JA0BMS/1	15	8	4	16		64
JA7RXU	15	2	2	4		8
JR6LJO	10	30	9	60		540
JA4AQR	10	14	8	28		224
JA2XH	10	11	7	22		154
JA1AAT	10	5	5	10		50

UNITED STATES OF AMERICA

W0KEA	M	141	44	282		12,396
W1EVT	M	127	43	252		10,793
A19J	M	112	36	224		8,064
W8UVZ	M	105	37	210		7,747
WB4RUA	M	80	33	160		5,280
K9PQG	M	78	33	156		5,148
N2LT	M	79	29	158		4,582
K9GM	M	73	28	146		4,088
W50B	M	61	28	122		3,416
K9AB	M	68	22	136		2,992
W6MYP	M	50	16	100		1,600
A16Z	M	40	20	80		1,600
W6NNV	M	48	15	96		1,440
W1END	M	40	16	80		1,280
K2LP	M	38	13	76		988
W3ARK	M	28	13	56		728
AA5EE	M	27	13	54		702
W3TV	M	20	12	40		480
W9QWM	M	22	10	44		440
N0CKC	M	15	8	30		240
WA0TKJ	10	20	7	40		280

CANADA

VO1AW	M	11	7	22		154
VE7BS	40	27	10	54		540

PANAMA

HP1AC	M	38	12	76		912
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COLUMBIA

K3ZO/HK3	M	34	13	68		884
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ARGENTINA

LU1EWL	M	5	4	10		40
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LATE LOGS

PHONE:

OK1KQJ	M	73	23	145		3,335
OK1AGN	M	38	19	76		1,444
OK1KZ	M	16	10	29		290
OK2YN	M	9	6	27		162
OK1ATE	14	44	11	85		935
OK1TN	21	62	8	121		968
OK1ARI	21	51	10	89		890
OK2PDE	21	12	5	24		120
OK2BJR	28	5	4	10		40

CW

OK1KQJ	M	68	25	136		3,400
OK1WT	M	68	23	130		2,990
OK1AGN	M	36	15	72		1,080
OK3KYR	M	36	14	70		980
OK1KZ	M	9	8	18		144
OK1TN	14	15	6	30		180
OK3IF	14	12	5	24		120
OK1ZY	14	7	5	12		70
OK1JDJ	14	5	3	10		30
OK1KRQ	14	4	3	8		4
OK1DRN	14	2	2	4		8
OK1AER	21	25	7	14		380
OK2SAT	21	18	5	32		160
OK2BMH	21	11	5	22		110
OK1MHA	21	1	1	2		2



TO BUILD OR NOT TO BUILD

The question to build or not to build continues to interest many amateurs and would-be amateurs. Most accept that the vast majority of non-professional constructors have virtually no hope of successfully cramming into a small enclosure the amount of electronic gubbins now provided in many of the factory-built black boxes. But some question whether all this digital circuitry — providing greater operating convenience but often adding little to basic communications performance — is really essential.

Homebrew enthusiasts all agree that home-construction should be encouraged. Some go further and claim that operating factory-built equipment is not experimental amateur radio at all. I feel this is taking the argument too far; my dividing line would be determined more by whether or not the operator understands how his equipment works and is genuinely interested in radio communication and propagation, etc. After all, you can, for instance, be a genuinely keen amateur photographer without actually constructing your own camera; but one would expect such a person, unlike the chap who is interested only in taking a few holiday snaps, to come in the fullness of time to understand a good deal about the basic techniques and chemical processes of photography, be interested in its historical development and keep abreast of current trends.

Similarly amateur astronomers contribute to useful scientific studies without necessarily building their own telescopes. So it seems to me that while home-construction has a very important role to play in experimental radio — because practical projects are surely the very best way of learning to understand the technology — it is not the only mark of genuine amateur radio.

(Pat Hawker in Technical Topics "RADCOM", March, '82)

WARNING!!



Disposing of your old rig??

Please ensure it goes ONLY to someone licensed to use it on YOUR bands.



VHF UHF - an expanding world

Eric Jamieson VK5LP
Quinns Road, Forrester, SA 5233

AMATEUR BANDS BEACONS

Freq.	Call Sign	Location
50.005	H44HIR	— Honiara
50.008	JA2IGY	— Mie
50.098	KH6EQI	— Pearl Harbour
51.022	ZL1UHF	— Auckland
52.013	P29SIX	— New Guinea
52.150	VK5KK	— Arthurton
52.160	VK0WW	— Macquarie Island
52.200	VK8VF	— Darwin
52.250	ZL2VHP	— Palmerston North
52.300	VK6RTV	— Perth
52.320	VK6RTT	— Carnarvon
52.330	VK3RGG	— Geelong *
52.350	VK6RTU	— Kalgoorlie
52.370	VK7RST	— Hobart
52.400	VK7RNT	— Launceston
52.420	VK2WI	— Sydney
52.425	VK2RGB	— Gunnedah
52.435	VK3RMV	— Hamilton
52.440	VK4RTL	— Townsville
52.510	ZL2MHF	— Mt. Climie
53.000	VK5VF	— Mount Lofty
144.400	VK4RTT	— Mt. Mowbullian
144.420	VK2WI	— Sydney
144.430	VK3RTG	— Temporary site †
144.475	VK1RTA	— Canberra
144.550	VK5RSE	— Mt. Gambier
144.600	VK6RTT	— Carnarvon
144.800	VK5VF	— Mt. Lofty
144.900	VK7RTX	— Ulverstone
145.000	VK6RTV	— Perth
147.400	VK2RCW	— Sydney
432.410	VK6RTT	— Carnarvon
432.440	VK4RBB	— Brisbane
432.450	VK3RMB	— Mt. Bunningyong

* Indicates the beacon is again operational.

† Indicates the beacon is again operational but from a temporary site whilst a permanent site is found.

As you can see, there has been quite a pruning of the beacon list this month, with those most likely to be heard being given preference. As the September equinox approaches with the possibility of extended distance contacts, the beacon list will be added in accordance with the usual practice.

I would appreciate someone writing to me with details of the VK3RMB 432.450 beacon listed as operating from Mt. Bunningyong. From my poor location here I cannot hear it. Is it in fact operating, and is it on 24 hours or on by request?

Incidentally, it appears the KH6EQI beacon shifts around a bit, and appears to be on 50.098 at present, this fact being confirmed by Gil VK3AUI.

THE EQUINOX AND SIX METRES

Gil VK3AUI gives a good round-up of activity from the Melbourne viewpoint and it seems that fair city has had a greater share of exotic DX than VK5, possibly due to shorter distances. Compare this with the VK5 report which follows and those of you in VK2 and VK4 sitting on plenty of in-

formation and contacts will have to look at your own log books!

MELBOURNE ACTIVITY

"3/3: Big JA opening for several hours, finishing around 1345Z. JA1, 2, 3, 4, 5, 6, 9, 6/3: 0841 to 0909Z JA1, 2, 3, 0, then JA7 at 1054Z. 7/3: 0127Z VK4ZJB. 21/3: Russian TV 49.750 at 0117Z, and again on 27/3 0035Z.

"3/4: 3D2JT heard at 0002Z to 0015Z with good signals on 50 MHz, but nothing heard on 52 MHz. 0321Z KH6IAA worked on 52.050. From 0816 to 1005Z JA2, 5, 9 and 0. H44PT at 2318Z same day (morning). 4/4: 0002Z Peter H44PT up to 40 dB over S9 most of the time and worked about every 6 metre station in Melbourne. H44HIR very strong on 50 MHz also. Backscatter very good at the same time, making VK3OT like a local in Melbourne. KG6JDX also worked. N6CT heard briefly on 50 MHz. 9/4: XE1GE heard on 50.087 5 x 9 between 2310 and 2315Z when he called and worked A35JT, no sign of latter in VK3. K6MYC heard weakly on 52.005 and not even a crossband contact the opening was so brief: 10/4: H44PT 5 x 9 on 50 MHz at 2212Z, but nothing on 52. H44HIR 599 at 2210Z. 12/4: XE1GE heard on 50.110 CW at 2310Z. FO8DR heard on 50.096 at 2311Z. A35JT heard with brief snatches of signal whilst he was into XE1GE and W5. 13/4: XE1GE heard, and copied VK3AQR on 52 MHz. 16/4: W7KMA heard 50.100 and 52.010 from 2349Z, working or attempting to work VK3AMH, VK3AQR and VK3OT, then W7KMA went on to work VK5 stations. 18/4: 0015 to 0047Z W6XJ working all and sundry. Gary worked many for their first W contact. VK3AZY, VK3BDL, VK3NM and VK3XQ were amongst the first-timers. During the afternoon around 0320Z a couple of JA openings. 19/4: KH6EQI 0145Z at 539, peaking 599 around 0200Z when Channel 0 came on. Receivable through Channel 0 until 0210Z. Small JA openings around 0300Z."

Thanks for writing, Gil, nice to know the Melbourne or VK3 boys have been able to share in some of the good contacts, one advantage of the long distance contacts coming early in the morning.

With the help of David VK5KK and Bob VK5ZRO and my own log we have been able to put together the following as to what happened in VK5 in the same period covered by Gil's letter. The comparisons are interesting.

VK5 HAPPENINGS

3/4: KB7IT/KH2 at 2350Z S4 caused a bit of a ripple until it was realised the station was Guam. VK5KK worked 3D2JT, KH6IAA, H44PT, and heard T32AB on 50.110 at S2 on CW at 0015Z. 4/4: N6CT 52.025 worked 2317Z SSB 5 x 5 both ways. Also worked H44PT, KG6JDX, VS5LH and many JAs from 0100 to 0800Z. Heard H44PT, KH6HI, 3D2JT, K6MYC, K6UZK, W6XJ and WA6JRA all on 50 MHz up to S9. Also worked W6XJ on 52.050. VK3OT heard on

backscatter. 5/4: JA 1230Z with JA1, 2, 3, but not strong. 10/4: 2304Z VK8GB; 2345Z VS5LH 52.090 5 x 3 to 5 x 9. 11/4: H44HIR 2200 to 0000Z, also H44PT. VS6BE 2250 to 0045Z beacon/keystroke on 50 MHz; VS6SIX 2310 to 0020Z to S3. JA2IGY also noted. A35JT 50.103 from 2305 to 2315Z 5 x 3; VS5LH 2310 to 0020Z; N6CT 2317 to 2320Z 52.010 549 both ways. (Exactly one week earlier VK5KK had worked him same time SSB.) KG6JDX also worked, many JAs. 13/4: JA1, 2, 7, 8 0458 to 0840Z. 17/4: W7KMA 0012Z 52.020 539 to 559 and then changed to 52.003 and continued with CW until fading out 0100Z. Tom's XYL WB7TOV heard 5 x 1 at 0015Z, WA7EPU also heard. Distance 8,600 miles. W7KMA worked VK5RO, VK5ARZ, VK5KK and possibly others, and one way with Bob VK5ZRO. (I was in Adelaide spending money, so missed out!—5LP.) David VK5KK commented that it seemed strange, but while W7KMA, etc., were there nothing else was to be heard anywhere either on 50 or 52 MHz! KH6EQI 0340 to 0400Z same day. Later it opened to VK7ZIF, followed with JA1, 2, 3, 4, 0 from 1155 to 1332Z. Bob VK5ZRO was very pleased to have a couple of RTTY contacts, the first with JF3BRW for 30 minutes, 1224 to 1304Z, signals 579, and then JA2LQY, 1305 to 1332Z at 459. (Bob also reported late March contacts from 28/3 to 31/3 were confined mainly to numerous small JA openings.) 18/4: VK7 and ZL1BFQ and ZL1BHV 0300 to 0330Z. JA 0900Z to JA1, 2, 3, 4, 5 and 6. Since then the band has been somewhat quieter, with a brief JA opening on 20/4, 22/4 and 23/4.

Probably nothing to do with the 6 metre conditions, but while there was so much activity on 5/4 to 7/4 on 146 MHz, Channel 6 Mt. Gambier, Channel 7 Mt. William, and Channel 8 Mildura, repeaters were all noise free at VK5KG for long periods on all three days, peaking around 1000Z.

DOES SIX METRES EVER CLOSE?

I have received a rather interesting letter from Robert VK3XQ. Firstly, I wasn't sure how I could use it but now I do! Robert has set out for me (and you) a list of contacts on 6 metres during the whole of 1981 for places outside his own State. It is interesting to note that some contacts were made during every month of the year. VK and JA stations being the most numerous, I have just given the call area, others have the call signs. It's worth you scanning the list and remembering how many times you said the band was dead during the past 12 months.

1/1/81: P29DJ, H44PT, VK2, 4, 7. 2/1: YJ8PD, VK2, 4. 5/1: VK4, JA2. 6/1: JA3. 7/1: VK4, JA1. 8/1: VK1, 2, 4, 6, ZL, JE3. 10/1: VK4, ZL. 11/1: VK4, 8. 16/1: VK7. 22/1: VK2, 4. 1/2: VK4 6, JA1, 2, 3, 4. 3/2: VK2, 4, JA1, 2, 3. 4. 6/2: VK2 4, JA8. 8/2: VK4, JA2, 3. 9/2: VK4, JA7. 14/2: VK4. 17/2: VK7. 22/2: VK7. 25/2: JA7. 8/3: JA1, 2, 0. 15/3: JA1, 2, 3, 8, KH6JJI. 16/3: KH6IAA, KG6, JA1, 2, 3, 4, 5, 7, 9.

17/3: VK4, JA1 to 0 Inclusive for 80 contacts! 19/3: XE1GE. 30/3: H44HIR. 3/4: JA7. 0. 14/4: JA2, 3, 4, 6. 15/4: JA1, 2, 3, 4, 5, 6, 9, VK1, 4, 5, H44HIR. 16/4: H44HIR. 20/4: VK1, 2, 4, 5, JA1, 2, 7, 8, 9. 21/4: AH8A, KG6JDX, P29SIX. 24/4: VS5DX. 26/4: H44PT. 30/4: JA1, 2. 19/5: VK4. 1/6: VK4. 2/6: VK2. 8/6: VK4. 10/6: VK4. 29/6: VK2, 4.

2/7: VK4. 3/7: VK4. 10/7: VK7, ZL3ADT. 1/8: VK4. 6/8: VK4. 21/9: JA1, 2, 3, 6, 9, 22/10: JA2. 23/10: VK4, JA1, 2, 3, 4, 8. 17/11: VK2, 4, 5, 7, JA2, 3, 6. 18/11: VK7. 20/11: VK2, 4, P29SIX. 22/11: VK2, 4, JA1, 2, 5, 6. 23/11: ZL4AS, JA1, 4, 7. 25/11: JA1, 2, 4, VK4. 26/11: VK4. 27/11: VK4, JA1, 2, 3. 29/11: JA1, 2, 3, 4, 6, 7. 30/11: VK2. 1/12: VK4. 2/12: VK2, 4, ZL4AS. 3/12: ZL3ADT, ZL4CN. 4/12: VK4, ZL2KT. 5/12: VK2, 4, 5, ZL. 6/12: VK2. 8/12: ZL1, 3. 9/12: VK4. 10/12: VK2, 4, 5. 13/12: VK2, 4. 20/12: VK2, 4. 22/12: VK2. 23/12: VK2, 5, ZL. 24/12: VK2, 4. 25/12: VK2, 4, 7, JA1, 2, 3, 4. 26/12: VK2, 4, 5, 6, 7, 8. 27/12: VK2, 4, 8.

May and September seemed to be the leanest months, with August close behind. Surprising the number of mid-winter openings to VK2 and VK4. On many occasions the openings to Japan seem to have been assisted by Es as VK4 was also worked on the same day, indicating the JAs were probably into VK4 anyway and were assisted further south by Es. First time I, and probably most of you, have had such a period of operating placed before you at one time. Thank you, Robert, for the effort you put into the preparation of the list.

SMIRK PARTY CONTEST

The Six-Metre International Radio Club is sponsoring the 8th Annual (Summer, US) Party from 0000Z 19/6 to 2400Z 20/6/82. Participants are required to exchange SMIRK number and State or country. No crossband contacts, multi-operators or partial contacts. Check logs or dupe sheets not required. SCORING: Count 2 points for each SMIRK contact, 1 point for non-SMIRK. Total SMIRK plus total non-SMIRK multiplied by total number of States or countries worked = claimed score.

AWARDS: Trophies for high score SMIRK in two divisions — US/Canada and Foreign. Certificates for high score in each ARRL Section and Foreign State, Province, Prefecture or Country. ENTRIES: Entries to be eligible must be submitted on the Fall, 1981, edition of the official SMIRK log. Send entries, postmarked not later than 11th July, 1982, to Spencer F. Ritchie KA2MHT/5, 5122 Sagamore, San Antonio, Texas, USA 78242. The official SMIRK Party Contest log sheets are available from David Minchin VK5KK, Arthurlton, SA 5572, free to those requiring them, providing you enclose a stamped, addressed envelope for David to return the sheet. There is room for 80 SMIRK or other contacts per page.

CYCLES 18, 19, 20 AND 21

It's been a long wait but at last it has come to hand! I am talking about graphs of the solar count for those four cycles, courtesy of the Japanese CQ magazine, and Graham VK6RO who has been hunting them up for me. For months we have been missing the

one covering 1958 to 1969, but at last it has been found so we can now present the full story in figures to you.

Cycle 18 starts off in January 1945 with a solar count of 30! By 15/8/45 it had risen to 55. On 1/1/46 it was 70, and on 26/1/47 was 155, when J9AAO worked KH6DD over a distance of 7,360 km. This peak was maintained through March/April that year and then slowly dropped away. On 17/10/47 J9AAO worked CE9AH over 16,800 km. Then on 21/3/48 LU9AV worked KH6PP 12,200 km, with a solar count of about 145. Then on 23/7/49 on 144 MHz W3CUM worked W0BIP over 1,280 km with a count of 120. The count continued to slowly drop away to about 50 when on 10/6/51 on 144 MHz W6ZL worked W5QNL at 2,250 km. The count continued to decline until at 10 on 14/7/53 JA1FC worked JA6BV via Es. The count was zero in April 1954!

Cycle 19 now starts with the count rising to 20 by 1/1/55, and to 80 by 1/1/56. On 22/1/56 VK4NG worked JA1AHS, then with the count up to about 120 on 24/3/56 JA6FR worked LU3EX over 19,190 km, which was to stand as a record for some time. The count continued to climb so that at 160 on 1/1/57 JA was contacting W and on 4/3/57 CX2 was worked by JA. Then with the count at 190 on 8/7/57 W6NLZ worked KH6UK on 144 MHz for the first such ocean crossing. The peak of 205 was reached during November 1957, with numerous JA to W contacts. On 28/3/58 JA6FR worked PY3BW for 19,810 km, 15/5/58 JA-ZS1, and then a slow decline in count to 150 with JA to ZS3 on 10/9/59. The count slowly dropped to be 70 on 1/1/61, 40 on 1/1/62, 30 on 1/1/63, 10 on 1/1/64, and the lowest 5 during 1964. In the period January 1963 to January 1966 there were quite a lot of contacts between VK and JA. Additionally, almost at the lowest point, 11/4/64, W6DNG worked OH1NL on 144 MHz, and on 31/7/64, right at the lowest, W1BU worked KH6UK on 420 MHz.

Cycle 20 now takes over and by 1/1/66 the count is up to 30. By 1/1/67 it is up to 70, 1/1/68 125, and reaches the peak of about 130 in November 1968. By 1/1/70 it was just under 100, and in March 1971 LU1MBJ worked JA with a count around 75. A low spot was reached at 70 in August 1971, then a slight rise to 75 in April 1972, then a slow decline to 45 on 1/1/73, 35 on 1/1/74, 30 on 1/1/75, 20 on 1/1/76, and reached the lowest point of 12 about mid-1976. In August 1975 JA6DR and W6PO had their first 144 MHz EME QSO. Cycle 20 was largely uneventful as you can see.

Cycle 21 now takes over and in August 1977 JA to KL7 on 6 metres, when the count is only about 30. Then with the count at 50 VK8GB worked JH6TEW on 144 MHz for the first such time an SSB QSO. In April 1978, with the count at 80, JA worked CE3OK. March 1979 at 125 JA to ZS6LN. The peak of 165 was reached during December 1979. On 10/4/80 JA worked all continents with the count just below the peak. On 1/1/81 the count was 120 and has continued to fall away, but there is little need for me to spell out here what has

been going on in the way of contacts, particularly in the northern hemisphere. The figures for 1982 are January 125, February 123, March 121, April 119, May 117 (projected). A study of what good things were being done during the run-down of the other good cycle (19) indicates there may still be some very good contacts to be had, particularly October 1982 and April 1983. All indications from previous figures are that we can expect some improvements in 144 and 432 MHz propagation as the count goes down.

The outstanding point to come from the information in the graphs is the fact that the count rises fairly rapidly and falls away much more slowly. In other words, it takes about three years for the count to rise to its peak, it stays around that point for perhaps a year, then gradually falls away, taking about six years to reach the low point, where it stays for about a year also, and that takes care of the 11 years of the cycle. So we have had peaks in March 1947, February 1958, November 1968 and December 1979. When next, say November 1990?

DX-PEDITION TO GAMBIA

The C5ADL, C5AEG and C5ACG supported DXpedition by W6JKV and N6BFM to The Gambia from 7/11 to 20/11/81 was apparently a huge success. On 50 MHz they used an IC55D plus modified SB200 to an 11 element KLM 32 foot boom antenna at 65 feet. The 29 countries they worked on 50 MHz were 5B4, 8P6, 9Y4, C5, EL2, F, FM, FY7, HC, HC8, J6, JA, KG6, KH6, KP4, KV4, PJ9, PY2, SZ, VE, VP2M, VP2V, VP5, VS6, W, XE, YV, ZB2, ZD8. Not included but worked PA, EA. In addition they worked 13 countries crossband, 50 to 28 MHz, CT1, D, F, G, GU, GW3, HB9, OE, OK, OZ, PA, SM and SV. In working USA, they worked all US States except KL7 for 791 stations and 1,082 contacts! On 15/11/81 they claim to have WORKED ALL CONTINENTS (without working VK). Draw your own conclusions on the validity of this claim! The solar flux was 248 when they started the contacts, was 196 when they WAC, dropping to 156 when they finished. Congratulations are certainly in order for an outstanding effort, and only serves to show how much better the northern hemisphere has been than the southern. The above DX-pedition was reported by me in an earlier set of notes, but this further information will be more interesting. All the above comes from the Japanese CQ magazine, which is a wealth of information if you can read the Japanese language.

REGION 3 LOCATOR SYSTEM

You will recall some time ago I introduced the subject of locator systems which in effect indicate where on a world scale any particular amateur station might be located. Several systems were outlined and feedback was requested. A little interest was shown but not enough to make any real moves to adopt one or another system, with the WIA deciding not to do anything about changing the present situation.

I am now in receipt of a letter from Folke Rasvall SM5AGM, who is the VHF, UHF, SHF, DX Record Co-ordinator for Region 1,

which is headed "Region 3 has adopted Locator" and goes on to say: "The IARU Region 3 Conference was held on 2nd to 5th April, 1982, at Manila, the Philippines. The following resolution was read by Region 3 Secretary 9V1RH on telephone — 'This Conference resolved that The Human Language Code System developed by JARL be adopted within Region 3 for amateur radio purposes for transmitting the position of a station and that the proposed Region 1 Locator System be adopted for use with Region 3 when the time is appropriate, and further requests that both the system details and the above decision be conveyed to all member societies of the Union through IARU headquarters. The resolution was made by New Zealand, seconded by Japan, and carried unanimously.' (Human Language Code System means longitude-latitude given as N3452 E13942, which means 34° 52' north, 139° 42' east.)

"This was a very important step forward to a change to the new Locator in Region 1, and I guess I need not say that I am very glad for this resolution. It means that both Region 1 and Region 3 have declared that if there is a need for a locator system it should be the locator proposed at Maidenhead (modified G4ANB system = Locator). The only thing we are now waiting for is a corresponding statement by Region 2. The successful outcome of the Region 3 Conference was to a very large degree the result of active help in the first place from NZART (New Zealand) and in the second place from JARL (Japan), to whom I want to express my gratitude.

"It is obvious that the active support from a member society simplifies the adoption of a proposal quite a lot. It would therefore be very desirable if some of the Region 2 member societies could put forward a proposal corresponding to the NZART proposal. The only Region 2 society with whom I have been in correspondence is ARRL (USA). In USA there is support for both longitude-latitude (K1ZZ and others) and Locator (W3XO, WA1JXN and others). Why it seems natural for ARRL to propose both systems in parallel, especially since they complement each other. Longitude-latitude is based on points in a co-ordinate system and is good for giving the position of a station with high accuracy if the length of the information is of minor importance. Locator is based on alpha-numerical names of areas in a grid system and is good for collecting purposes and for giving the approximate position of a station with increasing accuracy through successive subdivision of the areas (field "J0", square "99", sub-square "DK"). Could we hope for an ARRL paper to the Region 2 Conference in 1983 proposing longitude-latitude in the first place and Locator in the second place for those who wish to use it? If adopted, this should be enough to permit a change to the new locator in Region 1 at our next conference in April, 1984.

"Finally, I want to thank you all for your help in reaching the above goal. Folke SM5AGM."

GENERAL INFORMATION

We seem to have given six metres another

good bashing this time, but then most of the time that's where the activity is, and what is reported here is only touching the subject; if all those who are actively engaged in working DX on that band were to contact me in any one month then no doubt a report could be put together perhaps rivaling that produced by SMIRK, which has for years been an outstanding assessment of the position on six metres throughout the world.

SCRAMBLE, FOX HUNT

I note in a letter from Gil VK3AUI that in Melbourne a 2 metre scramble is held every two weeks on Sunday nights, and a 2 metre fox hunt on the third Friday of each month. Both these activities have been going for some time, with the success of the scrambles being assured by the work being put into them by Rob VK3XQ.

432 AND 1296 ACTIVITY

There are also keen groups operating on 432 and 1296 MHz with contacts extending into the Mt. Gambier and Millicent regions of VK5. A group in VK5 are also actively engaged in 432 MHz activity each night with Bob VK5ZRO, David VK5KK, Don VK5ZRG being the mainstays. David VK5AGO has just moved into a new house in a super-doooper high spot at Cherry Gardens in the Adelaide hills and will be a force to be reckoned with in the future; his 432 MHz signals are S9+ here at 5LP and he's not properly set up yet! Another David VK5CK is gradually getting together his four 16LB yagis for 432 MHz. I noted the other day they were already mounted on the mast so that should be another strong signal from the Adelaide hills before long.

CONVENTION

Don't forget the South East Radio Group Conventicn over the Queen's birthday holiday weekend, 12-13th June, to be held in the Mount Gambier A. and H. Society Hall, Pick Street, Mount Gambier. A change from the usual format shows some events occurring on the Saturday afternoon, so it may pay you to get there a bit earlier than usual.

JAPAN ON TWO METRES

John VK6GU at Wyndham reports having worked two stations in Japan on the 23rd of April.

John VK6GU worked Yuki JH4JPO at 1052Z and then worked JH4XTN at 1103Z. Reports of 559 were exchanged. The characteristic flutter of transequatorial signals was observed. The distances involved were 3,424 miles and 3,419 miles as calculated by Graham VK8GB.

John has also observed paging signals from Japan on 146.81 MHz.

Steve VK4ZSH reports that, whilst portable at McKinlay, 115 km south-east from Mt. Isa, he heard paging signals from Japan on the 27th April from 1041Z to 1115Z. The signals were on 146.76 MHz from Mito City, 100 km north-east of Tokyo, and from Sendai City on 146.78 MHz and 146.810 MHz. These localities were confirmed by JA2DDN and JA1RJU, who had a frequency list of the paging locations.

Steve also reports hearing Japanese

signals on 2 metres whilst in VK8, 600 km south of Darwin.

THOUGHTFUL THANKS

Finally, I received a very nice letter from Philip VK3YAZ expressing his appreciation of the VHF/UHF notes. Whilst I never seek such letters, they are nice when they come and over the years quite a number have appeared on my desk. Philip also enclosed a number of very useful sayings which can be used for the thought of the month, and for this I say many thanks. They are obviously read and digested by many as they are often referred to in letters, over the air and personally.

I am closing the notes this month with two thoughts from those submitted by Philip and I hope you like them. The first: "Politics is the art of making yourself popular with the people by giving them grants out of their own money." The second: "You know you're getting old when your knees buckle and your belt won't." Remember: Don't turn off your six metre gear in the winter, there are often good contacts to be made.

73. The Voice in the Hills. ■



COMMERCIAL KINKS

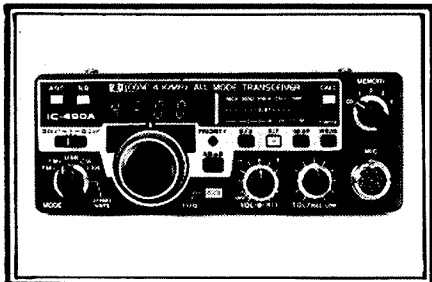
Ron Fisher VK3OM
3 Fairview Ave., Glen Waverley, 3150

THE IC-2A — A WARNING

One important function was unfortunately not checked when we reviewed the IC-2 hand-held transceiver in the September 1980 issue of Amateur Radio. This was the charging rate of the nicad charger supplied with the unit. It was recently brought to my notice that this was in fact double what it should be. The standard battery pack supplied with the IC-2 is of 250 Ma hour capacity and under normal conditions should be charged at 25 Ma for something over ten hours. However, tests carried out with Reg VK3CCE show that in fact the normal charger supplies just over 50 Ma. The cure is simple, connect a 100 ohm one watt resistor in either lead from the charger to the plug that connects to the battery pack. While looking at the charger and battery pack, it was also discovered that the connector supplied is the wrong size. It is both too long and has the wrong internal size to fit the centre pin on the battery pack socket. If you are having trouble with improper charging, check this carefully.

Vicom International were approached for information on actual charging rates for the IC-2A standard battery pack, and Mr. Duncan Baxter of that Company confirmed that the charging rate should in fact be 25 mA. You would therefore be advised to put the 100 ohm resistor into battery charge line, and also include a similar resistor in any leads made up to charge the IC-2A from a car battery/cigarette lighter socket. ■

AR SHOWCASE



ICOM RELEASES NEW ALL-MODE 70 CM RIG

The amateur radio business market worldwide has sharply contracted and, as a result, the major three manufacturers from Japan will each only release two or three new models over the next year.

The manufacturers are rapidly diversifying into business and marine radios and the old pastime of generating markets by introducing new equipment is well and truly over.

One of the three new pieces of equipment to be released by Icom over the next 12 months is now available.

It's the model IC490A SSB/CW/FM 70 cm transceiver.

The new transceiver is modelled along the lines of its popular 2 metre cousin, the IC290A.

Whilst the IC490A is a superb mobile rig, it has all the features and options which make it also an excellent base station.

The transceiver includes five memories and two VFOs for storing of simplex and duplex frequencies, a priority channel and optional tuning at 25, 5 or 1 kHz.

The transceiver offers both upper and lower sidebands and all the standard features such as RIT, CW sidetone and semi-break-in, selectable AGC and a very efficient noise blanker.

Many amateurs enjoy the scan facility on 2 metres and naturally the IC490A offers this feature!

Full specifications and pricing details are obtainable from the Australian distributors, Vicom International Limited, from their Sydney or Melbourne offices or from one of their authorised dealers throughout Australia. ■

NEW "SIMPLIFIED" BOOKKEEPING SYSTEM

Tandy Electronics announce the arrival in Australia of their new "simplified" bookkeeping programme for their Model 3 TRS-80 microcomputer called "Checkwriter-80".

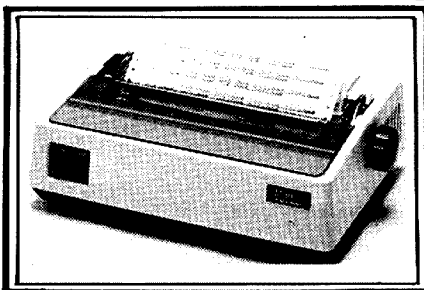
The programme requires a Line Printer and provides a cheque register plus an expense-tracking and bank reconciliation system.

Checkwriter-80 is as easy to use as filling out a cheque or deposit slip, yet gives the user all the power and accuracy of the TRS-80 Model 3 microcomputer. It is ideal for small business bookkeeping.

Checkwriter-80 handles up to nine banks (or nine different accounts for one bank), 75 payees, 30 expense categories and 2,500 transactions (cheques and deposits). Reconciled cheques are nulled from the system at the end of each period to make room for more.

Once entered into the programme, the computer prints the payees' names and addresses on each cheque automatically. The cheques can then be slipped straight into window envelopes for mailing. The computer also prints cheque registers, bank lists, payee name and address lists, and an expense list.

Tandy Corporation (Australian Branch), 280-316 Victoria Road, Rydalmere 2116, Sydney, or any Tandy store for further information. ■



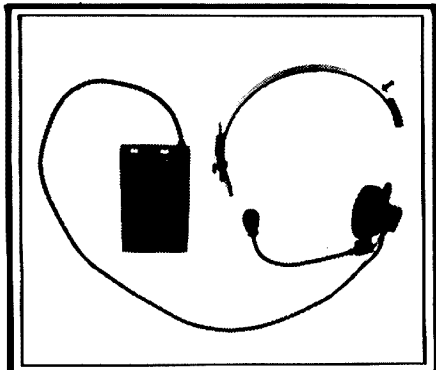
MICROLINE PRINTERS

The Microline Series 80 Printer family have arrived at COMP-SOFT. This ultra-modern equipment which is backed up by a fully "After Sales Service" is suitable from the hobbyist to a large business installation.

The Microline 80 Printer is ideal for the hobbyist, it is reliable, does 40 or 80 characters per line or condenses to 132 characters per line, upper and lower case, and graphics at 80 characters per second. Has friction and pin feed, 6 or 8 lines per inch and takes standard 2 in. spool type-writer type ribbon.

Any system that has a Centronics type output can be easily connected to the Microline 80, otherwise you will need a serial interface.

Further details by calling Comp-Soft Microcomputer Services, 235 Swan Street, Richmond, Victoria 3121. Phone 428 5269. ■



SHORT RANGE PERSONAL COMMUNICATION USING NO HANDS

The recently released new personal mobile VHF FM transceiver, the "C-900 Talkman", is designed to provide two-way communication over a distance up to 1 kilometre. The Talkman is suitable for many different applications, as it is compact in size, light weight (250 grams), with a light weight headset and the transmitter is voice operated, which makes it extremely popular for operators that require their hands free whilst talking.

The Talkman has only two controls to make operation as simple as possible, with one being the volume level switch and the other the VOX sensitivity switch. It is DOC approved and operates on a frequency in the 55 MHz band.

For further details contact the Australian distributors: GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. ■



COMMERCIAL CHATTER

Last Icom IC22S Sold

The last model IC22S transceiver has been sold by Vicom.

The IC22S used a diode matrix to establish frequencies on a multi-channel selector switch and was the first synthesised PLL 2 metre transceiver on the market. It was one of the most popular and successful transceivers produced and just under 5,000 were sold in Australia alone.

Nearly one in every three amateurs in Australia has an IC22S as it is a highly reliable, yet budget priced transceiver. It is

sold in many third world countries for commercial and government usage.

The last unit sold in Australia was purchased by the President of the North West New South Wales Amateur Radio Group, Phil Beard VK2VBM. Phil's unit was suitably inscribed by his local Vicom dealer, Stockman and Higgins.

Icom has replaced the IC22S with a new synthesised 25 watt unit, the IC25A, which is selling exceptionally well despite the reduced interest in 2 metre gear. ■



The photograph shows Phil VK2VBM with his new transceiver. Centre is Reg VK2ATS of Stockman & Higgins. Right is Denis VK2NVN receiving a sister rig to the IC22S, the remote controllable IC22U.

U.S. Visit by T.B.C. Executive

Mr. John Marsden, general manager, T.B.C. Pty. Limited, has returned from a visit to the United States, during which he held marketing discussions with leading US manufacturers of radio and television broadcasting and communications equipment.

T.B.C. is a prominent Australian manufacturer and supplier of broadcasting equipment. Talks in the USA were centred

on meeting increasing Australian requirements for special-purpose US-designed componentry, either by importing or by local manufacture

While overseas, Mr. Marsden also attended the 1982 convention of the National Association of Broadcasters. Held this year in Dallas, Texas, the convention was attended by more than 30,000 delegates. ■

Buffy's Bull...

from "Gateway", Feb. 1982

Not just anyone can become an amateur radio operator, certain pre-requisites must be fulfilled for one to come into being. Firstly, the prospective amateur must be broke financially, there is no such person that can afford to buy all of the equipment necessary for the hobby; otherwise it would take half the fun away.

Secondly, prospective amateurs must have a mental kink, a kind of exhibitionism that allows them to talk loudly in public places.

Thirdly, the prospective amateur must have many time consuming commitments other than radio, this prevents him from having any fun.

Whenever these mental and environmental conditions occur there is a better than even chance that the subject may deviate from the broad path of 'normal life' for the precarious existence of an amateur radio operator.

The first signs are when they peer through the slits in the back of the telly to see how the pictures get in. Then they keep turning the family wireless from the 'Fox' to 'Short Wave 1' listening gleefully to parts of conversation like "... how about ya there, C'man?" appearing randomly from various corners of the globe.

The next step is the accumulation of old examination papers to prepare themselves for the ritualistic 'trial by ordeal' known to mortals as the AOCPEX exam. This esoteric initiation has few parallels in the history of mankind, a strange metamorphosis sets in that ultimately produces yet another licenced radio operator.

This newfound skill will enable one to swagger up to a group of total strangers in a pub and start a topical conversation on subjects like 'Standing waves' and 'Coaxial losses' with complete confidence.

The next task of the amateur is to acquire some suitable equipment and may at this point meet substantial opposition from other members of the family. It may be subtly pointed out that the money could go towards shoes for the children or a second dress for the wife, but these problems can be overcome with time and patience.

Once the equipment is purchased a minor problem remains, getting it into the house. Here a little verbal dexterity can be used to introduce it to the family. Tell of how it can be used to improve international relations, how the SWR meter improves audio quality and how your 800 channel synthesised FM VHF pocket transceiver is really just a walkie talkie. This is called the 'rationalisation' process.

The final and ultimate problem is the antenna system, there are no set rules here, though the usual method is to start small and let it get bigger and bigger until the full height of a sixty foot tower is achieved. Spread the rumour that the higher it is the less interference it causes and keep telling the neighbours that "it's only a hobby." ■

SPOTLIGHT

ON

SWLing

Robin L. Harwood VK7RH
5 Helen Street, Launceston, Tas. 7250

PORT STANLEY RADIO

Recent listening and monitoring of the bands has been especially interesting, since Argentina occupied the British dependency of the Falkland Islands in the South Atlantic. The radio station in Port Stanley, the capital, has been an elusive catch for many DXers throughout the world, even those on the South American continent. So when the Falklands were propelled into the world headlines, considerable attention was given to monitoring the Falklands.

RADIO NACIONAL

This tiny radio station operates on two frequencies, one on medium wave (536 kHz) and the other on the 120 metre channel of 2.370 MHz. In the pre-invasion days, it mainly carried BBC tapes and local request programmes, with frequent relays of the BBC World Service. Now it has an Argentinian call sign — "Radio Nacional, Islas Malvinas" (after the Spanish name for the Falklands) with identification in Spanish and English. I believe that some of the BBC music tapes and shows are still being heard, but they naturally do not carry the BBC World News any more, preferring instead to relay Radio Nacional programmes in Spanish from either Buenos Aires or other southern cities. Yet, curiously, they have been reported as still carrying BBC Sports Round-up.

BBC

To cover the developments for the trapped residents on the Falklands, the BBC in London has increased its programme "Falkland Report" from a weekly to a three times weekly broadcast, utilizing its Ascension Island relay base in the mid-Atlantic. It is being heard from 2120 to 2200 UTC on 11.820 and 15.400 MHz on Sundays, Tuesdays and Thursdays. This was in addition to the quite extensive coverage in the normal BBC news and current affairs programmes. I believe that RAE, the Argentine External Service, has extended its services and has been heard in Europe at 2210 UTC in English on 11.710 MHz.

AURORA AUSTRALIS

April has also been a very interesting month as far as propagation goes. Down here in Tasmania, we have been in a fortunate position to observe several times the Aurora Australis or "Southern Lights". These displays naturally indicate severe ionospheric disturbances. It is common not to be able to hear close stations up to 1,000 km away clearly, especially on the lower frequencies, yet signals from Japan, China and the Northern Pacific come in very strongly.

These auroras also provide a reflective curtain on VHF, and it is possible to work 500 to 1,000 kms, if you point your VHF yagis into the aurora and bounce the signal

off. Unfortunately, this reflection is not suited to voice communications, as the effect is similar to speaking through a hollow tube. CW does seem to get through, yet it sounds watery and has flutter.

You will observe that, prior to an Aurora display, there will be propagation to unusual locations at times not normally heard. For instance, on the 10th of April, 24 hours before the display, I was hearing Radio Amman in Jordan on 7.155 MHz at 0730 UTC in Arabic. It is certainly late to hear Mid-East signals on 40 metres, and next day there was no sign of Amman at the same time. By then the disturbance had commenced.

You will also find that conditions will be severely disturbed for up to three days or more, after these auroras appear, particularly on the higher frequencies above 6 MHz. When these "storms" abate, signals and propagation will often peak again before settling down.

HELP!! WITH ID

I have recently come across two mystery stations that I am unable to positively identify. I know that one station is in Bogota, Colombia. It was logged on Monday, 12th of April, 1982, from 1020 through to 1230 UTC in Spanish on the unusual channel of 12.268 MHz LSB. It consists of lectures in geometry, economics and European history. At 1230 clock chimes were heard, followed by an I/D mentioning Bogota, Colombia. As seasoned Latin specialists will know, their delivery is very rapid and, as I was in a portable location, I did not have any recording equipment to assist me. So if any readers could enlighten me with its call sign, I would be grateful.

The other mystery station is a presumed Clandestine. On 9.027 MHz from 0500 to 0600 UTC there is a station broadcasting in Farsi (Persian), just five kilohertz up from a Teheran channel. Location of this station is unknown, yet I seem to recall reading or hearing of the practice of Iranian clandestines sliding up to known Teheran channels. As the Teheran signal is well down compared to the Clandestine, it does indicate to me that the QTH could very well be either Cairo or in the Mediterranean. Unfortunately, when the I/Ds were given on the quarter hour, the US Strategic Air Command fires up on channel with one of their "Sky King" messages, wiping it out for several minutes. Any help you can also give me on this station will also be appreciated.

Well, that is all for this month. In future columns I will be including a list of coastal stations, so those who find difficulty in receiving WIA slow Morse sessions, due to varying reasons, can get CW experience. Until next time, all the best of DXing and 73.

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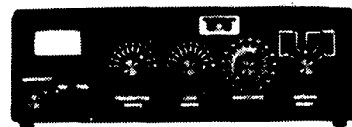


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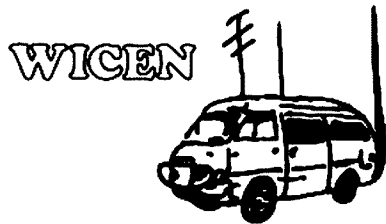


SCALAR GROUP

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Kilsyth, 3137.
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NSW: 502-2888
QLD: 44-8024
WA: 446-9177



W0615



R. G. Henderson VK1RH
171 Kingsford Smith Drive, Melba, ACT 2615

Old-Timers Club



The first of the two 1982 VK/ZL "QSO parties" took place on 8th March (14 MHz) and, judging by comments received, the opportunity to contact other members of the Clubs was appreciated by all who took part.

However, out of a combined membership of about a thousand in RAOTC and OTC (NZ), the logs show that only 39 actually took part, 16 VK3s, 8 ZLs and 7 VKs.

Twenty-five of these submitted logs, a decrease of one on the 14 MHz party of last September. Scores in VK were down, apparently due to skip effects, but in ZL they were well up.

RESULTS

Call	Mode	OSOs	Multiplier	Total
VK4AIX	CW/SSB	25	7	875
VK4CJ	CW	21	8	840
VK5CO	SSB	26	6	780
VK3LC	CW/SSB	20	7	700
VK3PR	SSB	16	8	640
VK5RK	SSB	21	6	630
VK7RF	SSB	18	7	630
VK3VF	SSB	16	7	560
VK3KS	CW	17	6	510
VK3XB	CW	17	6	510
VK3ZC	CW	16	6	480
VK2AKE	CW/SSB	14	6	420
VK3NA	CW/SSB	14	6	420
VK2AW	SSB	11	7	385
VK3NV	SSB	13	5	325
VK3XF	CW/SSB	13	5	325
VK7BJ	SSB	13	5	325
VK7JU	SSB	11	5	275
VK3YK	CW	10	5	250
W6GTI	CW	11	4	220
ZL3BJ	CW/SSB	32	8	1280
ZL2KM	CW	22	8	880
ZL2AB	CW/SSB	28	6	840
ZL3AV	CW	22	7	770

COMMENTS

"I worked all the boys that I heard. I am a die-hard CW man, a ham over 60 years, and would like to see more of the members participate as I enjoy the parties very much."—John Stewart W6GTI.

"I greatly enjoyed contacts made with many ex-RAAF members during the contest."—Maurice Burleigh VK7JU.

"Enjoyable, but disappointed no VK1 or VK6. Look forward to next one on 40."—Joe Ackerman VK4AIX.

"The score is not very large — he who hesitates has lost a contact — but I do enjoy this type of get-together". — Jim Edwards VK2AKE.

"As a new member I am very pleased to have been able to join in."—Fred Gee VK7RF.

NEXT QSO PARTY

7 MHz, Monday, 9th August, 1982, 0800Z to 1100Z.

Further notification of the date will be given, but refer to AR or ARA, February 1982, for rules.

THREAT ANALYSIS OR DISASTER PLANNING

Continuing on the theme of threat analysis as applied to counter disaster planning, I recently came across a report of proceedings from a Regional Disaster Preparedness Seminar sponsored by NDO from 15

to 28 March, 1981, at Mt. Macedon, Victoria. Whilst the seminar considered disaster analysis for many countries in the South East Asian region, the Australian findings are of direct interest to us. The analysis was presented as a table, reproduced below.

ANALYSIS OF THREATS — AUSTRALIA

Level of Severity \ Likelihood of Occurrence	Level of Severity		
	Major	Moderate	Minor
HIGH	Erosion, Flood (seasonal area) Drought, Cyclone, Wildfire Severe local storms (incl. hail)	Floods (flash)	
MEDIUM		Plagues	Landslide Temperature Extremes
LOW	Epidemic	Tornado Salinisation Tsunami Earthquakes	Frost

No significant Threats: Volcanoes.
Remarks: Climate change is also important.

When planning your involvement in countering disaster, and more particularly the training leading up to it, you should examine the relevance of the table entries to your local area. Note also that some table entries also influence not only what you do but how you do it, for example, climate.

What are the most likely threats?
What can WICEN do to counter them at the various levels of severity?
How does this influence training?
How does this influence equipment, frequencies used, etc.?

Finally, don't forget the support role where your WICEN group becomes the out-of-disaster-area base station to relay or feed messages into the SES/NDO system.

QUESTIONS

The questions you must ask are:—



QSP

HALLEY'S COMET

Four years from now — in March 1986 — Australians again should be in the privileged position of viewing Halley's Comet as it swings past the sun and heads back into the distant reaches of space. Halley's Comet is named after famous English astronomer Edmund Halley, who observed it as its return in 1682. Armed with this information, Halley made the revolutionary prediction that the comet would again return in 1758. The comet again was observed in 1835 and 1910. Improved translations of ancient Chinese records have enabled astronomical historians to trace it back at least to 83 BC. But what, after all, is Halley's Comet? It is a ball of ice and dust — a cosmic "dirty snowball" which (upon reaching the neighbourhood of the sun) suffers a certain amount of evaporation of the ices on its surface. The gases released swell into a huge cloud many times larger than the earth which glows due to the excitation

of solar radiation — something like a huge cosmic neon sign. Pressure from the "solar wind" (a stream of charged sub-atomic particles boiling off the sun into interplanetary space) ionises some of this gas and blows it back into the tail — a stream of very tenuous gas millions of kilometres long which always points away from the sun, irrespective of the direction of the comet. Only the biggest telescopes will be able to see the comet until mid-1985, when well-equipped amateur astronomers may have their first glimpse. By November 1985 it should be visible in 7 x 50 binoculars and in early January of the following year may be just visible by eye if one knows exactly where to look. A short tail should be visible by binoculars about this time. On January 13, 1986, it will be close to Jupiter and the crescent moon in the western sky.—"Scientific Australian."

OSCILLOSCOPES

A newly introduced oscilloscope developed by Scopex Instruments in the UK is battery powered and needs no cathode ray tube. Instead it uses a liquid crystal display. It is small in size, of low weight, memory and low power requirement.—EEC 14/4.

Interesting Number Plates

During the Hamfest in Vancouver, Washington, in May 1981, George VK3NQ, was intrigued to see hundreds of cars with "Amateur Callsigns" for number plates. The plates are easily obtained for a price of \$25.00.



Pictured are two plates from the family of Jo and Lee Moise, K6AYZ and K6AYU, of Artesia, California.



Jo (pictured) is Secretary of the International 10-10 Club, the reason for the CQ TEN plate.

Photographs by VK3NQ

Technical Achievement



Pictured is Mr. Hans Ruckert VK2AOU, the joint winner of the Technical Award (see Feb. '82, p.41). Hans advises us that since his school days he has used any money earned through Amateur Radio to buy parts and equipment to improve his station,

so his \$50.00 will be put to good use. Congratulations, Hans.

ATTENTION to all budding journalists, come forth. You could be a winner next year.

Human Flies

HUMAN FLIES

During late 1981 the State Electricity Commission of Victoria installed a new 500 kV transmission line through Ringwood. The transmission lines run along the back of Dave VK3DBJ's property.

Dave spent many "a happy hour" watching the installation of the spacers as the methods used were very entertaining, as we can see from the 'photo.

The spacers are installed on a set of four wires and the installation man has a "jalopy" which consists of four wheels which fit onto the four wires and the man sits on and "pedals" himself along.

The transmission lines are too close for Dave's comfort at times as they do give him plenty of QRN.

Photograph by VK3DBJ



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LETTERS TO THE EDITOR



Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

and who lived and fought for it over the years. It is the symbol of the WIA fondly remembered by old-timers as the badge of their Institute, and to change it is an affront to the very existence of Australian amateur radio. The fact that two badges are depicted on Amateur Radio for this month shows in some way the indecision of the governing body of the Institute and of many of its members. In this day and age it is usually changed for the sake of change or someone is too blurred in their vision as to be able to tell the difference in the various badges. I never thought I would see the day when we would fail in our birth-right as depicted in this other badge. Are we losing that singleness of purpose and becoming a disorganised rabble with no idea of direction or purpose? Are we Australian amateurs, distinctive in our own nation, or a bunch of variegated colonists clamouring for a bit of extra recognition? The confusion is quite obvious, as depicted in the supplement in Amateur Radio recently, in which the diamond takes preference on the front page, and our old-timer on the inner page, and on the application form for membership. I feel this matter needs attending to, and the sooner the better. I have been a member and officer of the WIA at various times during my 47 years as an amateur and, now close on 70 years of age, I am extremely disappointed at the adoption of another symbol, when our old badge has served so many.

(Signed) Leslie Arnold VK7AM. ■

4 Parkes Street, Oak Flats, NSW 2527

The Editor,
Dear Sir,

Just a passing thought, while on air the other night talking to another gentleman the subject of upgrading was brought up and I was thinking what a good idea if Amateur Radio could publish, when a person upgrades, their old and new call signs. This would eliminate the wondering that, when a CQ call is heard: Have I made contact with this station previously??? One's filing card system and call book could be amended until a new book is acquired when published.

Yours faithfully,

John Pratley VK2VWT.

EDITOR'S NOTE: Two problems arise: (a) on many occasions DOC lists take time to arrive, and (b) the turnover nowadays is considerable and the lists could be very lengthy following each set of exams. This would mean extra space in AR either by dropping other content or extra costs for larger issues. ■

The Editor,
Dear Sir,

204 Myers Street, Geelong 3220

In AR April 1982 you printed an article on great circle maps (page 16).

This appeared to be very popular by the large amount of letters and on air contacts received. However many people had trouble with lines $290 A5 = \text{SQR}(1 - (A4^*2))$ and $380 H2 = \text{SQR}(1 - (H1^*2))$.

Some computers do not accept "*" as a "rise to the power of" command, so this may be replaced by a "^" sign.

This will solve most problems and I hope you can print this soon to the benefit of your readers.

73. Keith Vriens VK3AFI. ■

The Editor,
Dear Sir,

I am currently doing some research into the origins of the WIA emblem, and would be very grateful for any information that your readers might have. Also there seem to be several variations in design (position of the wings, etc.) and copies of these designs would also be appreciated.

If enough material is forthcoming it will be published in the form of an article in AR.

Jennifer Warrington VK5ANW (QTHR). ■

3 Corkill Street, Freshwater 4872 Qld.

The Editor,
Dear Sir,

RE: PHONE PATCHING

At the present time there are certain amateurs and commercial interests who are advocating the use of telephone patching on the amateur bands in this country.

These people have plenty of points for the introduction of phone patching and are carrying out a publicity campaign for its introduction.

However, they completely ignore the points against it, as well as the opinions of other amateurs.

The following are points against phone patching:

1. The reasons for and the manner in which it is being "pushed" are not in the best interests of amateur radio.
2. It has very little, if anything, to do with amateur radio.
3. It is impractical on today's crowded bands, since clear channels are required.
4. It is unnecessary since adequate and relatively inexpensive telephone channels are available to the public, both locally and internationally.
5. Its use could be in breach of third party regulations when used internationally to certain areas.
6. The operator of a station concerned would have little control over what was said, such as obscene language, contentious or illegal subject matter (other than to switch off), thus placing his licence in jeopardy.
7. Phone patching on the American bands has, in the past, caused considerable friction and unpleasantness until it was relegated to certain frequencies such as MARS.
8. There is more than enough interference, "DX rackets", intruders, pirates and other "garbage" on the bands without introducing another unnecessary source of contention.
9. The WIA should seek the opinion of all amateurs and not be swayed by a few "lobbyists" whose only concern is to "line their pockets".

Your sincerely,

Ted Gabriel VK4YG. ■

Officers' Mess,
RAAF, Point Cook, Vic. 3029

The Editor,
Dear Sir,

The April Issue stirred me to comment. Firstly, we must publicise our hobby in a simple, positive manner since most Australians only get the impression that amateurs either cause interference or talk to people in war zones. (The Falkland incident was positive press.) Most people will not meet an amateur in their lifetime, so when we get publicity or meet people our message must be simple and graphic. Re-read Harry's VK6WZ article, page 37, and have a two minute "patter" giving the basics and an anecdote (or show them the IC-2A).

Secondly, and continuing, re-read the EMC notes page 38. You'll see that if we take a narrow view either technically or in personal considerations we can waste our valuable time very easily. We must realise that narrow-mindedness can be two-way, and education or PR will help reduce the ignorance people have of amateur radio. Begin at home. Does your family really know what you are on about? Or the neighbours?

How about a "travelling show"? Sam VK2BVS showed the way and different groups are always exhibiting at shopping centres every Saturday. It doesn't take much battery power to get 2m FM going for a morning. Take a world call sign map and a clearly lettered simple sign. How about a topographic map to show them where you're talking

The Editor,
Dear Sir,

7 Bond Street, Mt. Gambler 5290

One sees from time to time in your magazine, and in others, warnings regarding the Trade Practices Act in respect to dubious advertising.

I would like to relate a story, if I may, regarding a series of advertisements by a well known national electronics company in the hope that others do not fall into the same trap as myself.

It started with an advertisement in Amateur Radio for November last year (the same advertisement also appeared in the popular monthly magazines about the same time) offering a "NEW" FT101ZFM and quite clearly indicating that "Now you can have the features of the renowned FT101ZD with the benefit of FM . . ."

At first, I wasn't sure about the FM, but was quite sure that I would be purchasing a SSB/FM transceiver with a digital display since a digital display was the only feature a FT101ZD had which the FT101Z didn't.

I wrote to the advertiser questioning the FM side of it, but it never occurred to me to query whether or not the transceiver had a digital display. Several weeks later I received a note written on a page from a memo pad. This note didn't answer my queries, but the advertising leaflet enclosed did confirm that the FT101ZD featured a digital display.

In the meantime, I had ordered a transceiver through the local distributor for the particular company concerned. Much to my surprise, the transceiver arrived with an analogue display only. A phone call by the distributor to Sydney brought negative results, so the matter was brought to the attention of the Department of Public and Consumer Affairs. After much negotiating between the parties concerned, the company responsible for the advertisement offered me a digital display at a slightly reduced price. Under the circumstances this was quite unacceptable.

Legal advice obtained since then indicates that, since the transceiver was purchased from the distributor and not directly from the advertiser, any attempt to recover the digital display should be in the form of a writ against the distributor not the advertiser. Since I do not consider it the fault of the distributor, I am loathe to take this action.

To would-be customers of this particular national electronics company I suggest they be aware of the traps in the method of advertising used, and to distributors for this company I suggest they obtain legal clarification of their position, since it would appear that they are responsible for the description of equipment sold by them in response to the national advertising.

At the time of writing the FT101ZFM is now being advertised as having the features of the FT101Z "plus FM", which is still not correct since the FM is at the expense of the AM facility.

All one can do now, perhaps, is to throw one's hands in the air and give up!

73. Ivan Muser VK5QV. ■

114 Frederick Street, Launceston, Tas. 7250

The Editor,
Dear Sir,

I have before me a copy of QST March, 1931, and on one of its pages are depicted the badges of the member countries and amateur societies of the IARU. Standing alone and of distinctive outline is the badge of the WIA. Representative of an age in which the WIA rose to its present status, this badge should be placed on the highest pinnacle, as a mark of achievement and to the dedication of the amateurs who owe their birth-right to this country

to. And be sure to explain the difference between CB and USI You and your mate, not just your club.
73. Peter R. Ellis VK2KEP/P3 RNARS 1528. ■

Robert Gerard Felcia,
Victoria Street, Port Muthlun,
Rodrigues Island, Indian Ocean.

The Editor,
Dear Sir,
I am Interested In being a radio amateur. I meet lots of Australia radio amateurs on their yachts passing my Island.

Here, where I live, there Isn't any local Institute, so I must be self-taught. I hope you have heard about my Island, which Is a small point on the world map. I so want to introduce the world to my Island.

I am going to ask you for some help. I would be very grateful to you If you could let me have a Morse key and some books about the easy way to learn Morse, and some technical books. Thanking you for your co-operation.

Could you please pass this on to Australian radio amateurs?

I remain,
Yours faithfully,
R. G. Felcia. ■

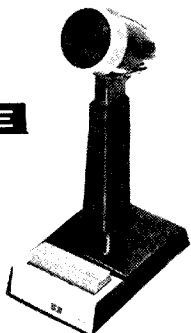
EDITOR'S NOTE: Anyone wishing to contact Robert may write to the above address.



QSP

HAM FAIR 1982
The JARL announce that Ham Fair '82 will be held in the New Hall of the Tokyo International Export Center from 20th to 22nd August, 1982, Inclusive. 1982 is also the 30th anniversary of re-opening of amatel radio in post-war Japan. Also the Japanese amatel service, from February 1982, has been permitted the use of repeaters. ■

FAMOUS AMATEUR MICROPHONE
NOW AVAILABLE IN DUAL IMPEDANCE
SHURE MODEL 444-D



SHURE

- Microphone Features:**
- High-output, durable, totally reliable CONTROLLED MAGNETIC cartridge.
 - Response tailored for speech intelligibility.
 - Switch selectable high or low impedance.
 - Normal/VOX switch on microphone.
 - Double-pole, double-throw, Million-Cycle leaf-type push-to-talk switch with momentary or locking switch bar.
 - Three-conductor, one-conductor shielded coiled cable.
 - Cable and switch arranged for instant connection to grounded or isolated transmitter keying.
 - Rubber feet keep microphone from slipping.
 - Height adjustment for operator comfort.
 - Strong ARMO-DUR case impervious to rust and corrosion.

PRICE: \$110

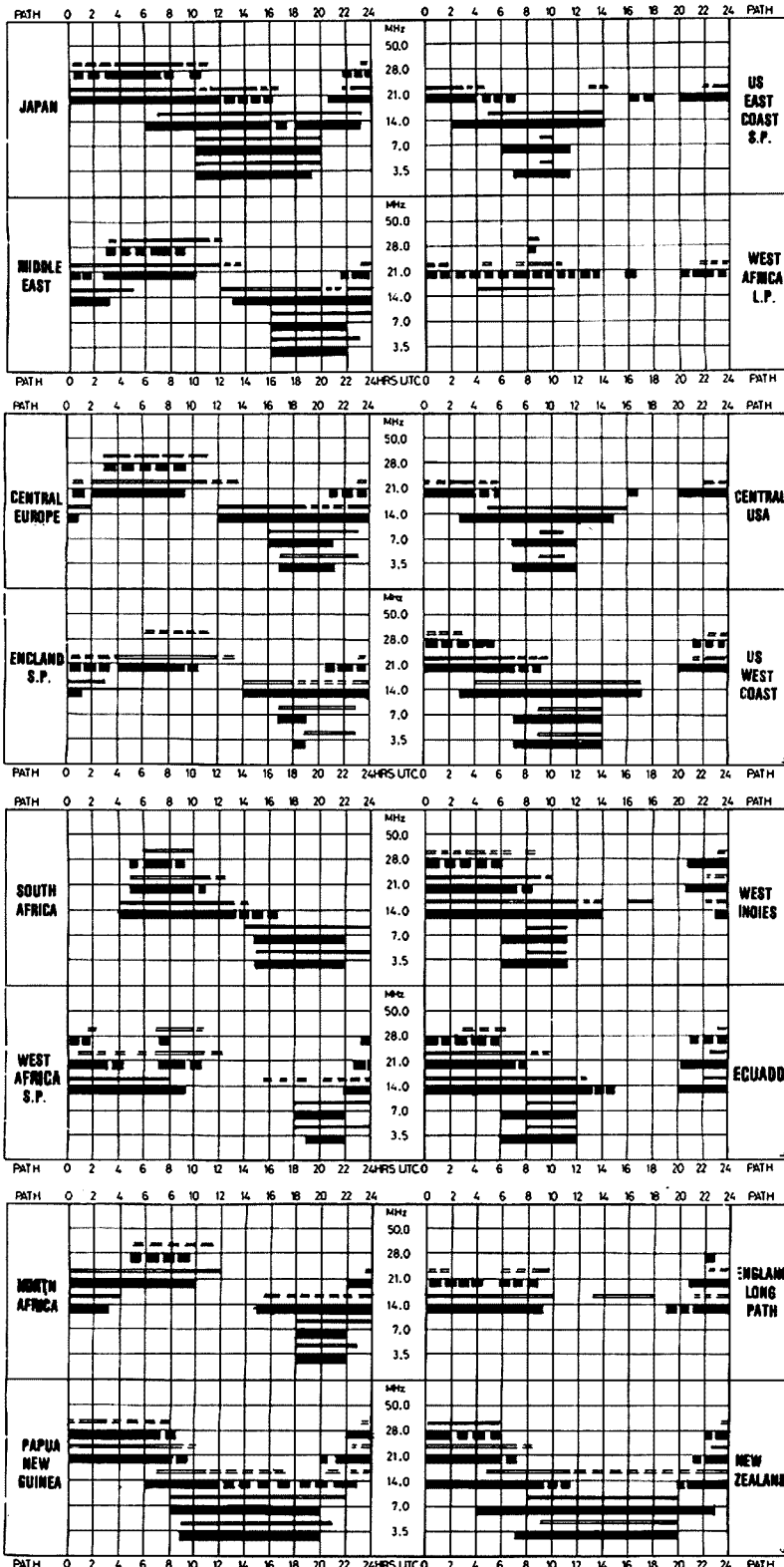
WILLIAM WILLIS & Co. Pty. Ltd.

PHONE: (03) 836 0707 W0617

98 CANTERBURY ROAD, CANTERBURY, VIC., 3218

IONOSPHERIC PREDICTIONS

Len Poynter
VK3BYE



LEGEND:
 ■■■■ FROM WESTERN AUSTRALIA.
 ■■■■ FROM EASTERN AUSTRALIA.
 ■■■■ BETTER THAN 50% OF THE MONTH, BUT NOT EVERYDAY.
 ■■■■ LESS THAN 50% OF THE MONTH.

Predictions courtesy Department of Science and Environment IPS Sydney.
All times universal UTC (GMT).

SERVICE BULLETIN

or do your own repairs??

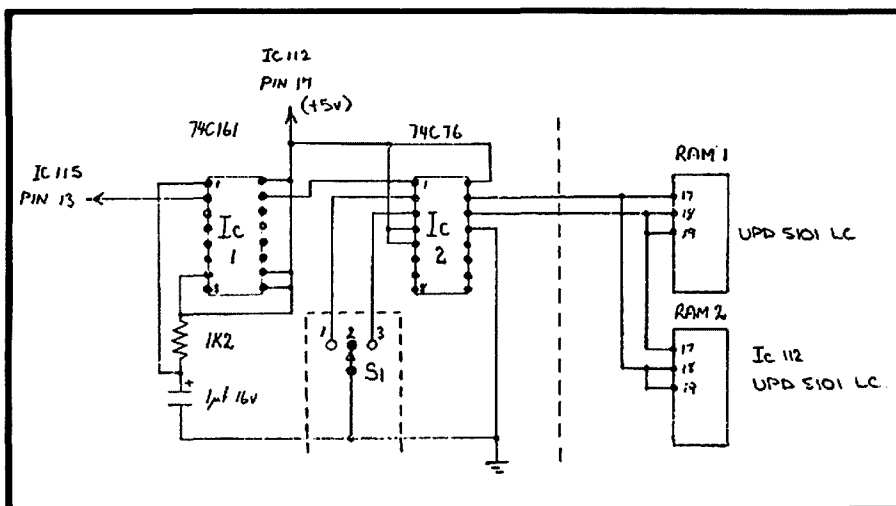
• Modification to Increase Memory Capacity

This modification will increase the memory capacity of the SX200N by installing a second 16 channel memory IC, with control circuitry to access either memory for programming or recalling frequencies

and to enable a 32 channel scan mode, or two separate 16 channel scan modes.

This information has been kindly supplied by GFS Electronic Imports, 15 McKeon Road, Mitcham 3132.

RAM 1 mounted on RAM 2 and their corresponding pins soldered together, i.e. pin 1 to pin 1 etc., except for pins 17, 18 and 19. Desolder pins 17, 18 and 19 IC112 from main board and wire as per diagram.



- S1 1. RAM 2 ONLY (16 channel scan A, Prog/Recall RAM 2).
 2. RAM 1 & 2 (32 channel scan A).
 3. RAM 1 ONLY (16 channel scan A, Prog/Recall RAM 1).

NOTE: SCAN B will only function correctly when either RAM 1 or RAM 2 is held on permanently, i.e. S1-1 or S1-3.

Some Handy Hints and Immutable Laws for the Amateur Antenna Builder

- Never climb a tree you can't get down if the ladder vanishes.
- Never assume an RF path is cold unless you have checked it—with someone else's finger.
- No matter how much wire appears to be on the spool, it is always at least 3' short.
- No matter how many trees you have, they are not in the right places . . .
- . . . Or if they are in the right places they won't be big enough for another 50 years.
- ANYTHING will work as an antenna to some extent, but NOTHING works as well as it should.

The impedance of any new antenna is always outside the range of your ATU.

YOU can change ionospheric propagation paths—if you build a V-Beam or Rhombic for a particular path, the path will move at least 20° by the time you fire up.

Breaking strain of a wire is easily determined—it is always 10 kg less than the minimum force required to get it up in the air.

By reference to handbooks you can always prove that no useful antenna can be made from the materials at hand.

—VK2DXP
 from "Propagator", Feb. '82



WORLD WIDE RADIO

YOUR ONLY VHF & UHF SPECIALIST
COL. FISHER VK3KAG
 24 The Trossachs, Frankston, 3199
 Victoria, Australia
Tel. (03) 789 3412
 All Hours

- UNDERWOOD METAL CLAD MICA CAPACITORS \$2.60 ea.
- CHIP CAPACITORS \$1.00-\$5.00
- CAMBION RF CHOKES \$2.50
- COMMUNICATION CONCEPTS
- 80 watt VHF \$169.00
- VHF-UHF AMP KITS, 100 watt
- 28V VHF \$187.00
- DOUBLE BALANCED MIXERS \$12.00
- AVANTI ANTENNAS \$71.20 ea.
- B1016 MIRAGE VHF AMP. \$325.00

W0618

WANTED

Novice Radio Operators

(TO BE)

If you want to study for your Novice Licence, then there is a new book just released which contains all the study material you will need to sit for the DOC licence exam.

It's called **THE NOVICE OPERATORS THEORY HANDBOOK**. Copies are available at \$7.50 packed and posted.

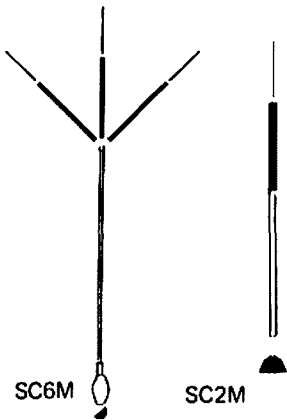
Write to:
GRAEME SCOTT VK3ZR
 11 Balmoral Crescent, Surrey Hills 3127

OR
SANDY BRUCE-SMITH VK2AD
 110 Rosemead Rd., Hornsby NSW 2077

OR
 Contact your local WIA Division or local book dealer.

W0619

H.F. MOBILE ANTENNA SYSTEM SC-00-R SERIES - TRI BAND



SC-00-R Series
Choice of two masts -
6M or 2M Bumper or
guttergrip mount -
Single resonators for
80-10M operation.
Triband operation
without adjustment of
antenna.

**Communicate
with
SCALAR**

HA600T SERIES

6ft Heavy duty fibreglass whips.
High radiating efficiency.

Power: 100W Average
400W P.E.P.



	MHz
HA610T	28 - 29
HA615T	21 - 21.45
HA620T	14 - 14.35
HA640T	7 - 7.15
HA680T	3.5 - 3.70

W0620



SCALAR GROUP

20 Shelley Ave.
Kilsyth 3137

VIC. 725 9677
N.S.W. 502 2888
O.L.D. 44 8024
W.A. 446 9177

SILENT KEYS

It is with deep regret that we record the
passing of —

Mr. T. CONNOR	VK7CT
Mr. I. A. NICHOLS	VK7ZZ
Mr. C. SHORT	VK4CM
Mr. A. W. WHITE	VK3AHW
Mr. G. W. L. WOOKEY	VK3YJ, VK3AYJ

OBITUARIES

ALAN WHITE VK3AHW, ex VK2AWW
Alan White VK3AHW, ex VK2AWW, passed
away on the 7th of January in the Danden-
ong Hospital after a long illness. He was
in the prime of life at 55 years of age.
He leaves a grown up family and his
second op., his wife Bev. To them we
extend our sincere sympathy.

I well remember Allan as a young school-
boy from the Coburg High School calling
in to my shack way back in 1948. He was
a very keen lad and showered many ques-
tions on me about amateur radio.

He followed a career in electronics, ob-
taining his AOCIP in 1946. Alan spent 11
years in the Navy as a CPO in radio and
radar work. He was a member of the Navy
Radio Club, a full member of the Television
and Electronic Institute of Australia and an
associate member of the Radio Engineers.
In his keenness for radio he also held a
broadcast stations operator's certificate of
proficiency. Electronics was his life.

Snow Campbell VK3MR. ■

GEOFF WOOKEY VK3YJ

It is with deep regret we mourn the pass-
ing of Geoff VK3YJ on 10th April, 1982.

I first met Geoff when we were lads at
the WIA classes and we took out our
licences at the same time, almost to the
day.

For years we roamed together, confided
in each other and for a time I helped Geoff
operate on the BC bands. But then I
married and moved north to Sydney, and
the only contact we had was the occasional
Christmas card.

About 12 years ago I had a shack full of
army disposal gear and a valve receiver
and transmitter, and I asked Geoff if he
might be interested in getting back into
radio. His first reply was "No", but later he
changed his ideas and went "full ahead",
suggesting I do likewise.

We started out like "new chums" on 2
metres and then we graduated to the HF
bands.

Geoff was a skilled electrical instrument
maker and was on crutches from his early
teens, but he did not allow this to limit
his activities too much.

Ron Easterbrook VK3RM ■

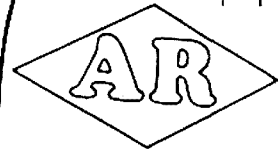
BUYING OR SELLING GEAR?

HAMADS
MAKE IT HAPPEN FAST



When You
Buy
Equipment

Say You
Saw It In



HAMADS

PLEASE NOTE: If you are advertising items FOR
SALE and WANTED, please write on separate sheets,
including ALL details, e.g. Name, Address, or both.
Please write copy for your Hamad as clearly as
possible, preferably typed.

- Eight lines free to all WIA members.
\$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to
P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding
publication. Cancellations received after about
12th of the month cannot be processed.
- OTHR means address is correct as set out in
the WIA current Call Book.

TRADE HAMAOS

Conditions for commercial advertising are as fol-
lows: The rate is \$10 for 4 lines, plus \$2 per line
(or part thereof) minimum charge \$10 pre-payable.
Copy is required by the first day of the month
preceding publication.

Ordinary Hamads submitted from members who
are deemed to be in the general electronics retail
and wholesale distributive trades should be certified
as referring only to private articles not being
resold for merchandising purposes.

Amidon Ferromagnetic Cores: Large range for all
receiver and transmitter applications. For data
and price list send 105 x 220 SASE to: R.J. & U.S.
Imports, Box 157, Mortdale, NSW 2223. (No en-
quiries at office: 11 Macken St., Oakley, 2223).

CB Radios \$69; walkie talkies, short wave radios,
military, outback, business, amateur, marine, re-
pairs, RTTY Siemens 100A printer \$120; base mic.,
\$45; ultrasonic alarm, \$35; all ham bands on a
single 6 ft. whip, 1.8 to 30 MHz, for base or mobile,
\$300; aeriels, installation, demonstrations, 40 ch.
CB conversions, accessories, new rigs weekly.
Bridge Disposals, 12 Old Town Plaza, opp.
Bankstown Railway Station, NSW. Mail order service
and all enquiries to 2 Griffith Avenue, Roseville
2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only,
on (02) 407 1066.



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WANTED

12V DC Relay, 4000V. VK2QT, QTHR. Ph. (048) 71 1018.

Quote to remove old beam from 50 ft. tower and replace with new beam. Ph. Hepburn (03) 596 2414 after 6 p.m.

For Spare Parts: Icom DV-21 digital VFO, any cond. Roy VK3AOH, QTHR.

Crystals, to suit Pye Ranger carphone, ch. 5 rpt., 4.0625 Mc xml, 13.1292 Mc rcve., HC6V holder. Peter VK2XAN. Ph. (042) 29 5047.

Kenwood AT120 Tuner, top price paid for good cond., freight paid. VK4CIX. Ph. (07) 355 0080.

Can any amateur help supply me with a circuit diagram of a grid dip oscillator? Q MAX. Model GDO-1A, made by Electronics Ltd., London, will pay expenses, VK5CH, QTHR.

Receiver, type AN/APR-4, complete with all coil units, APS4 radar scanner, radar type H2S equipment, TCS genemotor power supplies, antenna tuner and speaker/controller, valves type 1B24, 1616, equipment type GEE, Rebecca, Eureka, APN70, TPS3, AVQ10, MN26, 360 degree antenna position dials, other aircraft radar components, particularly from Vampire, Gannet and Sea Vamon, equipment required for static display. VK3AQB. Ph. (03) 337 4902.

WANTED KNOWN

SWLs: Australia's national "Southern Cross DX Club" has the latest news from the SW, MW and amateur bands in our monthly "OX POST". Write for a sample magazine and details of membership to G. Williams, PO Box 64, Campbelltown, SA 5074. Return postage would be appreciated. Hope to hear from YOU soon.

FOR SALE

Kenwood TS120S, incl. 27 MHz VFO 120, with manuals, \$625; DSI frequency counter, 3350 model, complete, \$100. VK3VON, PO Box 68, Ballarat, Vic. 3350.

Kenwood TR2400 SMC-24 spkr., mic., batt. charge, Kenwood base stand ST-1 and dynamic mic. MC-30S, instruction manual, as new, in cartons, \$400. VK3BAV, QTHR. Ph. 598 8665. Sale due to illness.

Scammer, JIL SX-200.26-514 MHz, 16 memories, new, still under warranty, instruction book, etc., forced sale, genuine, Newcastle area. VK2AXZ, QTHR. Ph. (049) 54 0893.

Kenwood TS520S mod. for novice power, MC50 mic., AT180 tuner, immac. cond., \$700. VK2VQK, QTHR. Ph. (02) 607 7845 evenings, weekends.

Genuine Antique Radios, crystal set, parts for restorations, old amateur radios 1933 onwards, Morse key collection, incredible HV supply, 2-3 kW, screen supply alone would run legal plus, dozens of power transformers, including 5.5 kV and some LV types, suit high power transistor rigs, transmitting gangs, disposals gear, many other items. SAE P. Nesbitt, 32 The Grange, East Malvern, Vic. 3145. Ph. (03) 211 8979 AH.

Colour Camera, National WV3300, C mount with 6:1 zoom and fixed 25 mm lens, 100 LUX min. illum., electronic viewfinder, resolution 250 lines, SN 45 dB at normal illum., uses 1 in. striped vidicon, separate CCU with balance and lighting controls, excel. ATV camera with 12V AC adaptor supplied, or use direct with recorder having 10 pin video connector, near new cond., \$1,100. VK3ZZZ, 3 Bullano Court, Greensborough. Ph. (03) 434 3510.

Kenwood TS180S, 16 months old, also TS180 speaker, \$675. Ph. (07) 284 7739.

FT-7B Solid State Txcvr., many extras, incl. YC-7B digital dial, \$535; VFO-820 external VFO, compatible with many rigs apart from TS-820, as new, \$90; 13.8V 20A continuous, fully regulated PSU, metered, \$95; Kenwood R-820 top of the line receiver, originally cost more than a TS-820, excel. cond., \$550; Swan WM-1500 in line wattmeter, as new, \$50. VK3ARZ, QTHR. Ph. (03) 584 9512.

Advance Audio Signal Generator, model H1E, 15 Hz-50 kHz, sine/square wave, 0.2 mV to 22V output, \$40; Teletype No. 14 typing reperforator, 50 baud with 110V AC synchronous motor, working, and orig. Teletype parts, adjustments and operation manuals and two tapes, \$25; Teletype No. 14TD reader, 110V, with adjustments manual, works need adjust., \$5. VK2ZET, QTHR. Ph. (02) 85 4640 AH.

Johnson Viking 352D, converted to 10m, 46 channel, plus clar. SSB, incl. helical whip, little use, \$150. VK3ACN, QTHR. Ph. (054) 42 1288 Bus., (054) 43 7592 AH.

Shack Sale: Yaesu FT290R portable all mode Txcvr, carry case, mobile mounting, nicads, charger, 40W linear, 5/8 vertical, as new, \$600, ONO; 2 off CROs, RF and AF signal gens., valve transistor and CRT tester, Mullard, complete, AMR 101 communications receiver, xtal locked, power supplies, etc., \$600 lot, ONO. Peter VK2XAN. Ph. (042) 29 5047.

Superboard II Microcomputer, 8k-basic, 8k-ram, easy conversion to send/receive RTTY and Morse, easy conversion to MODEM, with stacks of manuals, books, mods., notes and software, can hook into "Source" type mainframes, \$280, ONO. Must sell. Ph. (02) 939 7141 AH.

Yaesu FT101E, brand new, complete with mike, handbook, AC-DC cables, fitted with 11m, covers 160-10m with RF speech processor, \$600, ONO. VK2AOV, QTHR. Ph. (060)25 4068 Bus., (060) 21 4811 AH.

Micro-module 432-28 MHz Transverter, still under warranty, recently checked by M. M. Birmingham, \$175. Frank VK2ZI. Ph. (080) 6228.

Beam Antenna, Hygain, TH3 Mark 3 tri-band HF beam, covers 20-15-10m, with instruction book, \$235 cash. Ph. (03) 465 2991.

National Panasonic RF6000, 12 mths. old, v.g.c., \$1,600, ONO; Realistic FM scanning Rx. PRD2001, v.g.c., \$200, ONO; CB-Wasp 18 ch. AM, with mic., \$50. Please apply in writing only. QTH: S. Nickel, 11 St. Andrews Avenue, Birkdale 4159.

FTDX 401B, with FV401, separate VFO, match. spkr. and antenna, 14 AVQ, with hand mike, the lot package deal, \$600. Contact VK2CXN. Ph. (049) 81 1582.

FTDX 400 Yaesu Txcvr, mint cond., with match. spkr., fan and noise limiter, spare set tubes and manual, \$450, ONO. VK2QT, QTHR. Ph. (048) 71 1018.

Hygain V converted 10m VFO ANY, 400 kHz in 2 x 200 kHz steps, USB & AM, RIT, 6 kHz, presently covers 28.200 to 28.600, vernier dial for easy tuning, only \$100; Trio 9R-59DS comms Rcvr, 0-30 MHz, locks and works OK, \$100. VK4KLV, QTHR. Ph. (07) 208 8709.

Antenna Oar: KW E-Zee Match, 80-10m, 400 PEP, bal./unbal. output, as new, \$60; Hygain RF550A wattmeter, 400/4000 watts, fwd./rev. power, with 6 pos. coax switch, as new, \$50; 18 AVT antenna, 80m top coil o/c., OK 40-10m, \$50; University MYA-6 VTYM with RF and HV probes, \$15. VK2AMT, QTHR. Ph. (02) 451 4902.

Galaxy V HF Txcvr., power supply, manual, diagrams, \$260; Heathkit electronic Morse keyer, \$30; antenna, 5 element du band beam for 10 and 15m bands, \$130; the lot for \$400. VK5ATU/NTU, QTHR. Ph. (08) 258 7020.

Kenwood 130S, brand new, never used, \$830, or reasonable offer. Barry VK4BIK. Ph. (07) 396 2279.

FT101E, AC-DC, 160-10m, complete, first class order, plus three helicals 80, 40, 20m, \$650. PO Box 339, Maroochydore 4558, Old. Ph. (071) 43 5853.

Kenwood TS520S, v.c. and manual, just been rated, new finals, m.g.c., \$475; Yaesu FT107M/Dms., sanning base mic., built-in supply, under warranty, manual, \$970; AT200 tuner, \$130; all gear in new cond., owner going overseas. David VK2PKW. Ph. (02) 607 5813.

Collins 75S-3 Rx, with noise blanker, Collins 32S-1 trans., with 516F2 power supply, one owner, top cond., reasonable price. Gene VK4AJ, QTHR. Ph. (076) 38 1113.

DG1 Digital Readout Kit, for TS820, unused, \$130; quartz 16 2m FM txcvr, \$160; ASR-33 teletype ASCII printer, with all manuals and interface for TRS-80/systems 80 computer, unit has paper tape reader and punch, \$200; TS180S txcvr, with DFC 180, CW filter installed, \$850. Ph. (02) 981 4762.

C-42 ax Army Txcvr, FM 10W O/P, tunable 36-80 MHz, with PSU, harness, mic., headphones and ATU, \$100. Steven VK2VYV. Ph. (02) 982 1071.

Yaesu FT227RB 2m FM 800 chan. txcvr., in as new cond., with handbook, cables, mobile brackets, etc., complete with workshop manual, \$240. Geoff, VK3DGV, QTHR. Ph. (03) 580 3773.

FT200 Trnscvr., excel. cond., no mods., incl. power supply, mic., manual, spare finals, \$340. Max VK2GE. Ph. (043) 92 4900.

Kenwood TS180S, DFC, dual SSB filters, CW filter, WARC bands, etc., full spec on request, manuals, orig. packing, \$825 or offer. VK3UJ, QTHR. Ph. (03) 874 5632.

Yaesu FT-208R, 2m hand-held with leather case and nicad charger, YM 24A speaker, mic., features full scanning from 144-148 in 10 or 5 kc steps, 10 memories, priority scanning or work split freq., 6 mths. old, excel. working order, urgent sale. Offers to David. Ph. (03) 726 7248 AH.

Deceased Estate: All items listed in first class cond. Txcvrs, C-430 10W 70 cm, TS820S with ext. VFO, FTDX-570, TS700A, type 3, mk. 2, with mod. and spares, SWR meter, Vicom VC-2, VOX-3 unit, VHF RF amp. type 10-40BL, MC-22-S speech processor, mics. Foster, Telco, Astatic, LP filters (52 ohm), tape recorder, mains adjusting transformer, Hills telescopic mast, spare valves, coaxial cables, etc., Enquiries VK3EM, Ph. 578 7745, or VK3KF, Ph. 596 1833, or QTHR.

FTDX400/FRDX400 HF All-mode Tx/Rx, 10-160m, 250W SSB, 150W CW, cross-mode, cross-band or transceive operation, narrow CW filter, VOX, CW break-in, orig. mic. and manual, 240V AC, ideal base station, \$250, ONO. John VK3ATM, QTHR. Ph. (03) 459 1151 AH.

Yaesu FT101B HF Txcvr, excel. cond., from the estate of late John VK5JQ, \$500. Contact Dave Adlam VK5QL, QTHR. Ph. (08) 263 2811.

Linear Amp. for 6m, power output 100W CW, drive power 10W, requires 13.8V DC, \$170; Yaesu FT2FB 2m FM rig, 10W RF output, \$120. Nav VK4ZNC, QTHR. Ph. (07) 225 7207 Bus., (07) 205 2121 AH.

IC202 and mic., case and manual, 3W PEP, 3W CW, beacon crystal, v.g.c., \$175. VK3DGS. Ph. (059) 68 1327.

FRG-7 Rx and 3 kHz filter, good cond., \$200. Allan Myers. Ph. (03) 337 0547.

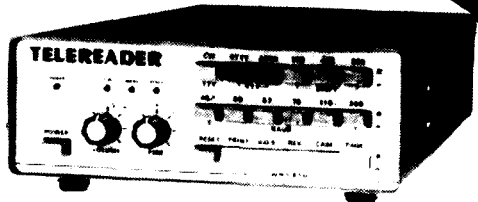
Shack Clearance: IC701 with IC701 power supply, IC RM3 remote control, \$900, Diawa DC7001 controller, DR 7600 heavy duty rotorator, \$200; Hygain TH3 JNR, \$130; Hygain 18 AVT WB, \$50; KW 107 supermatch with dummy load, \$150; Heathkit SB 601 scope, needs a little work, \$50. VK2DEN, QTHR. Ph. (02) 609 1897 AH.

Kenwood TS520S 160-10m Trsvr, virtually unused and absolutely immaculate, with MC35S, mic., manual, etc., in orig. packing, can arrange delivery anywhere, \$475, offers considered. Hans VK5YX, QTHR. Ph. (08) 271 5350.

Teletypewriter, Siemens mod. 100, complete with tape punch and reader, excel. cond., 50 bwd, 240V motor, \$285. Ph. (03) 337 4902.

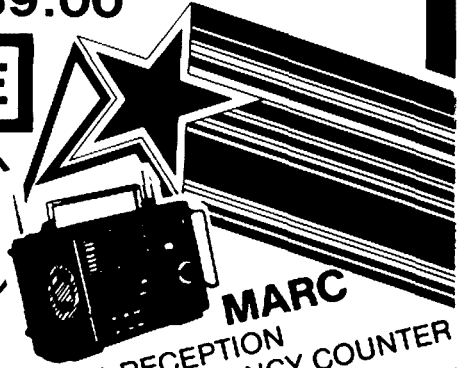
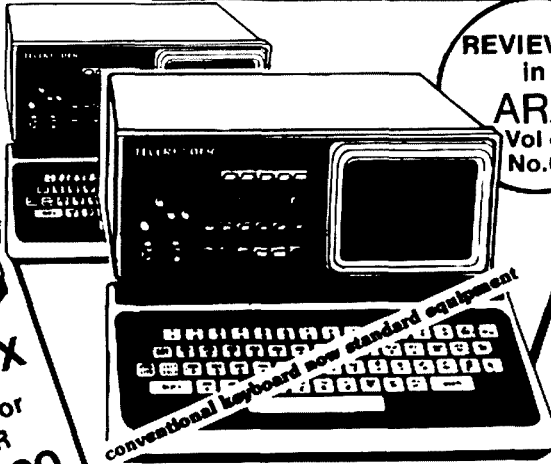
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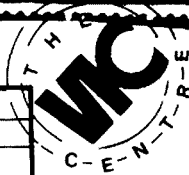
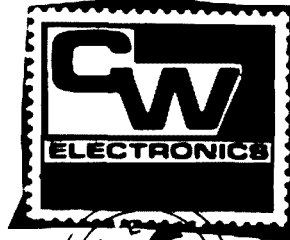
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Dear Amateur,
Consider these two recent reports of amateurs who purchased Yaesu equipment from 'backyard' importers: both these cases were told by the purchasers to our store staff in trying to get some help.

Case History No. 1:
Mr X from Adelaide bought a transceiver by mail order. After waiting some time for delivery, the unit arrived but shortly after the digital display failed. Mr X rang the supplier to be told the repair would take 6 to 8 weeks, and he would have to pay freight charges in Adelaide at his own cost.

Case History No. 2
Mr Y from Sydney bought a 'new' transceiver from the same source. On opening the carton, Mr Y strongly suspected the unit was not new, but had been 'refurbished'. It failed to operate at all - the PA stage was inoperative. Mr Y rang the supplier to be told that parts were unavailable and the repair would take at least three months. As it was supposed to be a brand new unit, Mr Y asked for a replacement. This was refused.

Other problems:
We have often heard of transceivers supplied without instruction manuals, or with Japanese language instruction manuals... Obviously these units were intended for the Japanese domestic market, and never intended to be exported. The warranty is not valid in Australia on these units.
Many 'backyard' importers do not have any service facilities whatsoever - let alone spare parts. They are not authorised by Yaesu, (or usually anyone else) and often have little expertise.

Is it worth the risk?
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YM-34	Desk Mic for FT 707 SAVE \$14.55!	(C-1114)	\$29.95

Some stores have limited or no stock available. Ring Jim Powell at Head Office (02) 888 3200 for details on where to find these bargains

DICK SMITH Electronics

See Page 34 for address details

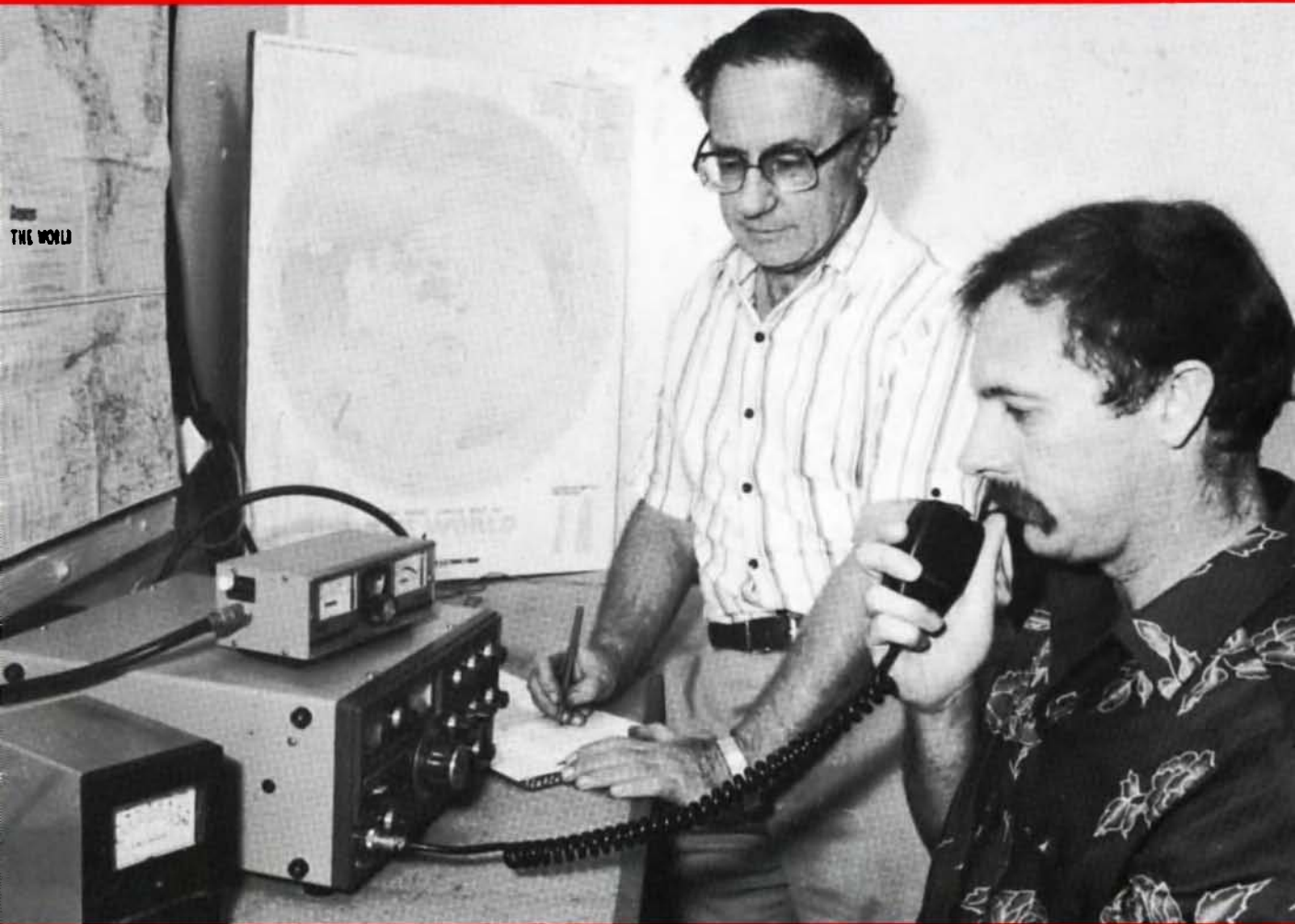
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Amateur Radio

VOL. 50, No. 7 JULY 1982
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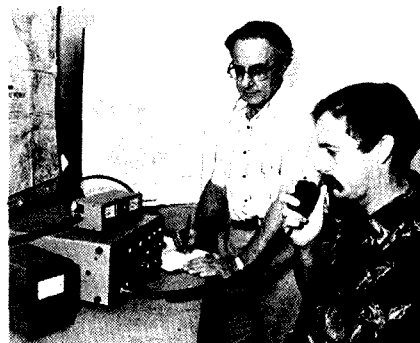
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COVER PHOTO



Barry VK2AAB (standing) and Ian VK2DLU
operating VK2MB. See "Sydney to Rio
Boat Race", p.51.

WIA NEWS

PHONE PATCH

An approach was recently made by Executive to the Chairman of Telecom to determine the present standing of the Institute's proposals for phone patching.

In reply the Chairman said that the whole question of private interconnects to the telephone network — and this includes amateur phone patch facilities — is under consideration by the Davidson Committee appointed by the Federal Government. Until such time as this committee hands down its findings Telecom is not in a position to further the Institute's request.

WAVCKA FOR VKs

The Executive has approved the rules relating to this Award for Australian operators. This means that the rules printed in the 1981/82 WIA Call Book on pages 36 and 37, including those parts printed in italics, are operative.

RD CONTEST RULES

The RD Contest rules and trophy scoring formula appear elsewhere in this issue. The "RD" is our friendly contest and every effort is being made to encourage PARTICIPATION — this is the reasoning behind the new trophy scoring formula, which is based on proposals submitted by VK6. ■

* * * *

PARADOX

One day while walking up a stair,
I saw a man, who wasn't there,
He wasn't there again today,
Gee!!, I wish he'd go away!!

* * * *

A Love Letter to a 65 year old Husband . . . just Retired

From Lyrebird December 1981

My Beloved George, I welcome you home with pride and with pleasure. There may have been pleasure in it 30 years ago but there would never have been more pride. And I welcome you with a re-assertion of the vow I made to you 43 years ago. I still take you for better or worse. My pride lies in the fact that you have made it to retirement. This is a great achievement you know, as many are not so fortunate.

Since you first went to work you have manoeuvred your way past some formidable dangers . . . a couple of wars, cancer, heart attack, automobile accidents, mental breakdowns, and lightning. A man who has survived the perils of the last 50 years is a hero by just staying alive.

I'll want you to have a nap every afternoon because it will be good for you and because you deserve the luxury. I'll want you to sit up on week nights to your heart's content and see all the late movies you want. I'll want you to go to the doctor every six months for a check-up. I'll want you to come and go as you wish, fish, hunt, or play with your pals as long as you wish. I'd like you to think about enlarging your shack and would like you to spend untold happy hours rag-chewing with your cronies. I want you to take \$400 out of savings and buy yourself some casual clothes for this great new adventure of your life.

Now for your instructions! . . . Stay out of my kitchen!! . . . Prepare a chart showing which of the household chores you intend to take over . . . Start by cleaning up your ashtray and any other mess you make during the day. I'll still take care of your evening and week-end messes, except in the shack . . . Prepare to give me two free afternoons a week to be with my friends . . . Have your eyes checked, then subscribe to a second newspaper, because we are going to have a lot of time on our hands, and news-reading will help to fill it . . . Set up in the bank, in your investments, or somewhere, an adequate sum of money in my name so I can get it in a hurry if I have an emergency to face alone . . . Read your life insurance policies and let me know what in the world they mean . . . Then go and make a Will — that is if you want your meals on time! . . . Be informed that when "retirement let-down" hits you in about a month, you will have ten days — no more — to feel sorry for yourself. After which you'll have to smarten up and get on with your new life.

I'm so glad, my dear, that you have come home in retirement. As soon as we have become acquainted with each other, we are going to have a splendid time! Your loving and devoted wife, Jean (XYL VK2GT). ■

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W0614

a word from your EDITOR



Bruce Bathols VK3UV

HOW EFFECTIVE IS YOUR INSURANCE COVER?

From time to time we read of amateurs who have had severe damage caused to their antenna installations as a result of a storm (see April AR for such a story).

In the same storm which was featured in that issue, several other local amateurs also suffered extensive damage to tower installations.

Your editor was no exception, in fact the damage sustained was greater than that published — to the tune of around \$1,800. This included a Nally tower, Tri-band yagi, VHF verticals and 16 el. yagi, rotator case cracked, coaxial cable stretched and allowing water to penetrate, etc.

It is pertinent to relate these details to you as we often take for granted that our aerial system is safe, and it is covered under our household insurance policy.

WELL, THINK AGAIN, AS I HAVE!!

My own situation is such that I have two insurance policies, one for the contents (which includes all radio gear) and another for the buildings. Both are with separate companies.

It eventuated that the company insuring the buildings finally accepted the claim, but not without heartache!!

The contents insurers were adamant that because of the major part of the system was installed on a steel pole embedded 9 feet into the ground surrounded by concrete, it was a PERMANENT fixture.

However, the "buildings" insurer thought otherwise, as most of the installation was of a "MOVABLE" nature it should come under the responsibility of the "CONTENTS" insurer.

The matter was finally sorted out, but it would have been much easier had I had the same company insuring both "CONTENTS" and "BUILDINGS".

A new antenna installation has been completed, with all new bright and shiny tower, antennae, rotator, cables, etc. — all paid for by the "BUILDINGS" insurer.

But that is not the end of the story — the saga has an unusual twist to it!!

I have now received a letter from the "BUILDINGS" insurer stating that "INSURANCE COVER FOR STORM DAMAGE

TO YOUR AERIAL SYSTEM IS HEREBY DELETED FROM THE POLICY".

After checking with several other insurance companies, I discovered that, although it is unusual in most cases, it is quite legal to delete certain items from insurance policies and, in the event of a major claim such as mine, similar action may be considered by other companies also.

So there we have it — new antennae and tower — and no insurance cover.

Further enquiries have revealed a broker for "LLOYDS" insurers would be prepared to issue a separate insurance policy for around \$4 per \$100 of cover — in my case that is approximately \$80 premium per annum. I have no option but to accept that insurance as no other local company would issue a separate insurance cover. I have been advised that most companies automatically extend their householder's insurance to cover radio masts, etc., but now a doubt exists.

You would be well advised to check with your own insurance company — just in case! ■

QSL Card Contest



A world-wide contest is being held in honour of the 25th JOTA, the 75th Anniversary of Scouting, and the 125th Anniversary of the Founder, Lord Baden-Powell.

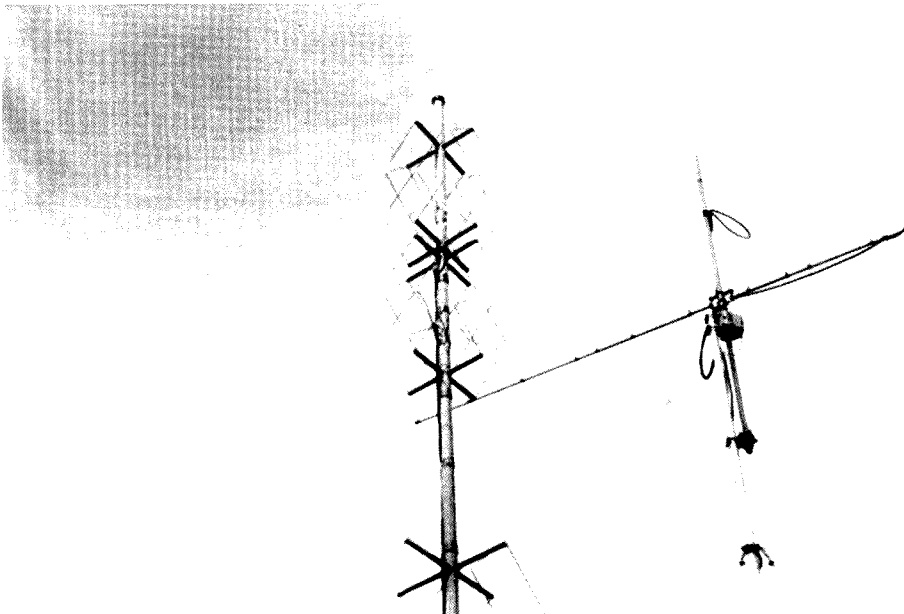
RULES

- Cards in both categories must be designed by Scouts or Guides. Age limit 18.
- Contest is open to all young people who participate in JOTA and who are members of the Scout or Guide organisations which are part of the World Organisation of the Scout Movement, or the World Association of Girl Guides and Girl Scouts.
- Entries cannot be returned. They will be used for an international exhibit at the 15th World Jamboree.
- Each QSL card must be marked on the back with name of designer, street address, city, State, postal code, country, plus age and name of Scout or Guide unit, and Scout or Guide Association.
- Entries must be received in Geneva by 31st December, 1982. Winners will be announced by 31st March, 1983.

Mail to JOTA QSL CONTEST, World Scout Bureau, PO Box 78, CH 1211 Geneva 4, Switzerland.

There are 10 prizes — five for the best hand-made QSL and five for the best printed QSL cards. ■

VK3RTV - Fast Scan Television Melbourne



Peter Cossins VK3BFG
14 Coleman Road, Wantima South 3152

VK3RTV is Melbourne's Broadband Amateur Television Repeater and is located high in the Dandenong Ranges, approximately 40 km from the city. The original licence for this repeater was granted on the 5th of September, 1978, and an experimental prototype was pressed into service shortly after, operating under supervision from the excellent VHF/UHF Frankston QTH of Les Jenkins VK3ZBJ.

Early in 1979 this prototype was moved to Box Hill College of Technical and Further Education using a unique omnidirectional quad array for an antenna built by Rod Letts VK3ZLW, Dave Luft VK3YMP and myself. Unfortunately the site proved to be only suitable for a limited coverage, but mobile experiments carried out by Rod, Dave and myself showed that the antenna design had merit for a complete 360 degree pattern if a more suitable location could be found. Shortly after these experiments, a prime mountain site became available through Brian Baker VK3HB, and it was decided to move VK3RTV as soon as a suitable antenna system could be designed and built to suit this new location. A small weekend task force headed by Les Jenkins and myself was formed and the manufacturing and testing facilities of Les' company, Microlink Pty. Ltd., was made available. From memory the task force comprised Rob Leversha VK3ZLJ, Rod Letts VK3ZLW, Col Fisher, then VK3YII, Dave Luft VK3YMP, Les Jenkins VK3ZBJ and myself.

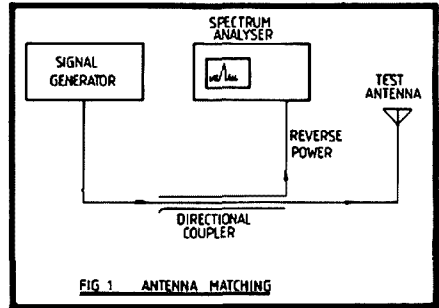
The group assembled on a Saturday morning at the factory with the intent of building and testing the antenna system within one day! An initial conference was held and discussion ensued on the radiation pattern required, desirable gain and how we could achieve this within the resources available. Since a 180 degree pattern would serve the Melbourne and Metropolitan area it was decided to construct an array of three element yagis for the input and output frequencies. Construction then immediately proceeded using an assembly line technique and the required number of radiators produced within a couple of hours. Each of the yagis had a

folded dipole driven element, with a balun to provide a coaxial feed—how do we interconnect all of these so that forward radiation from all of these will be in phase with a single feedpoint to a 50 ohm coaxial cable????

Les came up with the solution—why don't we connect each yagi directly with equal lengths of coaxial cable to a COMMON FEEDPOINT and then use a L-C matching network to transfer whatever impedance we have to 50 ohm resistive! We all set about cutting up lengths of cable and Les built the matching network from a couple of 15 pF trimmers and a hairpin loop of wire, electrically the same as can be found in Amateur Radio Handbooks for HF, but with a mechanical realisation so tiny that it fitted in a small Eddystone type metal box.

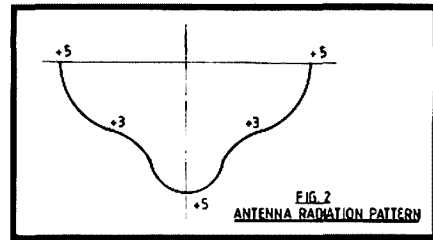
Now for the testing. Will we have a match to 50 ohms and, just as importantly, will the array radiate with the desired gain and omni pattern?

To set up the matching network we used a signal generator, directional coupler and spectrum analyser as shown in Fig. 1. After adjustment of the matching



network, the returned power from the antenna was greater than 40 dB below the reference forward level; a very satisfactory result.

To check the forward radiation we used a reference dipole with a signal generator driving the antenna and the spectrum analyser as a calibrated receiver. The yagi arrays achieved an approximate 180 degree pattern with a gain of 5 dB over the reference. Small minor lobes occurred with a gain of 3 dB as shown in Fig. 2— not a bad effort for a day's work!



The final installation occurred the following weekend with Rob Leversha climbing to the top of a 150 foot tower for about three hours while antenna and cable were hoisted by pulleys to their final resting place. Shortly after VK3RTV MK2 was in operation.

After a few months of operation, VK3RTV MK3 was installed, complete with a simple tone access control system and an improved receiver

This unit was also reasonably short lived and was replaced by VK3RTV MK4, which was based around a low level UHF to UHF translator with an I-F output/input of 38.9 MHz (European TV I-F) but still controlled by the simple tone access system of the previous model.

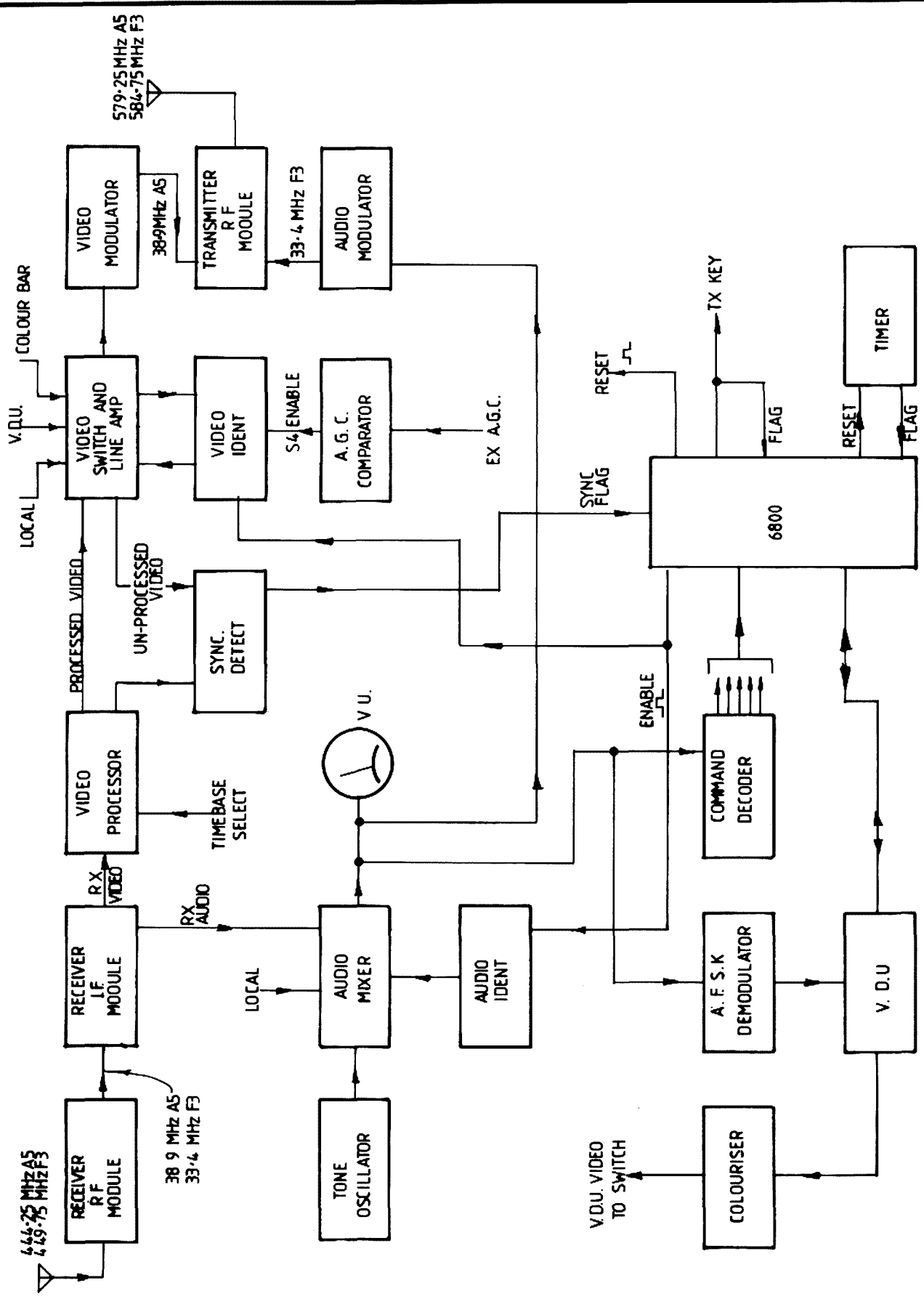


FIG 3 BLOCK DIAGRAM VK3RTV

In order to keep up with the Jones (the ever active VK5 group), VK3RTV MK5, complete with microprocessor control, internal VDU, standard telephone touch tone user access and improved video and audio mixing was commissioned into service during October 1981.

VK3RTV MK5

In the block diagram (Fig. 3), the UHF to UHF translator provides the receiver RF module and the transmitter RF module. The receiver RF module has a local oscillator injection of 483.15 MHz derived from a 40.2625 MHz reference and a mult. by 12 chain. Input frequencies of 444.25 A5 and 449.73 F3 are transposed to an I-F of 38.9 A5 and 33.4 F3 respectively. I-F amplification, I-F bandpass and group delay correction and RF and I-F AGC are all provided in this module. The maximum I-F output level from this module is 0 dBm (0.224V in 50 ohm), although the strongest amateur signal I have seen is -5 dBm at this point. It would take an increase of power much in excess of 5 dB to reach 0 dB reference as receiver AGC is in operation reducing the overall gain of the unit with of course the desired improvement in S/N.

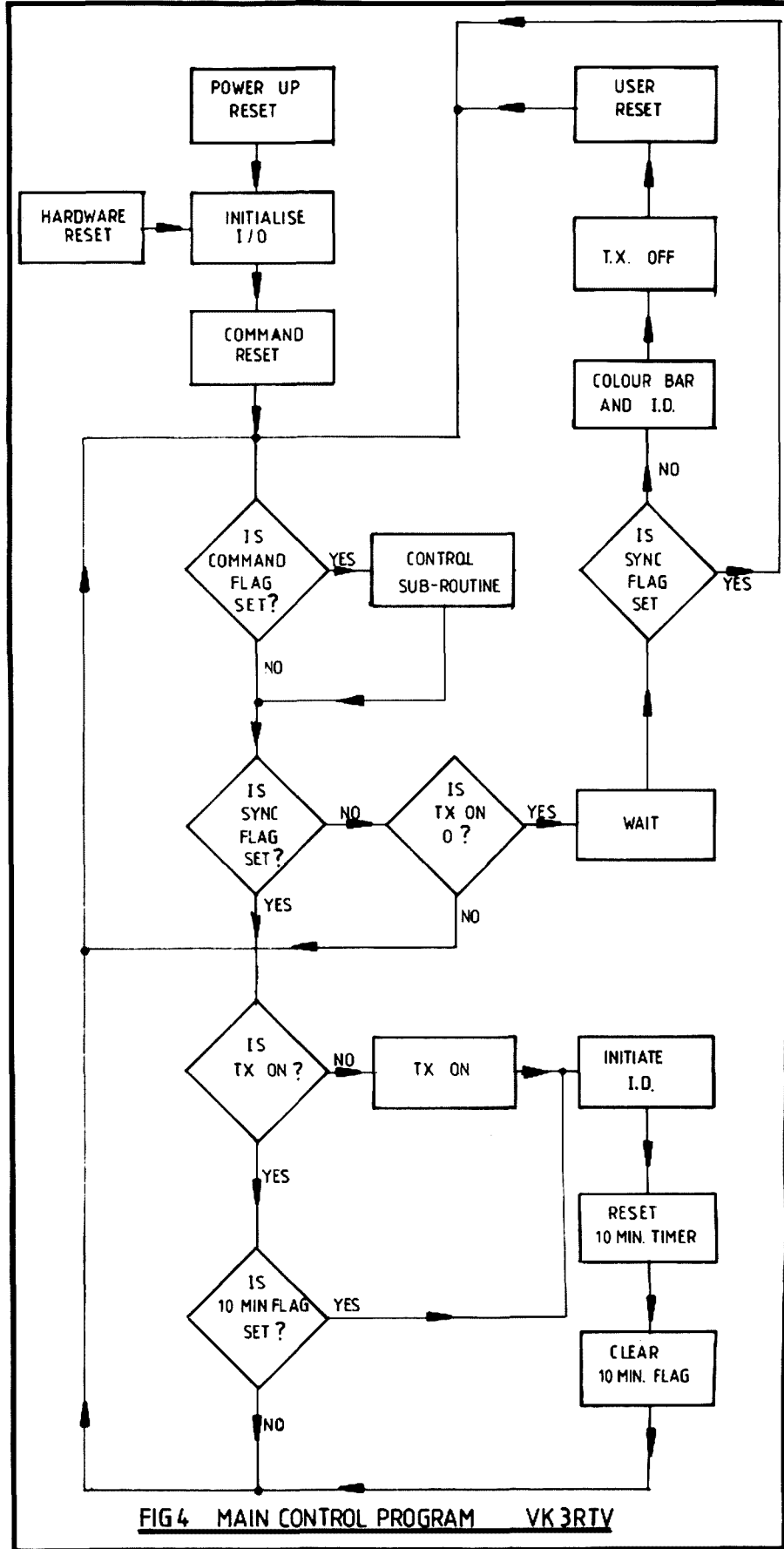


FIG 4 MAIN CONTROL PROGRAM VK 3RTV

The receiver I-F module is based around a modified Phillips K12 system with AGC and video and audio line drivers. The video level at this point is 1.5V composite and the audio 1V P-P.

The receiver audio output is fed to an audio mixer which has as its other inputs, audio ident, tone oscillator and local mic., the first three selected under the control of the microprocessor I/O. The output of the audio mixer drives the transmitter audio modulator, the command decoder and the Kansas City demodulator for the user VDU function.

The receiver video output is fed to a video stabilisation and processing amplifier which regenerates all synchronising pulses, luminance, chrominance and burst and recombines for an improved composite signal ready for modulation. This stabilised and regenerated signal is then fed to a video switch and line amplifier which has as its other inputs VDU, colour bar, video ident, and locale as before all inputs except locale under the control of the microprocessor I/O. The video ident has an AGC comparator on board which switches in an S4 report when the AGC voltage reaches a predetermined level. (Signal reports given for ATV range between S0 and S5, S5 being completely noise free.)

This facility is a left over from the MK4 control system and of course it is now possible to have an A-D converter on the AGC line and allow the processor to issue the complete range of signal reports—something for the future.

The output of the video line amplifier drives the video modulator. Unprocessed video is also passed to a sync. detect circuit which will only give an output if the incoming signal is properly video modulated. This output is called the sync. flag and is interpreted by the microprocessor as the signal to turn on the transmitter. Absence of this flag will cause the system to go into its "tail" routine.

The Audio Modulator is a 10.4278 MHz active crystal varicap circuit with a mult. by 36 producing an output frequency of 375.4 MHz and a deviation of 50 kHz. This is mixed with a local oscillator signal of 342 MHz for a final output frequency of 33.4 MHz and a deviation of 50 kHz.

The Video Modulator is crystal locked to 38.9 MHz, mixed with the output of the sound modulator and passed through a vestigial sideband filter. This combined signal with a vision carrier level of 0 dBm is fed to the transmitter module of the translator. This module has a crystal reference of 51.5125 MHz and a mult. by 12 chain with an output of 618.15 MHz. This is mixed with the modulated vision and sound I-F signal with a resultant output of 579.25 A5 and 584.75 F3. A series of linear amplifiers then provide an output of 10 watts to the antenna.

VK3RTV CONTROL AND COMMANDS

The control of this television repeater is performed by a 6800 microprocessor based system. This has automatic power up reset, manual and remote reset, decodes all com-

mand requests, "talks to the VDU", monitors all timing and responds to sync. flag status.

All functions of the repeater are related to the external 10 minute real time clock which is set and reset by the processor at the start and finish of each duty cycle. Video and audio ident are given every 10 minutes and at the start and finish of every transmission. A short tail is provided at the end of a user transmission to allow for break in after which the repeater comes up with colour bar and identification and drops out. User access is almost again immediately available but the real time clock will have been reset so the repeater will identify once more to signify the start of a new 10 minute period.

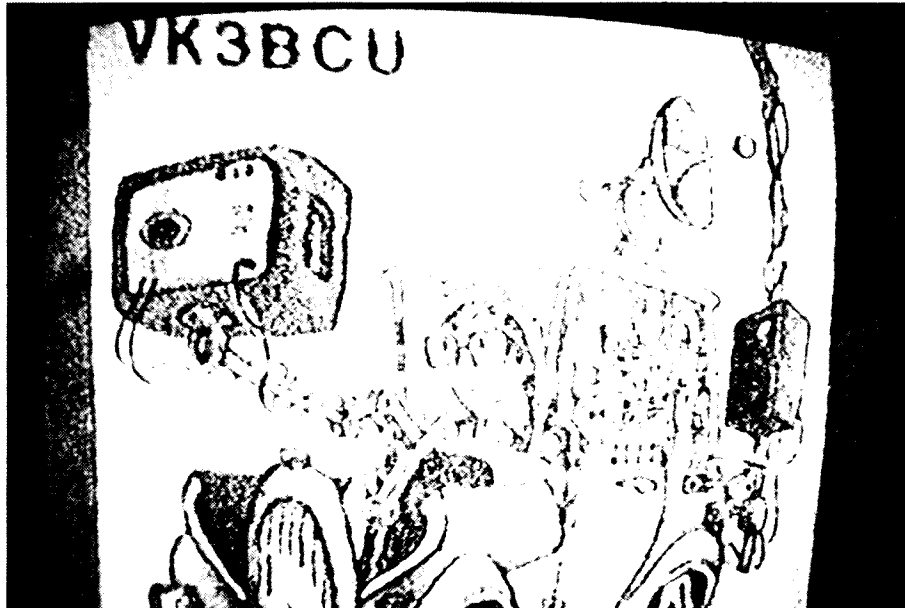
Fig. 4 shows the main control loop for the microprocessor, the control sub-routines really taking up most of the memory in the system ROM.

User commands currently available are:—

- TT0 — Colour Bar and Tone (10 min.).
- TT1 — User VDU (300 baud Kansas City, 20 min.).
- TT0.TT1 — Sync. Regenerator Time Constant.
- TT0.TT2 — VK3RTV Menu (describes operation and functions).
- TT1.TT2 — Visual ID and Signal Report.

There are a total of 14 commands available which leaves plenty of room for expansion, together with 20 I/O lines unused on board the processor, so again room for expansion.

Due to significant power line transients in the vicinity of VK3RTV and although some transient suppression has been provided in the power supply circuits, I decided to include a hardware reset circuit to be available by remote touch tone control. In retrospect this was a good move as it has saved me a number of trips up the hill just to press one button after the SEC has had a field day tap changing or whatever they do to upset VK3RTV. SEC voltage at VK3RTV has been measured as low as 180V at times and we have experimented with a couple of AC regulators to overcome this problem. We had one going very well for a couple of days but unfortunately it caught fire! Any donations in this area would be gratefully accepted. Talking of donations, VK3RTV is the most expensive amateur repeater operational in Australia (even more than John VK5RTV, Hi) and I would like to thank all amateurs who have constantly dived into their pockets to support this project. A special thanks also must go to all those friends who have assisted me and to Mr. Brian Baker VK3HB, who has quietly worked behind the scenes to maintain support for the project. ■



A typical picture from VK3RTV

Photo by VK3UV



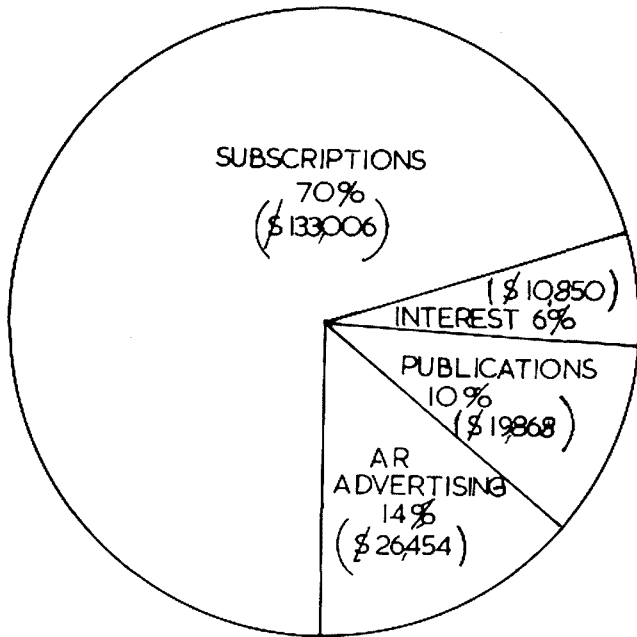
When You Buy Equipment

Say You Saw It In

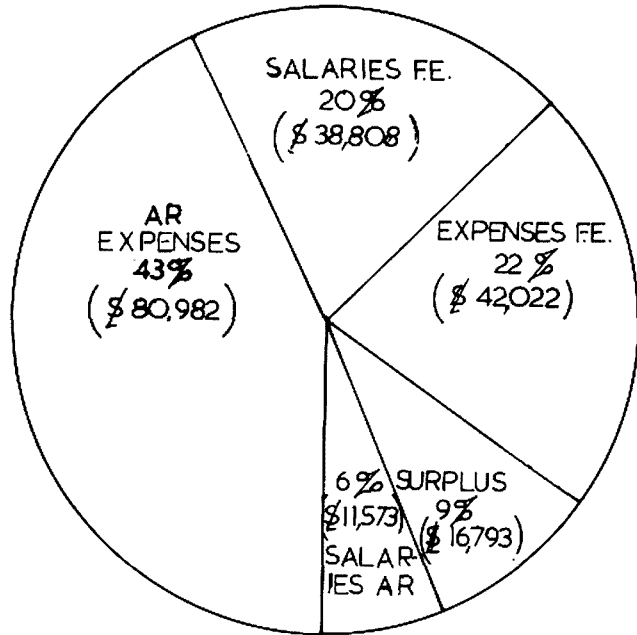


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NEW



TRY THIS with the Technical Editors

If you have ever wondered how you might reduce the diameter of aluminium tubing, but weren't sure how, then here is the answer.

There are "tube cutters" on the market which use a rolling knife to cut copper, aluminium and even steel tubing. These use a cylindrical cutter and in the less expensive versions the tool is rotated around the tube while a handle is turned to keep pressure on the cutter as it cuts through the tubing. If the cutter or knife is replaced with a roller of different form then the tool may be used to manipulate the tube to reduce its diameter by appropriate amounts at various places.

The most suitable types of cutter are "RIGID" and those consisting of a pair of

rollers which press the cutter into the tube. Cheap tools are of little use because the body will fracture even in normal use.

Fig. 1 shows a sketch of a tool and profiles of three different inserts.

This forms a handy tool for reducing the inner diameter of the outer tube in a telescoping pair or for locking the inner tube in position. The inserts or manipulating tools are easily made from mild steel in a small lathe.

Syd VK3ASC ■

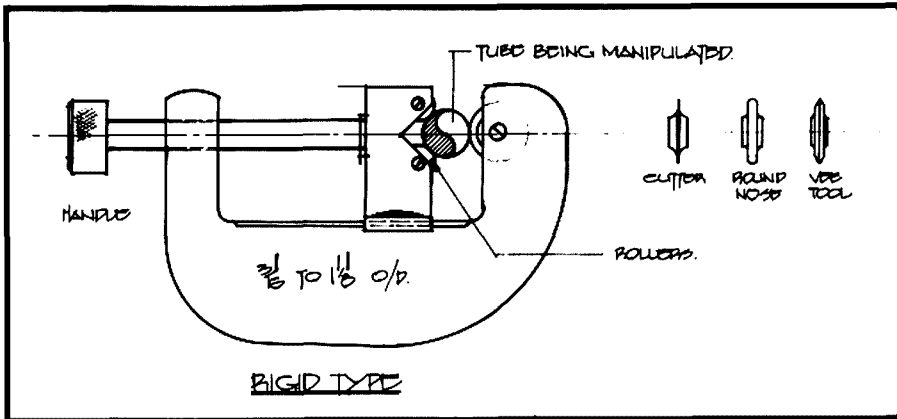


FIG. 1: Tube Cutter with manipulating tools

Constructional Aid

J. Swan VK2BQS
21 Tungarra Road, Girraween, 2145

Have you ever wasted much time sorting out small components only to have a repeat performance while assembling the project?

Here is a simple sorting and storage aid:

PARTS LIST

- 1 ice-cream container (empty).
- 1 piece of strong paper larger than container top. (Back of AR envelope works well.)
- Some sellotape.

METHOD

Place paper on top of container and by pressing hard imprint the shape on the paper.

Cut around outline allowing about 20mm margin. Cut in from edge of paper to outline at about 25mm distance to form tabs. (Corners of square containers need closer spacing.) Bend all tabs at right angles to form a cap for the container.

Fasten cap to container by liberal use of sticky tape. Run strips of tape across paper to reinforce and to serve as line markers.

Using a very sharp small kitchen knife make a series of small slots in the paper between the guide lines. Number of slots is related to size of project.

Mark each slot as appropriate; e.g., 1-50, 101-150, 202-250 if working off numbered parts list, or by component values if working off diagrams.

USAGE

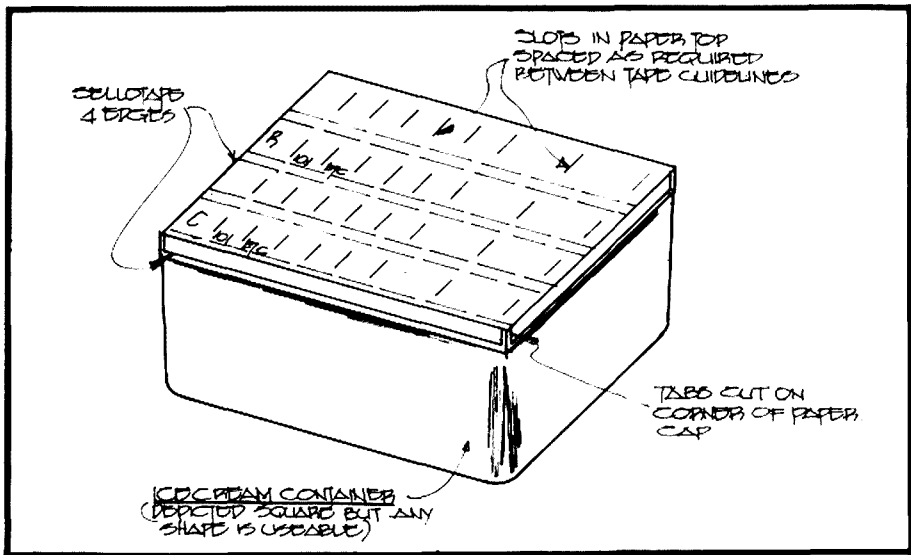
When extracting components from the junk-box or from that plastic bag beloved by retailers, place each item in its appropriate slot.

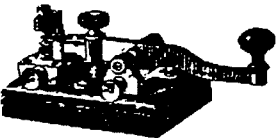
Assembly is simplified as each item is readily identified, can be easily selected and progress can be continuously monitored. Resistors, capacitors, transistors, diodes and trimmers all can be held in the slots and the unit is reusable if markings are adjusted. ■

Eastern Bloc Communications

From Amateur Radio News Service Bulletin
October 1981

Anyone who operates CW on the HF bands is aware that many amateurs in Eastern Bloc countries are using home-built rigs. The signals, in many cases, are an absolute disgrace! I cannot argue the point that it is just as easy to produce a T9 note as it is a T3. The fact of the matter is that at least these amateurs are building, and they are experimenting. Presumably the "State" ensures that components are available. I wonder if our political leaders are aware of this vast pool of skilled operator/technicians that is being developed, or if amateur radio is considered a sport rather than a hobby. ■





CW – Poetic Abbreviations

Marshall Emm VK2DXP
Box 362, Goulburn 2580

Telegram boy to Postmaster — Hand Key to Telex, with a poetic masterpiece which will be appreciated by all who enjoy morse code.

The Goulburn Amateur Radio Society was honoured to be addressed recently by Mr. Don Whelan, the Postmaster at Goulburn. Mr. Whelan worked his way up in the Post Office from the lowly status of telegram delivery boy at age 15, 40 years ago in Kapunda, SA.

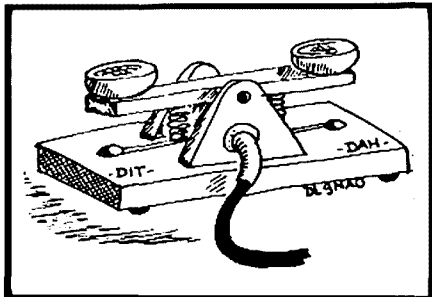
Mr. Whelan served as a telegraphist for many years and occasionally still administers Morse code examinations to amateur candidates unable to travel to Sydney or Canberra.

His address included many interesting anecdotes from his own experience, and although he has never had anything much to do with radio, he was delighted to learn that some of the old traditions are still alive and well in the amateur service.

Mr. Whelan said that manual telegraphy was in use in NSW until 1959, when the TRESS machine (similar to a TELEX) was introduced. He had never seen the early model teletypes which produced a gummed tape, which was cut up and stuck on a telegram form by the operator. These predecessors of the TRESS machine resulted in the obsolescence of manual telegraphy in the United States when they were introduced in the 1930s'.

When he started work as a messenger, one had to be able to send and receive ten 20-word messages in 15 minutes (about 13 w.p.m.) to qualify as a beginning telegraphist; most traffic was handled at 20 w.p.m. Liberal use of abbreviations (called "cutting down") increased the effective speed considerably.

Abbreviations are, of course, widely used in CW working, but they are only useful as long as both parties understand them. Mr. Whelan offered the poem below as an example of this difficulty. It was written by an old-time telegraphist by the name of "Spru" Spruhan, who was evidently as qualified for poetry as he was for Morse!



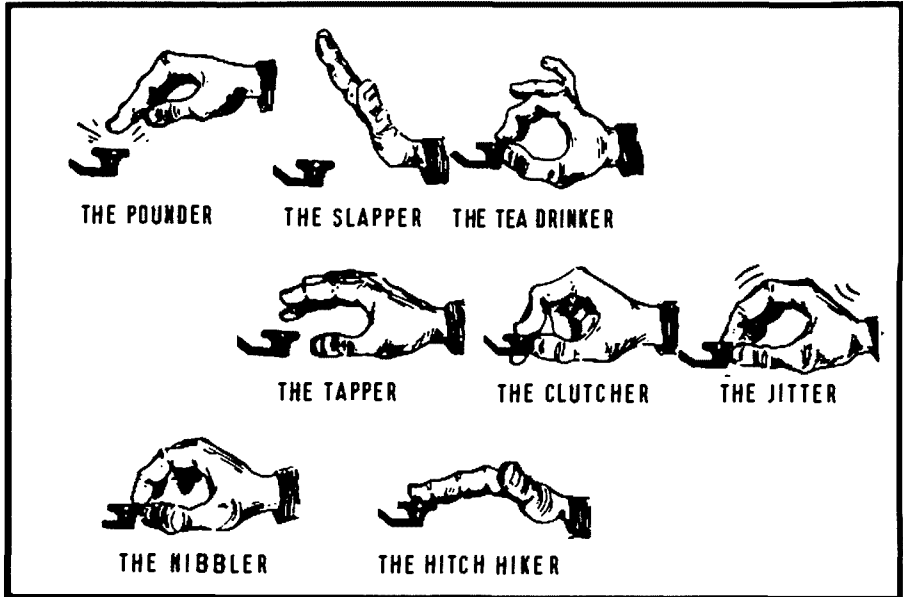
The OM-XYL sharing key
from cq-DL 2/82

Coming Round the Bend

By "Spru" Spruhan

I well remember Charlie Teede,
Who used to work the races;
No need, indeed, to ask for speed,
He'd pace it with the pacers.
Lord help the man who "broke" him once
Or questioned his "creations";
On him a flood of scorn was turned,
The atmosphere with brimstone burned,
And Pitman, green with envy, squirmed
At his abbreviations . . .
TE FIELD GOT WL AWA TO TI
& AS TY SETTLED DWN
THE SHICER 1ST T BK TE LI
WS FLWD BI JO BROWN.
IN CLOSE PROXIM WS TIRED TIM,
TN CME ARBRATN,
BHND TE BUNCH WS CNTR LUNCH,
GD LUCK & HI TAXATN.
TY WHIZZED ALNG (and so did Charles)
WTOUT TE LEAST CESSATN.
C R T B TE TOPWT JUMPED
& GOT ON TRMS WI SHICR,
WO TN & TRE HS BUNDL DUMPD
WH LABLD HM A TWICER.
I scrambled after Charlie
Like a trailer round a bend,
Then gave OK — but queried:
C R T B U SEND.

NOW WHAT IS THAT IN AID OF?
ENLARGE A BIT MY FRIEND.
The sounder nearly hit the roof
As Charlie scorched the line.
U ORT T B ON TE RABTPROOF
OR UP AT DOODLEKINE.
CHASIN PODDIES RND TE YD
SHD B UR CHF PASTIME.
T TNK U CDNT WRK IT OUT
IT NRLY MKES ME SIK.
ANI OLE GIN OR ROUSABT
CD WRITE IT W A STICK.
FANCI A MAN WO CALLS HMSF
A TGST ASKG TT
A RECORD O S VACUUM
IS LOCATED NEATH UR HAT
D U WANT IT IN OILS BI LAMBERT?
OR CARVD ON A MARBL STONE?
OLE WINJA MORTILL CD TKE IT
& UD NVR HR A MOAN,
NOT SPELT OUT LI IVE DUN FR U
BT CUT DOWN T TE BONE.
WL I MST SA ITS TE BST DSPLA
OF IGNRCE IVE HRD,
O ALL TE SQUTRS IN W A
UR CRTNLI TE BIRD
& ANI HRSH REMKS IVE MIST
TY ALL CN B INFERD.
C R T B, ITS KNOWN BI ROTE,
WT WD U HA ME SND?
ITS CMG RND TE BND, U GOAT
COMING ROUND THE BEND!



KEYING STYLES — from Rad. Comm., March, 1982.

EQUIPMENT REVIEW

A Review of the Advanced Electronic Applications Morse Memory Keyer Model CK-1

Bruce McKenzie VK3VF
The Esplanade, Mt. Martha



Although the Advanced Electronic Applications keyer model CK-1 has been designed for the serious CW operator, I am inclined to think that anyone mildly interested in CW operation cannot help but be intrigued by the versatility of this keyer. It does appear to meet any situation the operator may require these days. All functions with the exception of memory load and send (a slide switch) and sidetone volume are controlled by appropriate combinations of keypad buttons. Memorising these combinations does take practice but it is soon realised that there is a pattern of operation formed by the keypad buttons.

GENERAL

SPEED CHANGE

Two methods of speed control are available, variable and preset. Two preset speeds from 2 w.p.m. to 99 w.p.m. can be stored and recalled, while an infinitely variable speed, up and down, is available also.

SIDETONE

Whilst the sidetone is set for 500 Hz when the keyer is at first switched on, it is variable over a wide range, by pressing the appropriate keys and holding until the desired frequency is reached.

AUTOMATIC OR SEMI-AUTOMATIC OPERATION

When the keyer is at first switched on, it is set for automatic iambic operation, but the keyer may be operated in the semi-automatic mode if required.

WEIGHTING

Apart from the normal dot equal to the intra character space length (dot space ratio of 1.0) the dot space ratio can be varied from 0.5 to 1.5.

DOT DASH MEMORIES

Because either of the dot or dash memories can be disabled at will, using a double paddle key provides a range of short cuts in sending various characters with a minimum of key movement.

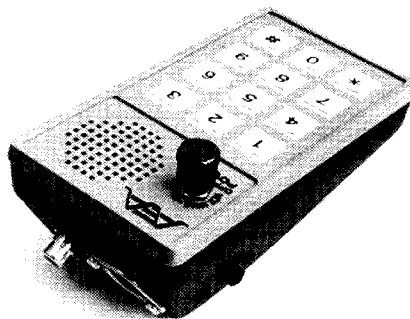
TRANSMITTER TUNING

To allow transmitter tuning, the keyer's keying transistor can be actuated and on completion of tuning, at a touch of the key, the keyer is disabled.

MEMORY OPERATION

MEMORY LOCATIONS

The CK-1 has ten separate variable length memory locations. The total memory length is about 500 characters (the actual length is dependent on the length of characters and the length and number of pauses, etc.), which may be divided into the ten locations in any order. Each memory location length is automatically adjusted during message loading.



MEMORY MESSAGE LOAD

Two methods of memory loading are available, real time loading and automatic character and word space loading. In both modes, memory loading does not begin until the first character is started. This prevents an undesirable pause at the beginning of the message play back.

MEMORY ERASE

Operation of the on/off switch erases the entire memory, or individual memory locations can be selected and erased by moving the memory load/send switch to the load position.

EXTRA WORD OR CHARACTER SPACES

Insertion of a word or character space in real time memory loading will stop the real time load of a pause, the next keyed character will restart pause loading.

MEMORY FULL WARNING

When the memory is full, the CW sidetone pitch will decrease. At this point, loading is automatically terminated. If further loading is desired, it is then necessary to erase one of the other messages.

MEMORY SEND OPERATION

SENDING A MESSAGE

Any one of the ten loaded messages may be sent as selected. These messages can be interrupted at any time and the key operated to insert additional information, i.e. call signs and contest numbers.

EDIT CAPABILITY

Messages in memory may have additions or deletions made from a selected point to the end of that message location.

CONCLUSION

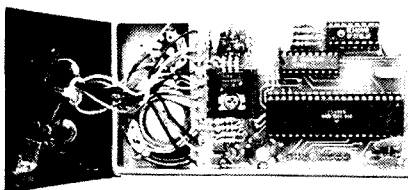
The purchaser must provide his own key and 12 volt source to operate this keyer. It is felt though, that most amateurs do already possess a favourite key, and these days 12 volts DC is readily available from existing equipment.

Mounting the 12 volt supply jack at the rear of the instrument with the other connectors, instead of at the side, would be an improvement.

This test unit was made available from Hy-Tech Distributors, Building 51, Archerfield, Qld. 4108. ■



QSP



KEEP THESE OUT OF REACH

The button-sized mercury batteries often used in cameras, watches, etc., can pose a danger to small children. If a small tot pops the battery in its mouth and accidentally swallows it, it could prove fatal.

Each battery contains about 2 grams of mercuric oxide — nearly twice the lethal dose for a child. The battery cases may deteriorate rapidly in stomach acids.—WORLD RADIO, February 1982. ■



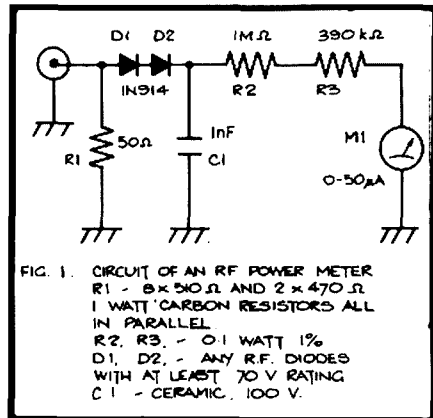
NOVICE NOTES

Edited by Ron Cook VK3AFW
7 Dallas Avenue, Oakleigh 3166

Novice Power Meter

RF power meters for HF operation are easy to build. Every novice needs one some time, so why not try this one. Its cost should not be more than \$10. If you have a small "junk" box or are a canny frequenter of second-hand or disposal shops carrying electronic lines, then it will cost much less.

The circuit is shown in Fig. 1. R1 is a 10 watt low-reactance 50 ohm dummy load resistor. Diode D1 and C1 are a peak rectifier and R2 and R3 are range-setting resistors for meter M1 to in combination indicate peak RF voltage.



If a 10 watt carrier is applied D1 will charge up C1 to a peak voltage V_p . We can calculate V_p as follows:—

$$\text{Power} = V^2/R1$$

Where V is the r.m.s. voltage.

As for a sine wave $V_p = 1.41V$ we get:—

$$\text{Power} = V_p^2/2R1$$

for 10 watts and 50 ohms.

Then $V_p = 31.6$ volts.

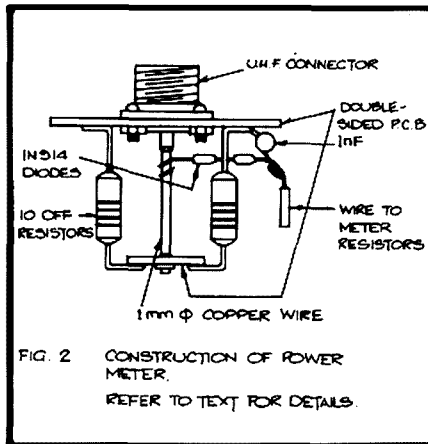
For the values of R2 and R3 shown the 50 uA meter would read $31.6/1.39M = 22.8$ uA.

The component values chosen give 50 uA for 50 watts. Various points can be calculated as shown or the chart in Fig. 3 can be used. Use the CW curve: more about this later.

CONSTRUCTION

A small case is required to house the meter. The micro-ammeter should be fitted to the front panel. A piece of double-sided PCB material about 60 mm square can be used to mount a UHF connector, as shown in Fig. 2.

Now that winter is upon us, perhaps you have a spare rainy afternoon. Why not use it to build a useful instrument.



A 1mm diameter wire about 30 mm long should then be soldered to the connector's inner pin. A piece of PCB material 20 mm square can be drilled in the centre and soldered on as shown. Next fit the diode, and then the 10 resistors. The capacitor and the resistors and meter can be connected prior to fixing the assembly to the back of the case.

If the PCB is first cleaned with steel wool it will solder more easily. After fitting the connector and the second piece of PCB a light spray with clear metal lacquer will prevent tarnishing. Let the spray dry for an hour before soldering to the PCB. The heat of the iron will break through the lacquer.

ACCURACY

Better accuracy, particularly at lower powers, will be obtained if a hot carrier diode or a germanium RF detector diode are used for D1, D2. This is because these diodes require less voltage to conduct in the forward direction. In practice at 10 watts or more at HF the error is small if 1N914 diodes are used. The diode must have a rating of at least 70 volts for 50 watts. A single diode of double this rating would be even better.

The values for R2 and R3 were selected from readily available values: they are nominally 1.7 per cent low but as the meter movement accuracy is probably worse than 3 per cent and an overall accuracy of 10 per cent is as good as could be expected for this type of instrument, then more accurate adjustment does not seem worthwhile. Also because of the diode drop of perhaps 0.5V the values of R2, R3 could be a little less than nominal for best accuracy.

For powers giving less than 20 per cent of full deflection the meter reading will be progressively less accurate.

THROUGH-LINE CONNECTION

If your 50 ohm cable VSWR is less than 1.1:1 then the composite resistor R1 may be omitted and a 1 mH RFC used instead. This ensures a DC return for the detector circuit. Two UHF connectors could be used and their centre pins linked with a short length of 1 mm wire. If the VSWR exceeds 1.1:1 the meter error will exceed 10 per cent.

In use, one connector may be designated for connection to the aerial and the other for connection to the transmitter.

CONVERSION TO A PEP READING METER

If the time constant (discharge time to 37 per cent of initial value) of C1 shunted by R2 + R3 is of the order of a second, then the meter will read PEP. This requires a capacitor of 0.68 uF. Unfortunately, the effort of charging this capacitor in one quarter of a cycle of RF at 28 MHz is beyond the diodes. A compromise in the type of diode and the time constant of the circuit, taking into account the time constant of the meter may work. Some commercial circuits have done this. I chose one second as an all encompassing figure for speech and a wide variety of meters.

THERE IS ANOTHER WAY

A 100 pF capacitor could be used for C1. The ripple would be greater than for 1000 pF but still acceptable. The discharge time constant is now 0.14 msec. Hence the meter will read peak RF, while the RF is steady. If voice modulation is applied then the meter will try to follow the rectified RF, which varies at the audio rate. Because of the micro-ammeter's inertia there will be a reduced indication as the meter tries to show the average value — the DC component.

If a two-tone signal is applied we have a steady state condition so the meter inertia does not matter. The meter will show the DC component or average value of the rectified signal as shown in Fig. 4. The power indication will be 40.5 per cent of the peak so if the indicated power is multiplied by 2.47 we can read PEP on our \$10 special. These figures are arrived at on the basis of the average value for a sine wave being 63.7 per cent of the peak.

For those who prefer to avoid the calculations, a second curve has been given for Fig. 3. Alternatively, the indicated watts can be multiplied by 2.47 to obtain PEP.

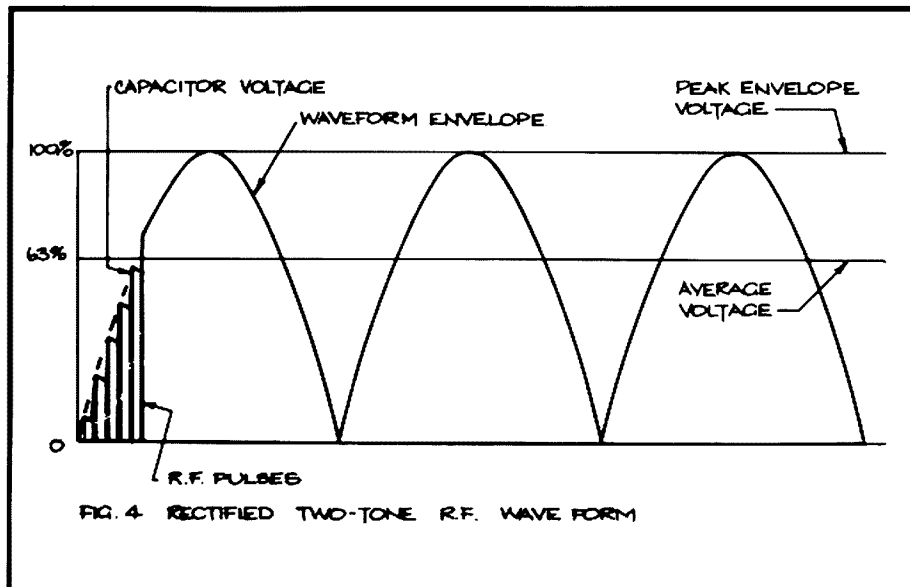
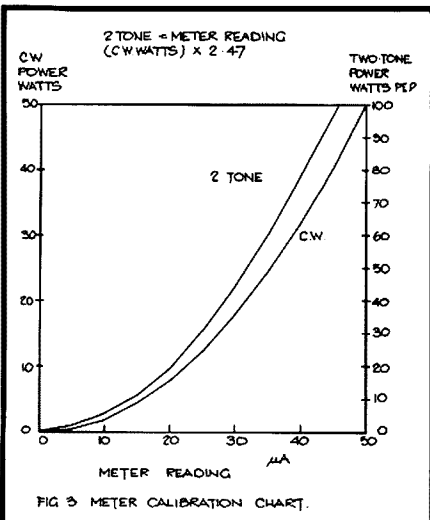


FIG. 4: The first part of the drawing shows C1 charging to the peak RF voltage and slowly discharging between rectified RF half cycles. Charging takes place over most of the first quarter cycle. Because there are thousands of RF pulses in each audio half sine the voltage actually seems to smoothly follow the waveform envelope.

Note that the PEP values so obtained are correct only for two equal amplitude tones which are not harmonically related. The value of C1 must be around 100 pF otherwise the troughs in the rectified envelope of Fig. 4 will start to fill in and a larger reading will be given. ■



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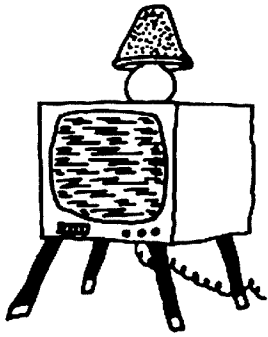
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NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ
38 Wattle Drive, Watoonia 3087

This month's column has again been prepared by a guest writer, Hans Ruckert VK2AOU. This excellent article explains the purpose of filters and construction details for the home experimenter.

High and Low Pass Filters

Hans Ruckert VK2AOU

HIGH PASS FILTERS

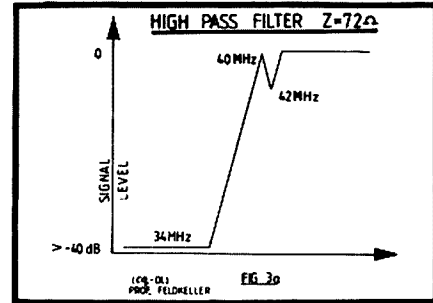
There are mainly three applications for high pass filters:—

- To improve the selectivity of television receivers by reducing front-end overload.
- To reduce intermodulation products when stations are in close proximity on adjacent bands.

(c) In split filters (combination high and low pass).

TV HIGH PASS FILTERS

In the case of TV high pass filters, one needs low attenuation from 45 MHz upwards and high attenuation below 45 MHz. For frequencies below 28 MHz the average filter should display around 40 dB of attenuation. The steepness of the cut-off slope depends on the design, the components and the layout which avoids stray coupling. Figs. 1 and 3 show typical component values for two types of high pass filter. For receiver applications, small low



voltage ceramic capacitors may be used. Leads should be kept as short as possible — only 10 mm of wire can have a significant effect on the overall response of the filter. Where some leads cannot be kept short, copper foil 10 mm wide may be soldered in parallel with these wires to reduce the stray inductance.

The filter coils should be kept at least one coil diameter away from the shielding case, and the coil should be placed at right-angles to each other. If shielding between sections is not used then reasonable separation must be employed in order to reduce stray coupling, which would reduce the overall effectiveness of the filter. The filter and shielding can only be fully effective if the shielding is effectively earthed and if the TV chassis is also at zero RF potential.

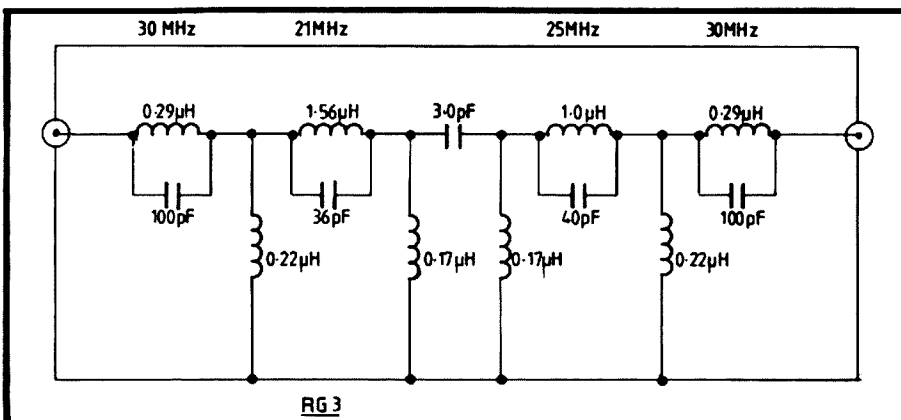
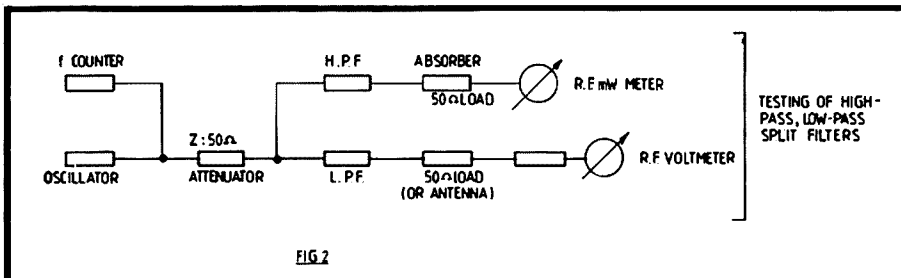
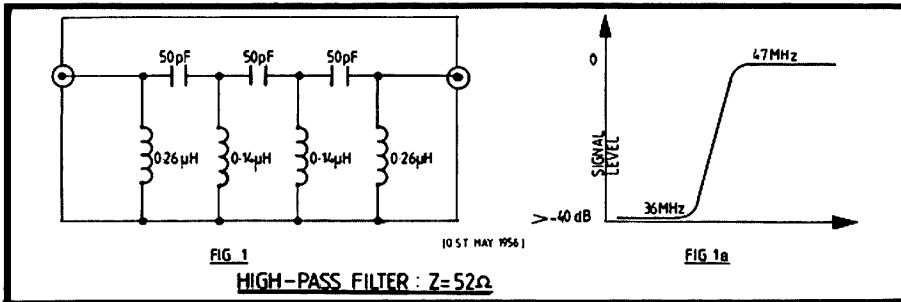
In some television receivers we find printed circuit boards in a narrow metal frame, interconnected by long thin earth wires and going to tuner controls — these hardly deserve to be called "a chassis". This design often considerably reduces the effectiveness of high pass filters.

Response curves for the two filters are shown in Figs. 1(a) and 3(a), when measurements are taken using test circuit Fig. 2. The test circuit shows that the filter input and output terminals are connected to 50 ohm matching resistors; without these matching resistors the response curve would be incorrectly displayed. The input and output of these filters are intended to be connected to 50-70 ohm coaxial cable.

Graphics and formulae to determine component values for other filters can be found in QST May 1956 and 1968, the ARRL Handbook, also many other publications.

LOW PASS FILTERS

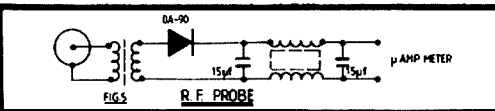
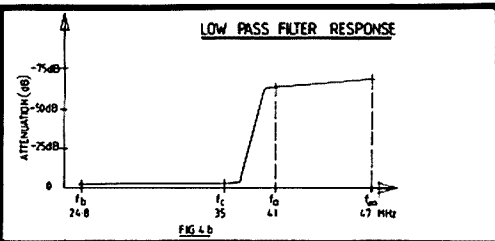
Low pass filters are intended to allow all in-band amateur HF signals to pass be-



tween the transmitter and the antenna with the minimum of attenuation. Higher frequencies, which may contain transmitter harmonics, will be attenuated. The filter described offers about 60 dB of attenuation for frequencies above 41 MHz, but very little attenuation for frequencies below 33 MHz (coils do not get warm). Old-timers will remember that the writer described this filter in detail in AR November 1955.

The selected cut-off frequency was 35 MHz. Substantial attenuation can be expected from 41 MHz upwards, but it depends mainly on keeping the self reson-

FIG. 4 (a): Low Pass Filter



$$m = \sqrt{1 - \left(\frac{f_c}{f_{\infty}}\right)^2}, \quad L_1 = m \times L_k, \quad L_2 = \frac{1 - m^2}{2m} \times L_k$$

$$L_k = \frac{R}{\pi \times f_c}, \quad C_k = \frac{1}{\pi \times f_c \times R}, \quad C_2 = \frac{1}{2} m \times C_k$$

L_k, L_1, L_2 in Henry, C in Farad, $f_c, f_a, f_b, f_{\infty}$ in Hz

$$f_a = \frac{1}{2} (f_c + f_{\infty}), \quad f_{\infty} = 2f_a - f_c, \quad f_b = \sqrt{\frac{25330}{L_k \times \frac{1}{2} C_k}}$$

FIGURE 6

**LOW PASS FILTER (CIRCUIT AS IN FIG 4a)
SAMPLE RESULTS FILTER COMPONENTS & FREQUENCIES**

		CASE 1	CASE 2	
f_c	MHz	32	35	
f_{∞}	MHz	45	47	
M		0.7	0.667	
R	Ω	52	52	
LK	μH	0.517	0.473	
L1	μH	0.36	0.315	
L2	μH	0.188	0.197	
CK	pF	191	175	
C2	pF	67	58.3	
f_a	MHz	38.5	41	
f_b	MHz	22.7	24.8	
MHz WITH	L1	26.5	27.8	18 mm LONG 7 TURNS 12 mm I.D.
100 pF	L2	37	36	19 mm LONG 7 TURNS 9 mm I.D.
PARALLEL	LK	22	23	24 mm LONG 11 TURNS 12 mm I.D.
FOR COIL ADJUSTMENT WITH	G D D			18 mm Cu WIRE

ance (inductance) of the capacitors out of the designed attenuation range to avoid holes in the frequency rejection band — those spots where transmitter harmonics may show up.

Some commercial filters have been very disappointing in this regard. Fig. 4(a) shows the filter circuit and indicates the shielding positions. Fig. 4(b) represents the expected response curve. The formulae table shows the frequencies and component values for two filters. The coils can be adjusted by placing an accurate 100 pF capacitor in parallel with the coils and checking the resonant frequency of each coil with a GDO. Depending on lead lengths, coils may be \pm one turn. The filter must have coaxial fittings and should be placed as close to the transmitter as possible. The ceramic capacitors should be of the NPO temperature coefficient type and should be able to stand at least 200 volts of RF energy.

Perhaps we should remember that any filter when fitted to the transmitter cures the problem — means the transmitter is at fault. AND any filter which, when fitted to the TV receiver cures the problem, means that the television receiver is at fault. ■

EMC

(Electro Magnetic Compatibility)

If radio frequency Interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO
VK3QQ,
Federal EMC Co-ordinator, QTHR.

HOW'S DX



Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138

With the quiet, unceremoniously announced sharp increase in the cost of postage, which was in the order of 25 per cent to foreign countries recently, one has to think twice about sending a QSL card via the direct route. Possibly the work by the volunteers that man the QSL Bureaux in this country is going to be dramatically increased and the unurged labour which allows them to function is going to be stretched to the limits.

Whether you are a seasoned user of the service or a newcomer YOU CAN ASSIST by enquiring from them as to their requirements and abiding by their wishes so that their arduous task is made just that little easier.

WIA members enjoy a first class service which is equal to any in the world and the cards DO reach their intended destination even though some will say it takes a long time. Sure it does take longer than via the direct route but if you QSL 100 per cent and weigh up the cost of the number of QSOs that you will QSL each year (include postage, envelopes and return payment whether it is IRCs or "greenies") the savings that you have made will be quite staggering, even after if you must have subtracted membership fees, then you receive all the other benefits that the Institute provides as a bonus.

DXer, "Ragchewer", Experimenter or SWL the Institute since its inception has achieved in collaboration with similar Societies throughout the world most of the privileges that you now enjoy and have probably accepted as a way of life but it needs support by having a majority membership of licences so that we may retain these standards and update them in step with technological advancements in this, the 20th century.

CONGRATS

Well known DXer John VK6AJW, according to my reading of cq-DL, has won the Oceania section of the 1981 WAEDC (European DX Contest) with a score of 235,872 points. Well done, John, and nice to know VK shared some of the honours.



LAST CHANCE

Anyone who has worked A6XF, A6XR, A6XT, MP4TEE and P29LS and is still awaiting a card or would desire one have until the 31st December, 1982, to request confirmation as Tom G3CHP is going to destroy the logs. Tom, that is sacrilege.



Two multi-coloured cards direct from CRSA



BY1PK

中国无线电运动协会业务部

BY QSLs

Quick turn around QSLs from BY1PK are being received by the operators who have had the patience to track, QSO and log this illusive station and follow the operators' instructions with regard to QSLing. The card, as you saw on page 26 of AR last month, is an extremely well designed multi-coloured card which any amateur would be proud to exhibit and contrary to discussions heard around the bands

from QSO to receipt of the card plus being sent on to this QTH was in the order of three weeks. The correct address for the diligent is: Amateur Radio Station BY1PK, Chinese Radio Sports Association, PO Box 6106, Beijing, Peoples Republic of China.

This PO Box is going to be overworked because of the activity from the legitimate station and the "CLOWNS" who are signing the same call sign. QSL the lot (one VK worked three different BY1PK's and is hoping that the genuine will QSL promptly). It is hoped that they have not got to go to the trouble and expense of replying with the phrase "Not in the log OM" too often as the true spirit of amateur radio will be impaired.

MELLISH REEF

VK9ZR Mellish Reef was reactivated in early May and proved it is still a much wanted country, as the group had knocked over some 12,000 contacts by the end of the third day of operation.

In a short QSO with Harry VK2BJL, one got the impression that they were very tired but had a smooth trip out to the Reef, however they were very disillusioned by the sight of many dead birds and much of the vegetation that was "flattened" apparently by a cyclone that had gone through that area just prior to their arrival.

Harry's thoughts were that it would take many years for it to get back into the shape he remembered from the previous visit. Harry wishes the QSL information for those requiring a card to be passed on to the readers of this column.

The QSL QTH for ALL VK9ZR contacts, including the stint at Willis Island on the return trip, is: Mr. H. Meade VK2BJL, PO Box 85, Round Corner 2158, NSW.

NEW CALL SIGN

Yet another station that everyone will be clamouring to work will be 4U1VIC.

Will it be a new country? Will it be the country that is to replace VS9K as number 319? The multitude on the bands will make up their own minds before the operation starts so to help you here are the facts.

The Vienna International Amateur Club, whose members are amateurs working with the various UN agencies headquartered in Vienna, has received permission to operate an amateur station with the special call 4U1VIC. Unfortunately, no location has been given for the transmitter which could be the key for the decision makers.

Hear them first, then WORK them and QSL to VIRIC, PO Box 200, A - 1400, Vienna, Austria. They hope to be on the bands within a few weeks. Good luck and good operating should bring results.

QSLs

Do you worry about ALL those QSLs you have to process? Well think of the staff at the DARC QSL Bureau as they handled some 7,000,000 cards in 1981, that is in the order of some 32,000 per working day. Quite an effort really, and how many trees were used to make up that amount of pasteboard?

FIFTY YEARS

Trinidad and Tobago is celebrating 50 years of amateur radio, hence the 6Y50 prefix used by participating operators. This prefix will be available for the rest of the year.

Another new prefix which is much sought after is 4D and it has been issued by the Philippine authorities to celebrate the 50th year of PARA (Philippines Amateur Radio Association).

PREFIX CHANGE

It is getting harder and harder to catch up with some administrative ideas and the changing of prefixes. The latest would probably be Bahrain, who have deleted the "X" and replaced it with the figure 2. So now one has to look for A92 instead of the familiar A9X. The suffixes will remain the same way by all accounts on last reports.

SPECIAL PREFIX

RX7 is a special prefix being used to celebrate the Kazakh Republic's 250th alliance in the USSR. All cards via Box 88, Moscow, for the special card that will be sent.

5H3AP

If you have worked 5H3AP since August 1977 and are still awaiting a card your worries are over as you will not be receiv-

ing one. The rightful owner of the call left Tanzania at that time, returning to the States to enjoy his retirement, but someone has and is still illegally using the call.

TOP BAND

RADIO COMMUNICATION has given Mike VK6HD's operating habits on 160 metres in a recent issue (hope this opens up new horizons, Mike) and they also mention that amateurs in Region 1 are no longer permitted the use of 1.800 to 1.810 MHz and in due course 1.830 to 1.850 MHz will be exclusive to the amateur service. JA amateurs will be using 1.810 to 1.825 MHz shortly, presently being allowed 1.907.5-1.912.5 MHz.

SM operators have been allocated 1.830-1.845 MHz for CW operation. Power output 10W maximum.

ACTIVITY

Listen for activity from UA1PAM on 20m SSB and CW, 5R8AL on 15m SSB, JA1DNG/YI on 15m SSB and CW and ZD9BV (QSLs arriving promptly in VK courtesy W4FRU) 10, 15 and 20m at odd times, and will be joined by other calls ZD9BW and ZD9YL probably late July or early August.

ITU VK6 STYLE

Being able to use the special suffix ITU like a number of other countries do on ITU, Communications Day became quite a challenge to some keen VK6 DXers. The call VK6ITU was secured with the co-operation of DOC for the appropriate day (17th May) and it was shared by both Novice and Full privileged licensees alike, however the propagation was not kind and only some 500 stations were logged on 40 through 10 metres for the 24 hour period.

RETIRING

Well known Net Controller, Percy VK3PA, "retired" on the last Friday of June after some ten years as being the anchor-man of the International Pacific DX Net.

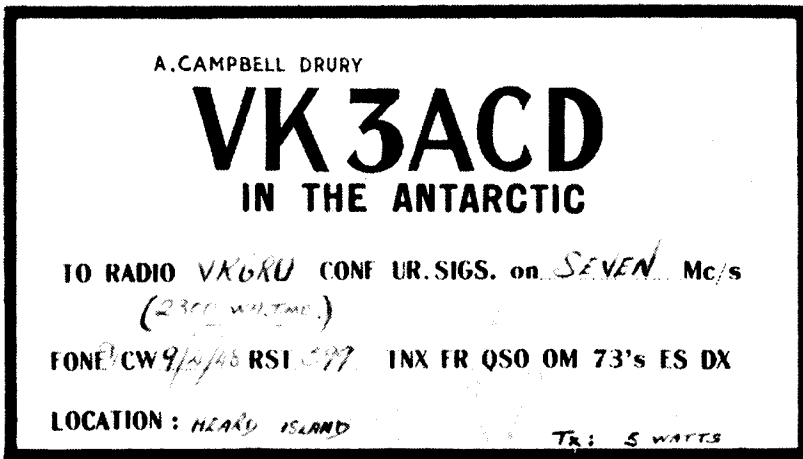
Percy feels that it is time he donated more effort to his already beautiful flower and vegetable garden, and the good wishes from all DXers, particularly those that have enjoyed many happy hours in participation with the net over the years, trust that NOW they will be able to have an unhurried QRM free QSO away from net frequencies with Percy.

Thank you, Percy, for your diligent, courteous and sustained contribution to the fascinating facet of the hobby that we all so much enjoy and I am looking forward to a quiet chat and a card to confirm the QSO.

THANKS

Sincere thanks to those who have made these notes possible, including magazines such as cq-DL, World Radio, Radio Communications, QST, Geoff Watts' Newsheet, Jan and Jay O'Brien's DX Managers List and others that may have been inadvertently missed, also amateurs, including G3NBC, F6CYL, ZL1AMM, VKs 3UX, 3XB, 3YL, 3DFD, 3DKK, 4AIF, 6IH, 6HD, 6NE and SWL Eric L30042.

Heard Island Update



The original card VK6RU received from VK3ACD now VK3CD which is believed to be the first confirmation received by an amateur from Heard Island.

Nick VK6XI has forwarded the following information on the DX Chasers' Club's project of letting Heard Island be heard.

The NSW Corporate Affairs Commission have approved the submission and registration of the HEARD ISLAND EXPEDITION. Accounting procedures and guidelines have been established, and due to the amounts of money involved and the necessity for contracts, it is believed that it is a fundamental requisite to use the professional skills of a chartered accountant to manage and advise on financial affairs. This expedition will not be a weekend excursion to some offshore island in a row boat. Extensive planning with no short cuts taken will continue to be the normal procedure for this event.

The unique call sign VK0HI has been reserved, and when used should provide a very desirable addition to many operators list of countries worked. Heard Island has now reached the top of the most wanted countries list with the operation of BY1PK, and now DF8MP/XZ operating out of Rangoon, who is believed to be genuine.

For the amateurs' side of the expedition international assistance has been sought. We have received great encouragement by a number of overseas DX Clubs pledging support.

Over the years various amateur operations have taken place on the island, but only the very fortunate have a QSL card confirming a contact and the forthcoming expedition is to be set up at Atlas Cove, which is the site of the ANARE station on the island. It provides the best landing beach, which will be ice free during the expedition's stay.

The mountaineers of the group intend to climb Mawson Peak, which is part of Big Ben and it is intended to set up a camp on the summit plateau to carry out an examination and testing of the reported rumblings emanating from Big Ben. Amateur radio operations will be an integral part providing not only world-wide amateur contacts but assurance for the expeditioners of the fact that the world is ready to help them.

DX Heard and Worked

SSB WORKED ON THE WEST COAST

10: 3X3JA, 4K1A, 9J2TY, CP6EL, D68AAB, F08HL, J3AH, OH1TD/4U, T30DB, VK9ZR, VP2VD.

15: 4U7ITU, CR9AK, CT3BM, FB8WG, JY9RC, SV5FD, VK9ZR, ZL4OY/A.

20: 7Q7LW, 8P6PS(YL), BV2B, CN8CY, CO7AM, D68AAB, FP8HL, FYY7M, HH5CB, KC6BS, VE3LRU/6Y5 (YL), VK9ZR, VP2KK, ZO9BV, ZF1SB, ZK1YL (YL).

40: 4S7WP, 8Q7BN, FM7WS.

CW WORKED ON THE WEST COAST

1.8: KH6AT/KH6.

21: BY1PK, DJ6SI/5V.

3.5: 9U5WR, DJ6SI/5V, G13IVJ, KG6RT, KL7Y, VK9ZR (WILLIS), ZK1AF.

7: 4S7XSG, 8P6KY, J20/Z, J73D, OJ0AM, ZF2CD, ZK1AF.

CW HEARD ON THE WEST COAST

1.8: RA9AKM, UK2RDX, UP2NK.

3.5: DJ6SI/6W8, FG7AM, KV4CI, VK0AN, YV1NX.

7: DJ6SI/5V, SU2DX.

CALL SIGNS HEARD AND WORKED ON EAST COAST

10/CW: VE5AAJ, VE5XU.

10/SSB: VK9ZR.

14/CW: RK7JAA.

14/SSB: 4K1A, 5T5ZR, 6D5UF, 6W8AR, 6W8DY, 8O7BN, 9M8PW, AH2L, AM6MQ/PM, BV1B, CN8MC, DL2VK/ST3, DX1F, EP2TY, FB8WG, G13WFA, H44WB, HB0LL, HH5CB, HI3PGJ, OX3ZM, OY5NS, SV1MO, UC2LBE, UDBDZH, UG6GAT, UG6LQ, UH8HCB, UO5OCL, UP2NK, VC3GCO, VP2KK, WB0NKR/KH3, ZF1SB, ZK1CG, ZK1XP.

15/SSB: DL2VK/ST3, EA9JE, MIC, UJ8JCT.

21/CW: RK7GAA, TG9NX, ZF2CD.

21/SSB: 4Z4AB, T3ZDB, V9ADX.

28/CW: CK1CC.

28/SSB: CT3BM, V9ADX.

CW SWLING WITH ERIC L30042

10: FR7BP, IS0XKV, VK9ZR (WILLIS), VQ9CM, YB4GF, YC0BRT, ZC4YC, ZS6BTG.

15: 9H1CH, BY1PK, FK8EB, FR7BP, HL0B, UK8AAI, VK9ZR, W1DV/DU2, ZK1CQ, ZL4PO/C, ZS1OJ.

20: 3B8DB, 8P6BX, AM07TH, CT2AO, DU1OR, EA6BH, FK0AF, FM7WO, F08FW, HH2VP, HK3HY, HL0CAC, HP1XRR, KP2H, PY1HQ, T32AF, TI2BEV, VP8ANT, VP9LA, VQ9CW, VS7EY, VU2VZ, YB5AES, ZK1AF, ZK2VU.

30: 3X5DX, DJ8NY/M, DL3GG/YV5, DL7AEA/EA6, F8GT, GB3RN, GD4BEG, G13AEG, GW4DGD, HB9NL, JA4CUU, JASANP, OK1DWF/P, OZ9XD, VK9NS, VP8ANT, ZC4DT/G, ZK2VU.

In 20 weeks Eric has heard over 400 CW stations in 32 countries on 30m.

40: AH2L, AM01BAD, CX7BY, DJ5VQ, EX5UWO, F6ANF, FB8YJ, FK8DY, FR0GGL, G13IVJ, GW3AX, HB9BQL, HH2VP, HI3PC, HK1MY, KV4CI, OK3CAQ, OZ7YY, SM6EHY, T30AT, UK6LCB, VK9ZR, VQ9CW, Y55XL, YO2CE, ZB2EO, ZK2VU.

80: G13IVJ, OK4NH/MM, YU2CAO.

QSLers FOR THE MONTH

3B8CF, A4XJP, DJ0LC/HB0, EA9HG, FOAHY/FC, FG0CXV/FS7, FM7AV, FO0NP, FR7BX, GB2FAA, HB9IK (10 MHz), K8MFO/C6A, LU6BBM, OH3VV/CT3, PY8EUV, SV0AU, TF3JO, VK8HA (10 MHz), VK9YC, VP8ANT, VP9CB, W2LPF/DU2, YJ8TT, ZB2EO, ZS4XR.

OSL ROUTES AND MANAGERS

4S7AJG (K9AJ), 4Z4AB (K3STM), AH2L (W4PKM), EA6BH (DL7FT), RK7GAA (UK7GAA), RK7JAA (UK7JAA), TG9NX (N4FKZ), TI2BEV (W4ZD), VK9ZR (VK2BUL), VQ9CW (WB1DQC), W1DV/DY2 (WA2RXX), YB5AES (W4BBP), ZF2CD (W3ODJ), ZK1AF (SM3CXS), ZK2VU (DL1VU).

NOTE: Managers shown in brackets.

QTHs YOU MAY NEED:

EX5UWO — PO Box 88, Moscow, USSR.
 FK8EB — PO Box 3079, Noumea, New Caledonia.
 F08FW — PO Box 5006, Papeete, Tahiti.
 VP8ANT — PO Box 146, Cambridge, Great Britain.
 VP9JY — PO Box 788, Hamilton, New Zealand.
 YB4GF — PO Box 273, Palembang, Indonesia.

Anti-Repeater for the Kyokuto FM-2016A

B. Willis VK4ABY
 Kent Street, Forest Hill 4342

The Kyokuto FM-2016A has four memories which may be scanned, but does not have an instantaneous means of switching to a repeater input, unless the input frequency is held in one of the memories. This article describes how the set may be modified to enable quick selection of "anti-repeater".

THE SCHEME

The set has a front panel RF attenuator/tone switch which is disabled and used to switch the crystal oscillators to the opposite function during receive (or transmit). No changes to the case or panels are necessary.

PROCEDURE

Remove case halves and disconnect one end of the bypass capacitor from the power switch to earth. Removal of the four countersunk screws will allow the front to be tilted for easier access.

Disconnect the orange/white wire from Synthesiser Board pin P5 and from the RF Atten./Tone switch. Remove the black wire, on the same section of the switch, going to earth near the bypass capacitor mentioned above. Remove the red/white wire which runs from the other section of the switch to the MAIN UNIT pin P46 (near relay). Disconnect the white wire from the

Synthesiser Board pin P22 to the common pole on the Tone side of the switch. The second white wire soldered to the switch at this point is also disconnected from the switch and this end is soldered to pin P22.

The switch should now look as shown in Fig. 1 and is now ready for its new job. Fig. 2 shows part of the original circuit for the Mode switch and the position of the two wires which are to be cut.

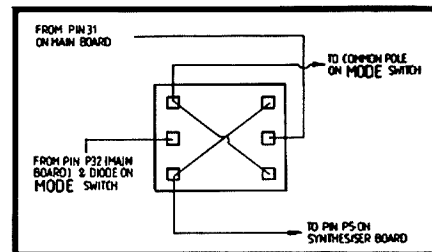


FIG. 1: Rear view of toggle switch. This shows the new wiring.

With the switch toggle up, normal operation occurs. Toggle down gives anti-repeater if the MODE switch selects the correct offset (+0.6 MHz or -0.6 MHz) for that repeater.

WARNING

Take care not to knock the switch into the OFF position — the scanner will work all day but nothing will be heard.

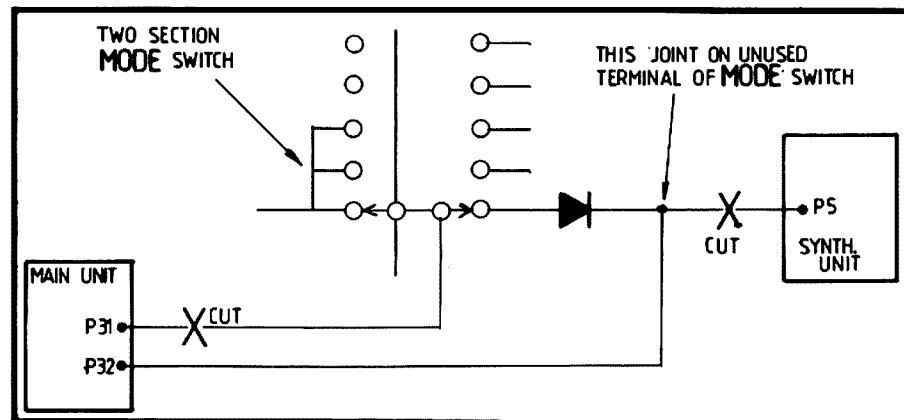


FIGURE 2: Connections for mode switch. Part of the original wiring is shown here. Cut the two wires as shown.



WARNING!!

Disposing of your old rig??
 Please ensure it goes ONLY to someone licensed to use it on YOUR bands.



A Trip to the Antarctic with VKOSJ

Arthur Smith VK3UX
5 Rushall Street, Fairfield 3078

Sjoerd Jongens VKOSJ, known world-wide as "SOJO", was never very interested in amateur radio but after spending some time in the Antarctic he now has a very strong fascination for it.

INTRODUCTION TO AMATEUR RADIO

As fellow expeditioners on a trip to the Antarctic were going to sit for the amateur operators' examination prior to departure, Sojo thought he would not be left out and, as he is an electronics engineer, he did not find the examination too difficult. So a last minute purchase was an Icom IC-701 to make the trip with him aboard the "Nella-Dan" en route to Mawson Base.

INSTALLATION

At first Sojo did not have too many contacts except for an occasional call from Dave VK0DB on Macquarie Island, so it was decided to install Keith VKOKL's IC-701 in the shack with the base station's Collins equipment and use the station's "VEE" transmit aerial and the Rhombic receive aerials, when they were not being used by the Australian National Antarctic Research Expedition's (ANARE) station, VLV.

Unfortunately it was soon discovered that this was not a good location as the transmitter caused interference to some of the scientific equipment and also to the cassette players in the sleeping quarters. This caused limited operating time so Sojo decided to install his IC-701 in an empty laboratory with a 200 metre long wire aerial strung between two existing masts in a north-south direction. This gave good reports from Australia and apparently no interference problems as the complaints ceased.

THE GREAT ALTERNATIVE

Amateur radio proved a great alternative to the radio-phone skeds that the Antarctic has via Sydney; these skeds are about half an hour duration with each of the four Antarctic bases time allocated sequentially. So with the time available to those who wish to make a call and with added complications such as atmospheric disturbances and polar cap absorption, when conditions are "difficult", time is sometimes at a premium and there is also a cost problem. Whereas an average amateur contact is timeless and Kevin VKOKC has been known to have broken the 3-hour record.

At first Sojo's main interest was to contact a station in his home country, PA-land, but he soon discovered it was very tricky to find the right frequency-band and time of day. But, due to the low noise level in the Antarctic and the availability of long aerials, he very rapidly found he was a very popular station and the log book had many stations entered from all areas of the world, and a few contacts were made to stations using a 10W transmitter with a vertical whip aerial.



INTRODUCING TELEX

Most of Sojo's enthusiasm was generated by Julian ZS1ANT, an operator with the South African Antarctic station, who in turn introduced him to his friends in South Africa, Alastair ZS5MU and his wife Davina ZS5GC, who very soon became very good "friends-on-the-air" to Sojo also.

Davina and Alastair inspired Sojo to construct a PLL demodulator and borrow a telex machine from the main base station which then enabled contacts in written word.

PORTABLE DX

In November 1980 on an overland trip with three others towards Scullins Monolith, using two dog sledges, Sojo decided to take his transceiver. Two Bombadeer skidoo batteries were taken, one to use with the regular radio for skeds with Mawsons and the other for the Icom. However, during the trip over very rough terrain one sled tipped over spilling much of the acid which, when used for transmitting, gave very poor results.

At the turn-around point of the trip Sojo topped this battery up with some melt-water and placed both batteries in a bucket of hot melt-water, jumpered the two batteries in parallel and had very satisfactory results, working Davina for over 45 minutes.



MAWSON
Australian Antarctic Territory

Mawson Base

Next, on a trip in January 1981 with tractor trains, Sojo wrapped a 20 metre open dipole around an 8 metre long bamboo attached to the radar van sledge. This time Sojo used the 240 volt generator, which ran day and night, and was even able to make some contacts whilst on the move, although static electricity caused by the sledges moving over the snow did make readability of weaker signals difficult, most contacts being made whilst stationary.

On this trip Sojo also installed the telex and used it to transmit radio telegrams on 80 metres to VLV at Mawson for re-transmission to Australia.

FURTHER DIVERSIONS

In the summer time Sojo was so enthused with amateur radio that he had a Tono Theta 7000e communications computer sent down so he could further diversify in this new hobby. This enabled him to transmit and receive RTTY, ASCII and CW on a video screen. Most contacts via this medium proved extremely good and Sojo was even able to copy HS1AMI (now HS1AMI/Z21) sending CW with his home-brew computer using 1 watt. This power level being necessary because of QRM.

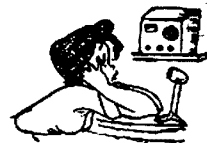
NO REGRETS

After one year in the Antarctic with some 1,984 entries in his log book and many friends the world over, Sojo has no regrets to becoming involved with amateur radio as it gave him a very satisfying hobby under rare conditions in a secluded place during his year at Mawson, although the QSL cards and letters he received on his return may have made him think twice. ■



Tractor trains consist of a bulldozer pulling sledges loaded with scientific equipment and personal needs for excursions which sometimes last up to four months.

* Antarctic Division photography by M. Betts and L. Macey.



ALARA

AUSTRALIAN LADIES' AMATEUR ASSOCIATION

Margaret Loft VK3DML
28 Lawrence Street, Castlemaine 3450

HOME AGAIN

Well our two weeks holiday went too quickly for us and it is back to cold windy weather again; still we are in winter. While in Eden we visited Col VK2ASF and Jean. We only had 2 metres with us and talked to a few OMs in Gippsland and on the south coast of VK2.

HOLIDAY TIME

Diane VK6KYL was on holiday in the eastern States and on Lord Howe Island in May and talked to quite a few of the YLs from LHI. They enjoyed the trip and are hoping to return again. Geraldine VK2NQL played hostess to Diane, Bill and girls whilst they were in the Sydney area.

Geraldine, do hope you enjoyed your holiday in VK4-land, also others who have been away.

CALLING FOR NEW MEMBERS

Valda reported no new members for ALARA this month whilst on air on Monday night. The new address for Valda is PO Box 4, Brighton. So if you are interested in joining ALARA or are a teaspoon collector, please write to Valda and she will be happy to supply you with details.

PLEASANT SUNDAY AFTERNOON

Jenny VK5ANW was in Melbourne in May for the Federal Convention, and on the Sunday afternoon a group of girls met at Valda's QTH to meet Jenny. I was invited but could not make it. Mavis VK3KS, Jessie VK3VAN were among the group, also OMs Gordon VK3BGB and Ivor VK3XB attended.

ANNUAL MEETING

The Annual Meeting of ALARA will be held on air on Monday, 26th July, so please mark this date on your calendar, girls, and come on frequency to ensure its success. Remember it is your Association and this will be your chance to have a say in the successful continuation of ALARA in the future. It is seven years since the forming of ALARA, or LARA as it was then, and from a handful of members it has grown to a membership of over 100.

REMINDER

Remember the date for ALARA's contest is November 13th from 0001 to 2359 UTC; all bands may be used. Full details of scoring, rules, etc., will be in the contest section of AR and associated magazines.

33/73/88 for this month.

Margaret VK3DML. ■

:: ::

DEFINITION OF:

• Success is getting up just one more time than you fell down.

EDUCATION NOTES

Brenda Edmonds VK3KT
56 Baden Powell Drive, Frankston 3199



EXAMINATION STATISTICS

I have recently received from DOC some statistics for the August 1981, November 1981 and February 1982 exams. Figures given are numbers of applications received for each section, numbers of candidates sitting for each section and numbers of candidates passing each section for each State and for the whole of Australia. The tables are too long to publish here, but if anyone is interested in seeing them, copies can be obtained from me or from Divisional Federal Councillors or the Executive Office.

There are no surprises in the overall figures. Pass rates are highest for Regulations and CW sending and usually lowest for Theory at either level. It is interesting to see that the numbers sitting for the AOCF are now higher than for the Novice exam. Over 2,000 candidates sat in August and February combined, of whom over 40 per cent passed. What we do not know, of course, is the number making a second or later attempt, but a growth rate of 800 plus from these two exams is surely healthy.

Theory pass rates for both levels appear to be slowly rising — over 40 per cent overall for each exam, and most States with over 50 per cent at one or other of the exams. I would like to think that this figure reflects better preparation by the candidate, but I tend to agree with the DOC officials who see it as related to the fact that the multi-choice exams have now been around long enough for the format and type of question to become fairly well

known — especially to those sitting for a second or third time.

The most unexpected feature of these figures is the consistently poor performance of the VK2 examinees, who show the lowest pass rate in almost every exam, e.g., Regulations (August) — Australian average pass rate 70.9 per cent; VK2, 44.8 per cent. Novice CW sending (February) — Australian average 76.8 per cent; VK2, 32.1 per cent.

This is surprising in view of the very active group of educators in VK2. Does VK2 have more students trying to get through on their own than in the other States? Or are they more inclined to "have a go at it" even if not expecting to pass? I would welcome comments from people who have been involved in these latest exams — either as candidates or teachers.

Several recent comments have been made on the need for a review of the Novice syllabus. I would be interested to hear from anyone who has views on this subject, or who would like to give serious thought to any particular section. I can be reached QTHR in the Call Book and the Melbourne telephone book. I am also trying to develop an Education Net on Wednesday evenings at 1200 UTC on about 3.685 MHz. Please feel free to join in if you are able or interested.

I hope to have another trial AOCF exam paper ready early in July. It will be available from the Executive Office or from me on request.

73. Brenda VK3KT. ■

LISTENING AROUND

Joe Baker VK2BJX
Box 2121, Mildura, Vic. 3500

During December 1981 Joe spent a very pleasant vacation in Melbourne as the guest of Don VK3VPW and Don's charming XYL, Uter.

While in Melbourne Don VK3VPW suggested that we visit Radio Lyndhurst. So armed with my camera I piled myself into Don's car and we headed for the bushland area where the installation is located.

INSPECTION FROM AFAR

Not knowing whether or not we would be permitted to inspect the station at close range, we decided to first drive around the long roads on the perimeter of the antenna farm and be satisfied with looking at all those aerials at a considerable distance. So at long range I took what photos I could get when Don stopped his car, even though I do not have a telephoto lens. The roads in the area are to say the least rather tortuous and pretty dusty and there is much scrub, so I was happy that there were no bushfires, for to me this seemed to be an area where anyone who was careless as to where he tossed his cigarette butts could cause quite a conflagration. But apart from getting bitten on my posterior by a very large and hungry soldier ant, as I paused to take one photo, nothing very spectacular happened.



Radio Lyndhurst

WE ARE ADMITTED

After cruising around the area for a while, we came to what was obviously the entrance gate to Radio Lyndhurst. Here we paused, and I said to Don "I wonder will they let us have a look inside?" Don said, "Well, you go up to that main door and if they say 'yes', give me a signal and I'll drive the car into that parking area." So I went up to the door, pressed a button on the wall nearby and along came a white-coated technician to whom I addressed myself. I told him that both Don and I were amateur radio operators, and that we had been admiring their aerials, and could we have a look inside the transmitter building. The technician said that he also was an amateur, that almost all of the staff were also amateur operators, and invited me to have a word

with the Officer-in-Charge, Ken Bytheway. Ken said that there would be no problems, providing that we signed the visitors' book "to indemnify us against the possibility that either of you might get roasted if you get too close to any of the transmitters". Thus encouraged, I signalled to Don to park his car, and Ken detailed the white-coated technician to give us a grand tour of the place.

GRAND TOUR

In writing this article, I cannot possibly tell you all that we were told about the Radio Lyndhurst installation, because I didn't take notes at the time, or have a tape recorder with me. However, I told the two that we met that I'd probably be writing an article on our visit for AR and they were very helpful. Before I go on, I would suggest that any other amateurs visiting this station bring with them a notebook and tape recorder and possibly flashlight equipment for their camera — for they will need the flash to photograph the transmitters.

TRANSMITTERS

We were told that this installation accommodated transmitters for the ABC's Inland Service, and others for Radio Australia. We saw about 10 or 12 transmitters of 30 kW each (I think) for the Inland Service lined up all along one wall inside the building. In some respects these reminded me of the BBC overseas at Skelton in Kent, which I saw many years ago, and the Cable and Wireless transmitters at Ongar, just outside of London. However, unlike those of the BBC and Cable and Wireless, which were water cooled, the Lyndhurst transmitters are all air cooled, and it was explained to us the reasons why air cooling is superior in so many ways to water cooling of the valves. (The Skelton and Ongar stations each had their own independent water reticulation system, which involved considerable continuous maintenance.)

At Lyndhurst, special receivers are used to continuously monitor the output and quality of 3AR and 3LO. And should the programme lines from the city studios of the ABC to the Inland Australia transmitters fail, provision is made for the programme to be fed from the monitor receivers to the relay transmitters. Equipment is also available to make standby station announcements from special tapes feeding directly into the relay transmitters.

TIME

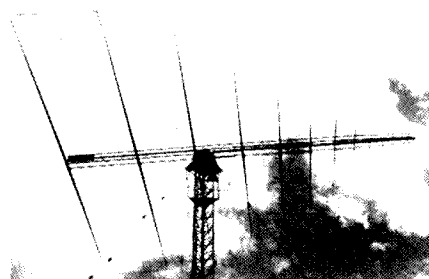
In another part of the premises we were able to see in a very small room where the

air-conditioning is held at a constant temperature, the equipment which puts out the VNG time signals on 4.5, 7.5 and 12 MHz bands. A caesium clock located in the city is connected with this equipment. Many times I have heard the VNG pips on shortwave, and to be able to stand alongside the equipment which gives these pips to all who want them, gave me an unusual feeling. For here was the source of all that racket that used to make me hear VNG right across the 80 metre band when I was using the transverter plus CB to operate on 80. The equipment that we were looking at is very much "high technology" and would need a fully qualified specialist to describe how the equipment works in detail and, after all, we were only visitors seeing this equipment for the first time, and therefore I'm no specialist on it, but the chap who was showing us around sure knew what it was all about.

Seeing a slowly moving paper roll on a chart recorder attached to the gear, with its ink writer describing a series of hill and dale movements horizontally across the paper, I asked what this was all about and was told that this device was to keep check of the accuracy of the time signal pips themselves and the curves represented highly magnified errors in the order of millionths of a second or something.

GENERATORS

In a building adjacent to the transmitting equipment was the standby power generators. These machines were in a beautifully kept and very clean condition and on each was a notice warning stickybeaks like me to stand clear of the gear, because its operation was automatic, and it could come to life instantaneously with any failure of the external power supply to the station.



Log periodic antenna

AERIALS

Some distance away from the transmitter building, and between it and the antenna farm is a very comprehensive switching device by means of which any transmitter can be connected with any one of a number of aerials. I took a photo of the white-coated technician showing Don how this switch-gear worked. All those years ago I saw a similar switching device at the BBC station at Skelton in Kent, but this one was of course more up to date.

If I were asked what antenna of those that we saw that day was the most impressive, I would say the Log Periodic. The size of this antenna is really massive, and I had to decide which way to photograph it to give some idea of its enormity. I decided to lie on the ground and face the camera upwards to the heavens. However, in order to get it in right proportion, I would like to have included some nearby structure, but with the camera faced upwards all I could include in the picture were a few clouds. You have to see this antenna for yourself to get an idea how big it really is. But there was I lying on the ground among the ants to get my picture.

This massive aerial can be rotated, and we were told that it's a standby antenna for Radio Australia and can be oriented to face any direction in which it is desired to send a programme should the regular antenna for that service be out of action. Look at the dimensions of the 14 elements on this antenna and one can well believe that it is capable of covering all frequencies from about two to thirty megahertz.



Antennas from the roadway

We spent the best part of a day at Radio Lyndhurst and were made more than welcome by the Officer-in-Charge, Ken Bytheway, and the white-coated technician who took time off from his other duties to show us around the place. I was given a list of the call signs and names of all the amateur operators who work at Radio Lyndhurst, to be included here, but unfortunately I have lost that list, and I did so want to tell you who they all are. The only way that one can really appreciate everything that is to be seen at Radio Lyndhurst is not so much by reading what I have endeavoured to put down here, but to go and see the place for yourself, and I know that especially if you are an amateur radio operator, you will be more than welcome there as Don and I were. And don't forget to take a notebook or tape recorder — you'll need it. I couldn't possibly memorise all that we were told about the station that day.

UHF Prescaler — the Easy Way

M. F. M. Tuck VK3ZOV
257 Dendy St., E. Brighton 3187

Numerous articles have appeared which have given details of pre-scalers using various available ECL chips. Generally, at higher frequencies it is necessary to prescale by 100 rather than by 10, so mostly they have used either Highspeed TTL or Twisted Ring Counters to achieve the second stage at lowest cost.

This generally involves a larger board layout and does not always allow the best operation of the first stage.

Readers may be interested in the following simple, but not necessarily cheap solution.

The first stage uses the 11C90 divide by 10/11 650 MHz counter, which has provision on the chip for TTL and ECL outputs. The second stage uses the more common 95H 90, and the whole is built on a very small stripline board.

The input line is 50 ohm. Output is provided from both divide by 10 and divide by 100 at TTL level with a 5V supply.

The original unit has been in use for several years as a plug-in for a basic 40 MHz counter.

The protection diodes do not degrade

the performance. The author's unit works happily at 700 MHz. In view of the low input impedance, better matching is achieved by use of an input coupling loop. Naturally as the frequency gets higher the sensitivity falls off, but the 11C90 has the handy feature of a self-biased input which always makes the best it can of the situation!

The suggested board layout is given. Gross deviation is not recommended as ECL is very sensitive about lead lengths. All GROUND POINTS are soldered on both sides to ensure a good ground plane.

The prototype used a BNC connector with a milled block to which the board was screwed with 8 BA screws at right angles. It could have been improved, but it works!

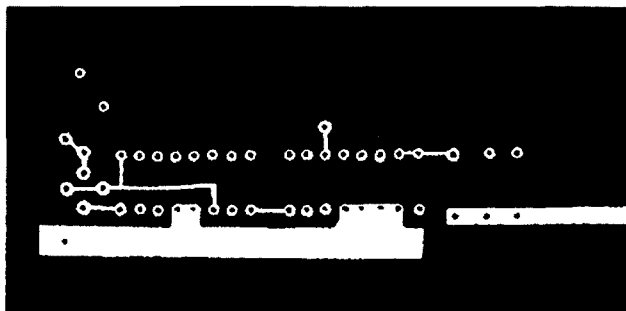
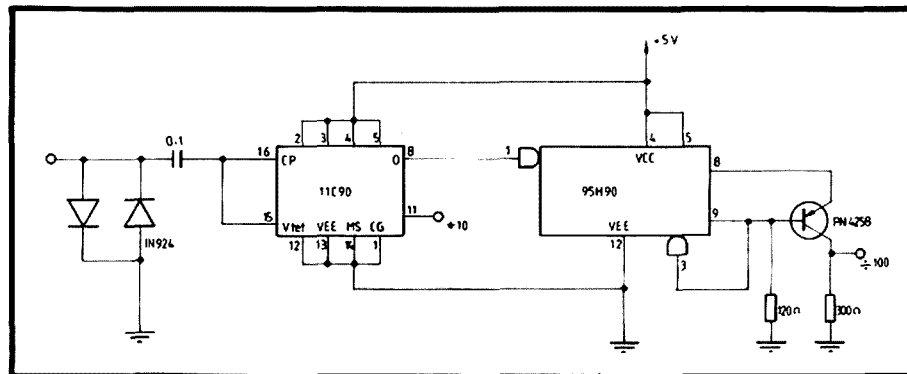
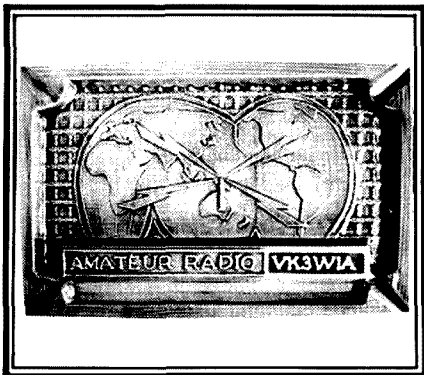


Photo Mask



Circuit of a UHF Prescaler

AR SHOWCASE



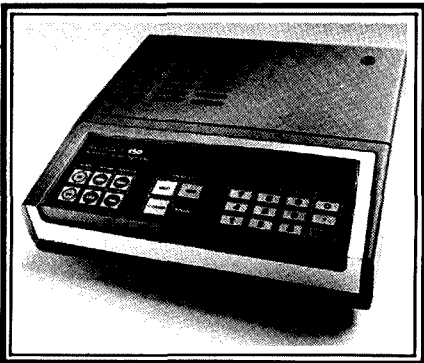
OMISSION IN MAY AR AR SHOWCASE

ITEM: NOVELTY WALL PLAQUE

The address for Bruce and Pam Saxon VK3BWV and VK3NSB was omitted from the text.

Bruce and Pam may be contacted at 77 Edithvale Road, Edithvale, Victoria 3196 Phone (03) 772 1975.

Please amend your copy now.



THE BEARCAT 150FB DESK-TOP SCANNER

Dick Smith Electronics has released the most inexpensive desk-top scanner available in Australia today. It enables you to hear tomorrow's news, today. The Bearcat 150FB Scanner monitors essential service frequencies and you can hear it as it happens.

The Bearcat 150FB Scanner is a 10 channel crystal-less programmable scanner covering a large part of the UHF and VHF Spectrum.

The frequency ranges covered are:—

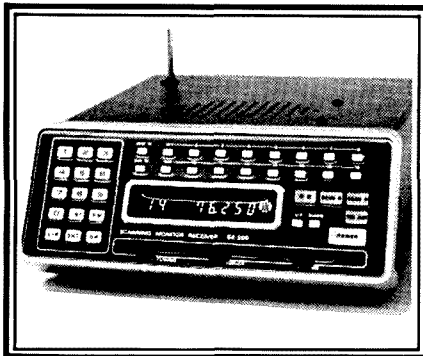
- UHF from 406-490 MHz (this is reception of the full amateur 70 centimetre band).
- 66-98 MHz (which includes Australian VHF low band allocation).

- 144-174 MHz (this includes amateur 2 metre band and VHF high band).

With the Bearcat 150FB, you don't need crystals. You can programme the frequencies into it and change them at any time and programme different frequencies, as you prefer. Features include a smooth touch-sensitive keyboard (no knobs or switches), lighted 8 digit display to show the frequency programmed for each channel, special scan function and command confirmation.

The specifications are: 10 channels, 0.5 uV VHF-0.8 uV UHF sensitivity, a scanning speed of 16 channels/ second (2 second selective delay), 8 digit fluorescent display, "Touch Sensitive" type keyboard, 240V AC power, and a telescopic antenna (supplied); with provision for external antenna.

The Bearcat 150FB Scanner is available from any Dick Smith Electronic store. ■



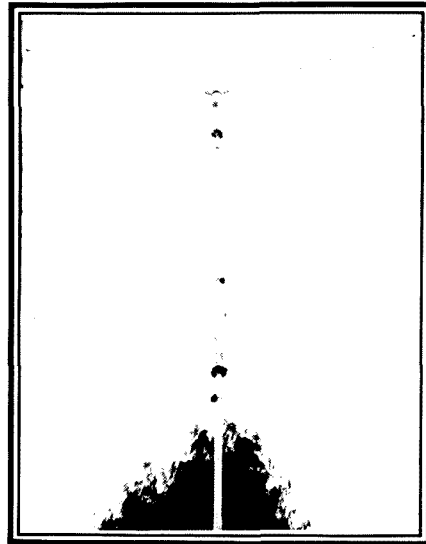
32 MEMORY CHANNELS FOR THE JIL SX-200

The JIL SX-200 is unique with its coverage of such a broad range of frequencies (26-88, 108-180 and 360-514 MHz) and it is capable of receiving over 33,000 frequencies in either AM or FM. Due to the excellent features these scanners offer, over 1,700 have now been sold Australia-wide.

It is now possible to increase the memory channel capacity of the JIL SX-200 scanning receiver from 16 channels to 32 with a "32 Channel Memory Expansion Kit" just available. Called the Model EXP-32, this kit allows the SX-200 to scan either one of the two 16 channel memory banks separately or the entire 32 memory channels consecutively.

For anyone who is reasonably competent with a soldering iron the kit is easy to assemble and install within the receiver and takes about an hour to do.

For further details contact the distributors, GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. ■



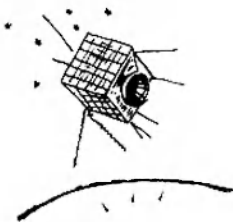
NEW ANTENNA

Chirnside Electronics Pty. Ltd. have recently released a new 80m-10m trap vertical antenna. Unlike the very popular model, the CE-5B trapped vertical which is 9.5 metres tall and needs guying, this new model, CE-5SS is a self supporting type and only stands 4.8 to 5 metres tall. Because only two traps are used costs are kept to a minimum. The CE-5SS is very easy to adjust and can be either ground or roof mounted (or similar). It can be very easily disassembled into four pieces and put back into place in a flash, which should prove ideal for portable or caravan users.

Power handling is 1 kW PEP on 10/15/20m and up to 400W PEP on 40m and 80m, which is more than adequate for our local conditions. The traps and the antenna are completely waterproof. Zinc plated and stainless steel hardware is used for long life and durability. Comparing what is available on today's market, this may well be the lowest priced vertical antenna available.

For further enquiries contact Chirnside Electronics Pty. Ltd., 26 Edwards Road Chirnside Park, Lilydale, Vic. 3166. Phone (03) 726 7353. ■

AMSAT AUSTRALIA



Bob Arnold VK3ZBB
41 Grammar Street, Strathmore 3041

NATIONAL CO-ORDINATOR
Chas Robinson VK3ACR.

CORRESPONDENTS
VK3YQX, VK5AGR, VK7PF.

INFORMATION NETS
AMSAT Australia
Control: VK3ACR.

1000Z Sunday and Wednesday, 3.680 MHz winter, 7.064 MHz summer.

AMSAT Pacific
Control: JA1ANG.
1100Z Sunday, 14.305 MHz.
AMSAT SW-Pacific
Control: W6CG.
2200Z Saturday, 28.880 MHz.

mand in 100 million. On this occasion the computer chose to switch ON the 435 MHz TLM beacon and that in addition to the 145 MHz beacon already on has caused some desense to both command receivers.

The fail-safe software had been over-written during a test and the replacement had not been loaded when the false command occurred.

It is likely to take several weeks to rectify the position, at which time a second fail-safe programme will be loaded into the spacecraft secondary computer in addition, to ensure no further occurrence of this problem."

A NEW AMATEUR SATELLITE

Monday, 17th May, 1982, at 1107Z was a time of historical significance for the USSR and also became one for the amateur fraternity. A couple of days after Cosmonauts Anatoly Berezovov and Valentin Lebedev docked their Soyuz T5 with orbiting laboratory Salyut 7 they literally tossed overboard a 28 kg amateur satellite ISKRA number RK02. RK02 was quickly located by amateurs world-wide through its beacon on 29.578 MHz, which transmits the satellite call sign and a series of telemetry groups of letters and figures. The satellite would appear to be close to Salyut 7 (when writing 26/5/82), giving an orbital period of 91.2177 mins. and an angular increment of 23.1938. The inclination is 51.59° and the height about 354 km. The beacon can be adjusted to provide an output power of either 300 mW or 1 watt. RK02 carries a transponder of unique



QSL CARDS

Andy VK3YQX has sent me one of his new QSL cards, which has been produced by AMSAT and personalised with his own call sign and QTH.

These cards will be ideal for the many operators anticipated on the Phase III satellites and I suggest your order be placed in good time.

Send for a copy of AMSAT's official order form, C/o AMSAT QSL, PO BOX 27, WASHINGTON, DC 20054, USA.

SATELLITE UP-DATE

AO8 and the RS series continue to operate satisfactorily.

UO9: Despite several attempts to break through the desense of the 2 metre command receiver the satellite still remains in the "two beacon on" state. It is now proposed to transmit high power signals to the 70 cm command receiver with the hope that these may override the desense signal and remedy the fault.

The following abbreviated information, obtained from Dr. Martin Sweeting, leader of the UOSAT project, was originally published in and is reprinted by courtesy of AMSAT UK newsletter. It is dated 2nd May, 1982.

"During the transfer of software in the spacecraft the primary spacecraft computer issued a false command which, under

normal circumstances, would be corrected using the fail-safe software in the computer.

It is estimated from measurements that the computer would issue one false com-

ORBITAL PARAMATERS — Time: GMT

	Oscar 8	Oscar 9	RS 3	RS 4
Period	103.2461952	95.4709	118.519216	119.395882
Drag	3.35832 E-6	1.253217 E-4	2.4 E-7	2.4 E-7
Increment	25.810794	23.8685	29.756588	29.975882
l Drag	5.1819 E-4	3.152992 E-5	0	0
Ref. Orbit	21450	3411	2000	1986
Ref. Eqx.	001415	000708	011300	003318
Ref. Deg.	74.7	136.0	78.6	67.1
Date	21/05/82	20/05/82	31/05/82	31/05/82
	RS 5	RS 6	RS 7	RS 8
Period	119.555556	118.7178	119.197024	119.765476
Drag	2.4 E-7	2.4 E-7	2.4 E-7	2.4 E-7
Increment	30.015833	29.806235	29.926071	30.068333
l Drag	0	0	0	0
Ref. Orbit	1983	1998	1988	1978
Ref. Eqx.	015225	015320	015545	004839
Ref. Deg.	86.7	88.4	88.1	70.3
Date	31/05/82	31/05/82	31/05/82	31/05/82

characteristics having an input frequency of 21.230 to 21.270 MHz and a down frequency of 29.580 to 29.620 MHz. An uplink power of 200W ERP is required to access the transponder. The satellite will be short lived but may still be operable when these notes are published. Perhaps I should mention that, due to the low altitude of RK02, the maximum slant range for operation is only slightly in excess of 2,000 km and the maximum pass time is only 10 minutes. ■

BOOK REVIEW

Iain Morrison VK4KIG

29 Andaman Street, Jamboree Heights 4074

FERRO-MAGNETIC CORE DESIGN AND APPLICATION HANDBOOK

M. F. "Doug" De Man 1981.
Published by Prentice Hall Inc.
ISBN 0-13-314088-1.

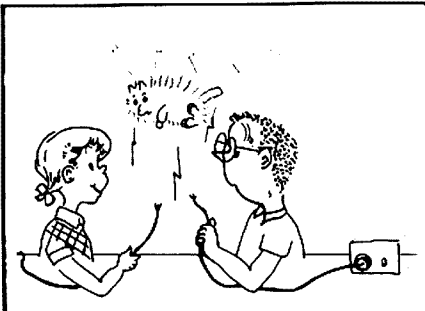
If you work or play with RF inductors seriously then this book is a must, as it lives up to the reputation and quality of the author's previous publications. The title should have been "Radio Frequency Core Design and Applications" as it is, with a small exception, all RF applications, as opposed to the myriad of other texts on the subject, that don't go higher than 100 kHz or so.

The text is readable, the maths are bearable and usable for those of us who are a bit rusty or wary! There are five chapters covering:—

1. BASICS OF MAGNETIC MATERIALS.
2. APPLICATIONS OF RODS, BARS AND SLUGS.
3. APPLYING TOROIDAL CORES.
4. BEADS, SLEEVES AND POT CORES.
5. PERMANENT MAGNET DATA.

The last chapter is dead weight as far as RF is concerned as it covers how to select, magnetise and preserve magnets. The five appendices are a good finish to the book, presenting further references, unit conversions and cook-book solid design details for the various core shapes. Altogether a total of 230 pages (of 251) of much sought after RF design and applications information.

My copy was obtained from the US direct for approx. \$20 US. ■

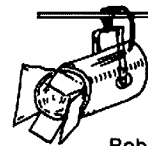


Definition of electromotive force

SPOTLIGHT

ON

SWLing



Robin L. Harwood VK7RH
5 Helen Street, Launceston, Tas. 7250

BATTLE OF THE AIR

As I expected, the Falkland/Malvinas crisis exploded into warfare in early May. The crisis has escalated as well on short wave, with both sides having a verbal battle over the airwaves. As the British Task Force moved closer to the Falklands, an Argentine "clandestine" station called Radio Liberty began broadcasting in English to the troops, with a husky female announcing news from home and urging the troops to go home. It was heard on 17.740 MHz from 2300 hours UTC in Europe and South America. Reports have said it has also been heard on 25.680 MHz. Unfortunately, we were unable to intercept this station here in Australia, because the Voice of America uses this channel to broadcast to Australasia and the Pacific at that time, and there is no propagation on 11 metres between South America and here.

JAMMING

It was not too long before the Argentines turned their transmitters to more immediate uses. The BBC Latin American Service in Spanish came under selective jamming, so much so that London increased broadcasts in Spanish language to the region. I said that it was selective jamming, because it was mainly confined to news and current affairs programmes. The jamming consisted of a very raspy 400 Hz note and was easily observable here. Also the Argentine External Service increased their transmission hours.

DAILY UPDATES

The special transmissions from the BBC for residents on the Falklands have also been made daily now, using the Ascension Island relay site. We have not been able to hear it on either 15.400 or 11.820 MHz due to propagation, but the Daventry feeder on 15.670 MHz LSB was heard from 2120 to 2200 UTC.

The British Forces Broadcasting Service began broadcasting messages and requests from home for members of the Task Force, also using the Ascension Island relay at 1100 UTC on 21.490 and 17.840 MHz. However, Radio Moscow is on both channels broadcasting in Asian languages, thus preventing us hearing it.

PROPAGANDA!!

Just a few days prior to the British troops landing on the Falklands, the Ministry of Defence in London requisitioned one of the Ascension Island transmitters, which they used to broadcast propaganda and music to the Argentine garrison on the Malvinas. I believe it was a mixture of subtle and very crude propaganda, together with sports and pop music. Called Radio Atlantico dell Sur, this Spanish language station really antagonised the Argentines, and was continually jammed

when it appeared on 9.710 MHz between 0815 and 0945 UTC, and from 2300 till 0200 UTC. Again the jamming took the form of a very raspy 400 Hz note and was heard here.

At the time I am writing this, there seems to be no sign of a peaceful conclusion of the conflict, so there could conceivably be more developments, especially if Britain regains the entire chain. I think we will hear quite a deal about the Falklands over short-wave during the next few weeks.

LETTER FROM ZL

It appears that the pressure exerted by SWLs, as well as New Zealand expatriates, has had some effect over the decision to wind up Radio New Zealand's External Service, judging by a letter received by Fred Reid VK7FD, of Burnie (Tasmania). This letter was from the NZ Prime Minister's Office, and confirmed that the Government, through the Ministry of Foreign Affairs, cannot see its way clear to continue funding of the external service beyond the 31st of March, 1982, and leaving the final decision with the Broadcasting Corporation whether it could continue to operate it from their own resources, or from some form of commercial sponsorship. Apparently negotiations are under way with Radio Rhema, a religious broadcaster, and the BCNZ with a view of taking over the External Services from the BCNZ. These programmes were originally scheduled to conclude at 1215 hours UTC on Friday the 7th of May, but this decision was reversed, pending the outcome of these negotiations.

Since May 7th the External Service programming has ceased and the transmitters are relaying the National Programme. This means the popular "New Zealand Calling" with Tony King and Arthur Cushen are now not being heard.

CODE, CODE AND MORE CODE

Many years ago this magazine had an article by the late Ken Gillespie VK3GK on utilizing the HF maritime communication stations to improve your proficiency in Morse code. I thought it would help some SWLs and amateurs if I could update the frequencies and information from that period. So you will see the list of some of the stations I have been able to observe in Fig. 1. These stations operate continuously on a fixed allocated channel and monitor another nominated frequency where ships can call the required station. When contact is established, the ship goes to his working frequency and passes his traffic. The International Code is still employed by all stations, but more are utilizing either the SITOR pulse system, or RTTY. Nevertheless, there is plenty of code about for those wishing to brush up.

However, a word of warning; Japanese stations use a different system — the Koto

FIG. 1: HF MARINE COMMUNICATION STATIONS

Freq. MHz	Call Sign	Location and other Information
4.286	VHP/VIX	Belconnen, ACT — RAN Drills and WX Information
6.348	HWN	Paris France — French Navy
6.4075	GKC	Portishead (near Bristol), UK
6.4285	VHP/VIX	Belconnen, ACT — RAN
6.430	CFH	Halifax, Nova Scotia — Canadian Navy
8.437	JOS	Nagasaki, Japan
8.4445	KFS	San Francisco, California — Also on 8.5585
8.4456	XSX	Taiwan? — WX reports daily 1040 UTC
8.4531	VAI	Vancouver, BC — WX at 02/06/17 hours UTC
8.460	PPJ	Brazilian, QTH unknown
8.463	CKN	Vancouver, BC — Canadian Navy, also on 6.946
8.473	HLG	Korean, QTH unknown
8.4745	WLO	USA
8.476	9VG	Singapore Radio
8.478	TIM	Limon, Costa Rica — Also on 13.0996
8.4785	FUF	Fort-De-France, Martinique — French Navy
8.479	JCU	Choshi, Japan
8.486	WOE	Lantana, NJ (USA)
8.489	XSQ	China (PR) — Also on 8.514
8.502	XSG	Shanghai, China — Also on 8.665
8.504	ZLB	Awarua, NZ (near Invercargill)
8.521	VIS26	OTC, Sydney, NSW
8.5642	DZE	Manilla R., Philippines — Tfc. List 1130 UTC
8.5675	DZR	Manilla R., Philippines — Different to above
8.573	CLA	Havana, Cuba — Also 8.702
8.579	DZO	Manilla, Philippines (RMP)
8.582	KLB	Seattle, Washington (USA)
8.586	WCC	Chatham, Mass. (USA) — RCA Comms, Cape Cod — Also 8.630
8.591	KOK	Los Angeles, California
8.5985	ZLO	Iritangi, NZ — Naval
8.619	VRN	Royal Naval Station, Hong Kong
8.646	FUJ	French Naval Station, Noumea, New Caledonia
8.666	KLC	Galveston, Texas
12.125	CKN	Vancouver BC — Naval
12.135		Various US Naval Stations in the Atlantic Region
12.6956	KFS	San Francisco, California
12.698	ZSC	Capetown, South Africa — T/S 0755-0800 UTC
12.700	XSQ	China
12.7044	WLO	USA — Location unknown
12.707	ZLO	Iritangi, NZ — Naval
12.724	9VG57	Singapore Radio
12.726	CFH	Halifax, Nova Scotia — Canadian Navy
12.808	VTG4	QTH unknown; India
12.8265	WNU34	Slidell (USA)
12.843	HLO	Korean Station
12.849	ZSJ5	Johannesburg, South Africa
12.8745	HPN60	Panama City, Panama Republic
12.876	VAI	Vancouver, BC — Same as 8.4531
12.878	JCU	Choshi, Japan
12.8895	NMO	Pearl Harbour, Hawaii — US Navy West Pacific Fleet
12.9075	VHP/VIX	Belconnen, ACT — RAN
12.9255	WCC	Cape Cod, Mass. — RCA Comms — Also on 13.033
16.862	EBA	Spain; QTH unknown
16.8745	ZLO	Iritangi, NZ — Naval
16.9187	VHP/VIX	Belconnen, ACT — RAN
16.9475	VIS	Sydney, NSW — OTC
16.9575	FUJ	Noumea, New Caledonia — Same as 8.646
16.9805	DAM	Elmshorn, Federal Republic of Germany
17.0647	KOK	Los Angeles, California
17.1032	XSG	Shanghai, China
17.1435	DAN	Norrdeich, Federal Republic of Germany
17.1465	4XO	Haifa, Israel
22.4278	9VG	Singapore — Tfc. List at 0245 UTC
22.461	FUJ	Noumea, New Caledonia
22.474	VIS	Sydney, NSW — Tfc. List at 0250 UTC
22.485	VHP/VIX	Belconnen, ACT — RAN
22.557	KPH	Bolinas, California — RCA Comms Tfc. List at 0300 — Also on 22.5675

Kana or Japanese alphabet a lot of the time, so it can be confusing. Incidentally, the other codes and alphabets can be found on page 18 of the WIA 1981/82 Call Book.

Also several stations broadcast weather and navigational information at certain times of the day. Some even have press service copy. As well, they issue lists of traffic on hand at the station several times daily.

However, another use to which amateurs can put these stations is as a propagation indicator. Most stations have an identification marker going, when they are not passing traffic. This is to allow the ships to determine if they have propagation on any of the particular marine bands. If signals are not audible on one band, the operator can check the marker on a higher or lower band.

So amateurs and SWLs should be able to determine where propagation is going by observations on the nearest marine bands to the amateur allocations. These stations correlate very well, compared to trying to make determinations from the more powerful broadcasting outlets. For instance, the propagation on 20 metres can be readily ascertained by monitoring both the 12 and 16 MHz marine allocations. You may be surprised to hear ZSC, Capetown Radio, on 12 MHz as late as 1030 UTC.

Until next time, all the best of DXing and 73 — Robin VK7RH. ■

MAGAZINE REVIEW



Roy Hartkopf VK3AOH
34 Toolangi Road, Alphington 3078

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the novice.

ZERO BEAT February 1982
Discussion of Amateur Examinations (G). Five Year Cumulative Index (G). Converter for Facsimile Transmission.

CQ December 1981
Home-brew ASCII Keyboard (P).

CQ January 1982
SWR (G). Satellite Television (G).

CQ February 1982
Satellite TV Issue (G).

CQ March 1982
Two Metre Simple Transverter (C).

HAM RADIO January 1982
Two Metre Converter (C) (also ref CQ). Wilkinson Hybrids (GT).

CQ TV No. 117 February 1982
24 cm Down Converter (P). BATC Test Card (G). 24 cm ATV Exciter (P). 24 cm Linear Amplifier (P). ■

I hope that this list will be helpful to you. It is not designed as a comprehensive listing, but only as a guide.

NOW 32
MEMORIES
See below for details.

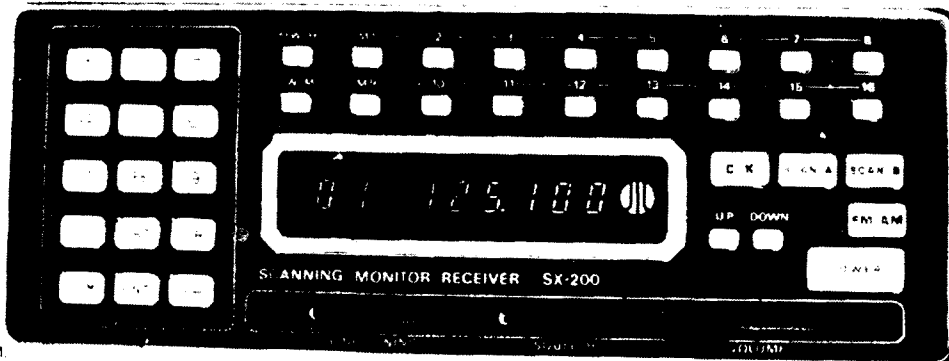
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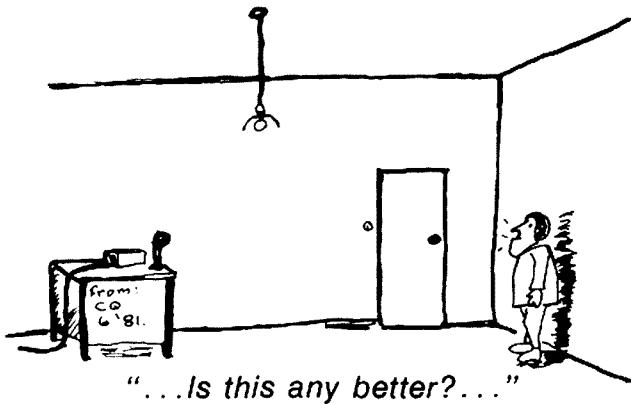
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AMATEUR BAND BEACONS

"I DO NOT BELIEVE IN A FATE THAT FALLS ON MEN HOWEVER THEY ACT; BUT I DO BELIEVE IN A FATE THAT FALLS ON THEM UNLESS THEY ACT!" And that's how I felt when the Editor suggested it was necessary to save some space by not having the beacon list every month, but having them periodically with any updates in between. So it's like the saying "IT'S ALWAYS EASY TO TELL YOUR STATION IN LIFE. SOONER OR LATER, SOMEONE TELLS YOU WHERE TO GET OFF".

So, accordingly, it would seem the prime time for a reminder list of beacons would be for September and March, being the start of the equinoxes, December for the Es summer activity, and June leading up to the winter Es openings. Maybe it will be possible to introduce some changes to the columns in other ways as we go along, in other words, looking forward, lest "the pain in the neck we complain about may be the result of looking backwards".

SIX METRES

There has certainly been a dramatic run-down in the measure of activity on six metres as seen from this location. Nev VK2QF has sent a letter which outlines some of the events occurring in VK2 during the equinox, and here are extracts: "3/4: Many US signals to 45 MHz early in the morning, then worked VK8GB 0013Z 5 x 1 scatter mode, KB7IJ/KH2 0055 5 x 3, JA1, 2, 3, 5, 1150Z, heard FO8DR on 50 MHz along with H44PT. 4/4: Intense W signals to 48 MHz at 2200Z, then 2304Z worked W6XJ, N6CT 2333Z, KG6JDX 2358Z, H44PT 0023Z, VS5LH 0126Z, JA1, 2, 4, 7, 8, 9, 0 0130 to 0200Z. Later around 0520Z all JA areas 1 to 0 with signals mostly 5 x 9, then KH6HI at 0842Z. On 50 MHz heard KH6EQI, YJ8RG, H44PT, VS5LH, P29ZFS, KC6UZ (0245Z 5 x 9), plus ZL and JA. Total of 140 QSOs with 130 JAs, 11 countries heard but no new ones. 5/4: Quiet; 6/4: VK2, VK5; 9/4: KG6DX; 11/4: VK1VP 2241Z backscatter. At 2254Z called VS6BE on 10 metres to report his beacon on 50.110, finally worked him split 52.115 to 50.115 at 2310Z at 559. Rest of the month relatively quiet." Thanks Nev.

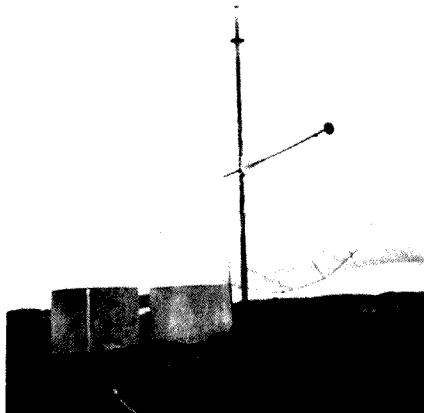
THE MELBOURNE SCENE

Gil VK3AUI fills in the April jottings for VK3 and it looks very interesting. He reports: "3/4: 0002Z 3D2JT heard 50.110 but not workable on 52 MHz. 0321Z KH6IAA 5 x 3, 0816Z JA2, 5, 9, 0; 2318Z H44PT at the start of a very good opening extending to 0002Z when Peter had about worked every available VK3. Same day 4/4 (Z time) 0118 half an hour of JA8. At 0730Z more JAs. 9/4: 2310Z XE1GE heard on 50.087.5 x 9, 2316 to 2340Z heard K6MYC on 52.005 weakly. 10/4: 2210Z H44HIR 50.005 599, 2225 to 2257Z H44PT very

good on 50 MHz, but nothing on 52 MHz. 12/4: 2250Z A35JT heard weakly on 52.010, 2301Z heard XE1GE on 50.110 and at 2311Z FO8DR on 50.096 529, but nothing on 52 MHz. 13/4: XE1GE copied VK3AQR at 2230Z, but no contact. 16/4: W7KMA 50.1 and 52.01 539 attempting to work VK3AMH and VK3OT. 18/4: 0015Z to 0047Z W6XJ 529 on CW worked VK3AZY, VK3XQ, VK3NM, VK3BDL, VK3AWY, VK3AQR, VK3AKK and probably VK3OT. 19/4: 0145Z KH6EQI 559 to 599, no contacts strong enough to even come in over Channel 0! 25/4: 0638Z JH2HPG worked, 1115Z VK7ZIF worked via Aurora, 1257Z Russian TV and weak JA signals. 26/4: 0042 to 1123Z JA1, 2, 3, 4, 5, 7, 8, 0. 27/4: more JA, also on 28/4 same."

Gil VK3AUI also passes on an item regarding two metres to Japan which is extremely interesting. "John VK6GU at Wyndham reports having worked two stations in Japan on 23/4/82. He worked Yuki JH4JPO at 1052Z and then JH4XTN at 1103Z. Reports of 559 were exchanged. The characteristic flutter of transequatorial signals were observed. Distances were 3424 and 3419 miles respectively as calculated by Graham VK8GB. John VK6GU was running a TR9000 with 10W output to a 10 element yagi 12 metres high. John has observed paging signals from Japan on 146.810 MHz.

"Steve VK4ZSH reports that, whilst portable at McKinlay 115 km south-east of Mt. Isa, he heard paging signals from Japan on 29/4 from 1014 to 1115Z, on 146.760 MHz from Mito City, 100 km north-east of Tokyo, and from Sendai City on 146.780 and 146.810 MHz. These localities were confirmed by JA2DDN and JA1RJU, who had a frequency list of the paging locations. Steve also reports hearing Japanese signals on 2 metres whilst in VK8, 600 km south of Darwin." That seems to be about the farthest south into VK so far reported with the Mt. Isa hearing. How long before Adelaide?



INTERESTING VHF DX

Further to the article in June AR, page 41, this is a photograph of Brian ZL1AVZ's dish which he used for this exciting contact.

HAPPENINGS IN THE WEST

It seems somewhat appropriate that the interesting VHF DX story should be followed by a letter containing some interesting information from Wally VK6KZ of 1296 MHz fame, who writes —

"I am pleased to respond to the reports of the marvellous VK2/ZL contact on 1296 MHz and congratulate the two amateurs concerned (because I know how thrilling it must have been) and, at the same time, point out that amateur radio distance records in the Call Book are now not up to date.

"However, on a positive note, Don Graham VK6HK and I VK6KZ continue our march upwards in operating bands and have lodged a claim with the WIA for a State record of 69.9 km on 3.456 GHz. On 10/4/82 I went portable at various points along our Darling Scarp and the furthest point was at North Dandalup back to Wembley Downs. Reports were 418 to VK6HK with 4 x 5 to me from Don. We are both using varactor multipliers from 1152 MHz with very little power out (less than 1 watt) to 1 metre diameter dishes. On this occasion we were using FM and CW, although I have a speech processor (a la VK5QR) for SSB from my home QTH. Attempts to exceed the Australian record of 114 km were unsuccessful on this occasion — however, we will continue our efforts!! Converters in both cases are interdigital types based on "VHF Communications" articles with 144 MHz IF. We are looking into pre-amplifier designs to improve noise figures as well as improving the transmitter output powers.

"Hans VK6ZT has made his first contacts on 432 MHz moonbounce and played tapes of signals from West Germany and Italy to the last VHF Group meeting. I don't have any more details, but it has been a long haul for him working largely alone to develop his system and it is nice to see his success, certainly a first for VK6 as far as contacts are concerned.

"Mike VK9ZYX has a low power FT290R and I have urged him to look for a linear! He is active on 52 MHz.

"The long haul contacts to JA on 144 MHz by John VK6GU are exciting. I was up in Karratha the week preceding John's first contact and kept monitoring 144 MHz hoping for some Indonesian activity, but that is too optimistic for a two night period! It will happen eventually judging by the regular appearance of Indonesian TV on channels around Australian Channel 10

along the coastline. The best I did on 17/4 and 18/4 was to work VK8GB and a number of JAs on 52 MHz, as well as hearing P29SIX beacon using the whip on my IC502."

Thank you for that interesting letter Wally, congratulations on your efforts on 3.456 GHz with VK6HK, and I am sure we will all be waiting to see if you can grab that Australian distance record.

Wally also sent details of the 54.1 MHz radar being built at the Buckland Park field station of the University of Adelaide for atmospheric studies. For those interested the radar will operate with a pulse length of 6.7 us., repetition frequency 1024 Hz, peak power 40 kW with a mean power of 329W, height resolution 1 km, beamwidth (half power) 3 degrees and the power-aperture product $2.4 \times 10^6 \text{ Wm}^2$.

As of May 1982 the station is about half completed and will operate in a similar manner to other coherent phased array atmospheric radars. Its applications will be important to work in the meteorological field and there is a particular application to aviation. The availability of continuous observations of winds in the troposphere and lower stratosphere will allow better flight planning for efficiency and economy. It has been estimated that such observations lead to annual fuel savings of up to \$109 in the US. When completed the VHF radar will give continuous monitoring of winds and turbulence up to about 30 km. It is situated adjacent to the large 2 MHz radar which gives similar information for the ionized region between 55 and 100 km. This is the only VHF radar of its type in the southern hemisphere. I am indebted to "The Australian Physicist", vol. 19, May 1982, for the above information. It will be interesting to see what effect this radar will have on the 6 metre band in VK5.

CORRECTION

A short note from Eric Trebilcock L30042 corrects an item in May 1982 AR where, on page 20, column 1, paragraph 3, line 7, I said C32AB in the Line Islands Group should be worth working . . . it should read T32AB as C3 is Andoora in Europe. Please make that correction, and I thank Eric for drawing my attention to that error.

OVERSEAS NEWS

Not a lot to report at the moment. However, "The Short Wave Magazine" reports that Henry Wilson EI2W sent in a sheet listing "firsts" from EI to many other countries on 6m, 4m, 2m and 70 cm, many of which he holds himself. During cycle 21, EI2W made 3,020 QSOs on 6 metres and worked 741 different stations on SSB, in all W call areas, and in VE 1-4.45 US States were contacted, as well as stations in I, KP4, KV4, XE and 5B4. EI stations do not now have the use of the band.

Also reported was an SWL who received stations and beacons in 18 countries between 16/12/79 and 25/11/81, being C5, EL, FY7, HI, I, K, KP4, KV4, PA, VE, VP2V, VS6, YV, ZB2, ZS3, ZS6, 5B4 and 8P6. He used a converter to a FRG-7000 received and a groundplane! Looks like the

UK had plenty of exotic signals landing there without the ability to work them.

The May 1982 CQ magazine from Japan (courtesy JR6IGG and VK6RO) contains information of contacts being made by 5Z4CS in Kenya on 50.105, and operated by JE1JKL, on 28/3/82, with JA1IDJ, JA6IMJ, JA4MBM, JA4IUO. One wonders if there was any part of the world which could not have been contacted on 6 metres at some time or other during cycle 21 had facilities existed for contacts to be made. I DOUBT IT.

That seems to be most of the news for this time. Good luck with the 6 metre winter DX, which should be available in July. Closing with the thought for the month: "A CLOSED MIND, LIKE A CLOSED ROOM, CAN BECOME AWFULLY STUFFY."


73. The Voice in the Hills. ■

**FROM IMBC NEWS —
ONES FOR THE ROAD**

Wollongong police stopped a car at two in the morning and asked where the driver was going in such a hurry? "I'm on my way to a lecture," replied the motorist.

Naturally curious, the police asked where the lecture was being held. The man gave an address identical to the one on his driving licence. "And just who will be giving this lecture?" inquired one constable.

The driver looked at him sadly and said, "My wife".



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W0618



**MODEL DM-801
DIP METER**

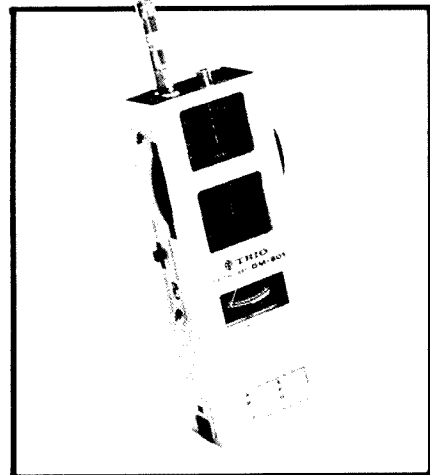
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\$116.00**

INC. POSTAGE

WRITE FOR BROCHURE

FEATURES:

- Measurable frequency range is 700kHz to 250MHz in seven bands
- A capacitive probe allows measurements without removing coil shields
- All seven dip meter coils, capacitive probe, earphone and ground clip lead, can be carried within the unit for easy transport and storage
- Convenient for both indoor and outdoor measurements, all solid-state and built-in battery
- HC-25U and FT-243 sockets enable use as a crystal checker and marker generator
- Amplitude modulation is convenient in aligning receivers when using your DM-801 as a signal generator. Also, when used as the marker generator, amplitude modulation is helpful in precisely calibrating the dial scale even for a receiver having no BFO
- An FET and transistor are used in the meter circuit to provide extremely good sensitivity
- As an absorption frequency meter, your DM-801 is both to align transmitters and measure field strength
- An earphone plug allows you to monitor transmit signals
- It is possible to measure resonant circuit frequencies of toroidal coils. This is not possible with conventional dip meters.



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CONTESTS

Reg Dwyer VK1BR
PO Box 236, Jamison, ACT 2614



REMEMBRANCE DAY CONTEST 1982

Please note the changes

AUGUST 14th-15th

This contest is held to commemorate those amateurs who died during the Second World War and is designed to encourage friendly participation between all amateurs and to help in the improvement of operating skills of all participants.

This contest is held annually during the weekend nearest the 15th August, the date on which hostilities ceased in the South-west Pacific area.

The contest is preceded by a short opening address on all WIA frequencies by a notable personality.

A perpetual trophy is awarded annually for competition between Divisions of the Wireless Institute of Australia. It is inscribed with the name of those who made the supreme sacrifice and so perpetuate their memory throughout amateur radio in Australia.

The name of the winning Division each year is also inscribed on the trophy and, in addition, the winning Division will receive a suitable certificate.

OBJECTS

Amateurs in each VK call area will endeavour to contact other amateurs:—

1. In other VK call areas, P29 and ZL on all bands 1.8 through 30 MHz, except 10 MHz.
2. In any VK call area (including their own), P29 and ZL on authorised bands above 52 MHz and as indicated in Rule 5.

CONTEST DATE

0800Z 14th August, 1982, to 0759Z 15th August, 1982.

All amateur stations are requested to observe 15 minutes silence before the commencement of the contest on Saturday afternoon. An appropriate broadcast will be relayed from all Divisional stations during this period.

RULES

1. THERE SHALL BE 4 SECTIONS:—

- (a) Transmitting Phone.
- (b) Transmitting CW.
- (c) Receiving.
- (d) Open.

2. ALL AUSTRALIAN AMATEURS (VK call sign) may enter the contest whether their stations are fixed, portable or mobile. Members and non-members of the Wireless Institute of Australia are eligible for the awards.

3. AMATEURS MAY USE THE FOLLOWING MODES:—

- Section (a) — AM, FM, SSB, TV.
Section (b) — CW, RTTY.
Section (c) — All above.

4. CROSS MODE OPERATION is permitted. Cross band operation is not permitted excepting via satellite repeater.

5. SCORING CONTACTS:—

- (a) On all bands a station in another call area may be contacted once on each band using each mode. That is, you may work the same station on each of these bands on Phone, CW, SSTV and RTTY.
- (b) All contacts score one point.
- (c) On the bands 52 MHz and above, the same station in any call area may be worked using any of the modes listed in Rule 3 at intervals of not less than one hour since the previous same band/mode contact. However, the same station may be contacted repeatedly via satellite not more than once by each mode on each orbit.
- (d) Acceptable logs for all sections shall show at least 10 valid contacts.

6. MULTI-OPERATOR STATIONS ARE NOT PERMITTED (except as in Rule 7), although log keepers are allowed. Only the licensed operator is allowed to make a contact under his/her own call sign. Should two or more licensed operators wish to operate any particular station each will be considered as a contestant and must submit a log under his/her own call sign.

7. CLUB STATIONS may be operated by more than one operator, but only one operator may operate at any one time, i.e. no multi-transmission. All operators must sign the declaration.

8. ENTRANTS must operate within the terms of their licences.

9. CYPHERS:—

The serial number will consist of three figures that will be incremented by one for each successive contact. A contestant may start with any number between 001 and 999, but when 999 is reached he will start again at 001.

10. ENTRIES:—

Entries must be set out as shown in the example using one side of paper only. Envelopes must be marked "Remembrance Day Contest", post-marked no later than 15th September, 1982, and posted to FCM, Box 236, Jamison 2614, and received not later than 30th September, 1982.

11. TERRESTRIAL REPEATERS:—

Contacts via terrestrial repeaters are

not permitted for scoring purposes. However, contacts may be arranged through the repeater and, if successful on another frequency, that contact counts for scoring purpose.

12. PORTABLE OPERATION:—

Log scores of operators located outside their own call area will be credited to that call area in which the operation takes place, e.g. VK5XY/2. His score is added to the VK2 scores.

13. ALL LOGS shall be set out as in the example shown and, in addition, must carry a front sheet showing the following information in this order:—

Section, score, call sign, mode, name and address.

Declaration: "I hereby certify that I have operated in accordance with the rules and spirit of the contest."

Signed Dated

14. THE FEDERAL CONTEST MANAGER has the right to disqualify any entrant who, during the contest, has not observed the regulations, or has consistently departed from the accepted code of operating ethics. The Federal Contest Manager also has the right to disallow any illegible, incomplete or incorrectly set out logs.

15. THE RULING of the Federal Contest Manager of the WIA is final and no disputes will be entered into.

AWARDS (Sections (a) and (b))

Certificates will be awarded to the top scores in each section for each call area and will include the top limited and novice station. There will be no outright individual winner. Further certificates may be issued by the FCM at his discretion.

Certificates will be issued to top ZL and P2 scorers.

VK0 scores are added to VK7 and VK8 to VK5. Scores by VK9 stations are added to the mainland call area geographically nearest. Scores claimed by ZL and P2 stations are not included in the scores of any VK call area.

The trophy shall be forwarded to the winning Division in its container and will be held by that Division for the specified period.

RECEIVING SECTION

1. THIS SECTION is open to all shortwave listeners in Australia, Papua New Guinea and New Zealand, but no active transmitting station may enter.

2. CONTEST TIMES and logging of stations on each band are as for transmitting.

3. ALL LOGS shall be set out as in the example. It is not permissible to log a station calling "CQ". The detail shown in the example must be recorded.

- NOTE the times and conditions set out in Rule 5 (transmitting).
- CLUB STATIONS may enter this section. All operators must sign the declaration.

AWARDS FOR SWLs

Certificates will be awarded to the highest scores in each call area. Further certificates may be awarded at the discretion of the Federal Contest Manager.

EXAMPLE OF TRANSMITTING LOG

Date/time, call sign, number, number points, GMT, band, mode worked, sent, received.

EXAMPLE OF RECEIVING LOG

Date/time, call sign, number, station, points, GMT, band, mode heard, sent, called.

1620	28	P	VK3NAA	077	VK6NZZ	1
0612	7	P	VK5PS	002	VK6RU	1
0618	14	P	VK0ZZ	006	VK6FI	1
0615	7	CW	ZL2AZ	004	VK4KI	1

THE CONTEST SCORE FORMULA

Participation factor \times activity factor \times weighting factor = logs entered \times total contacts made \times w/factor, total licences issued, logs entered.

This simplifies to:—

Total contacts made \times weighting factor, total licences issued.

WEIGHTING FACTORS FOR 1982

Based upon historical data and a linear least square regression fit to that data the predicted 1982 weighting factors become:

VK1	1.2	VK5/8	2.1
VK2	10.7	VK7	0.9
VK3	7.8	VK6	1.5
VK4	4.8		

Should each State perform equally as well in 1982 as in the past eight years (averaged), the results will become a seven way dead heat. Consequently, the most improved State will take the trophy and also earn a revised and lower weighting factor for the following year.

DUPE SHEETS

To assist in speeding the results of the contest, you can include a dupe sheet with your log.

This dupe sheet assists you in determining your previous contacts and assist me by providing me with an accurate log.

Republished here for your assistance is a method of producing a dupe sheet, which will take very little time to complete during a contest and will save all that looking through log sheets to see if you are duplicating your contact again. It should also provide a faster turnover of contacts. I strongly advise your use of this sort of exercise.

Dupe sheet is republished from an article in AR July 1981 by John Moulder VK4YX.

DUPE SHEET FOR THE REMEMBRANCE DAY CONTEST

Avoid duplications on your log sheets during a contest can be a problem, even if you have only worked 50 contacts. The method I am about to describe is not

original. I came across an article in a 1960 edition of AR, which described a method of using a dupe sheet for each VK call area, plus one for ZL and P29. As you can probably surmise, it was evolved for the annual RD contest.

Juggling a few sheets during a contest didn't appeal, so I adopted the basic idea and came up with the following.

I obtained a sheet of thin white cardboard approximately 60 centimetres square from the newsagent. I measured in 4 centimetres from each side and drew a border. Along the top and bottom and likewise down each side, make a mark each 2 centimetres. Draw a grid pattern by interconnecting all the marks top and bottom and side to side. At the top and bottom of each column, starting from the left-hand side, mark each letter of the alphabet. Do the same down each side, starting at the top.

The top left-hand corner should look like Fig. 1.

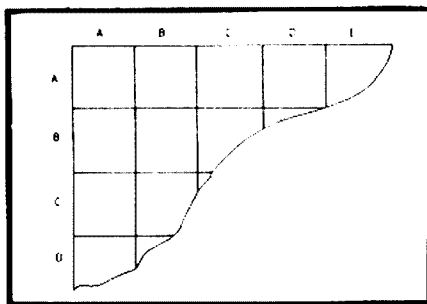


FIGURE 1

Along the top of the cardboard we label FIRST CALL LETTER. Down the sides we label SECOND and THIRD CALL LETTERS. We are now ready to go.

As an example, say we worked VK8BD on 15 metres. Looking across the top of the sheet, we locate column B; down the side we locate column D; in the intersecting square we write, 8/15. See Fig. 2. If you worked P29BD on 10 metres, you would enter P29/10 in the same square. We can take two further steps if needed. You may like to enter the mode after the call sign and the time of contact, if it can be squeezed in.

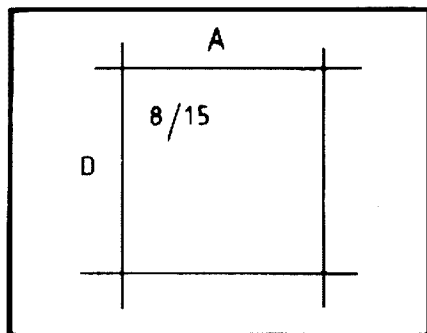


FIGURE 2

Very clever you may be thinking, but what about a call sign with a three letter suffix? As an example we'll say we worked VK7BCC on 80 metres CW, and ZL2BCA

on 15 metres SSB. We locate our intersecting square of B C, and we enter 7C/80CW. Underneath this entry we write ZL2A/15SSB. See Fig. 3. All the information can be fitted in a 2 centimetre square if you use a fine tipped pen. You could use larger squares, however the size of cardboard needed may make it too unwieldy. This system is used hand in hand with your normal log sheets. What I did was work a string of stations, enter them on the dupe sheet, and then continued on in a merry way.

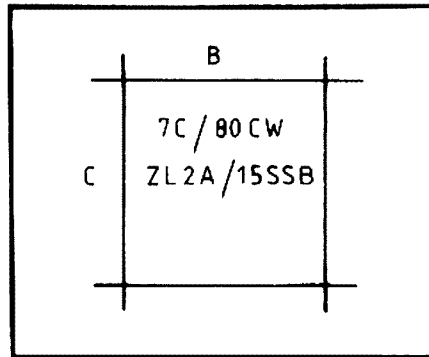


FIGURE 3

The only problem I can envisage, is the size of the sheet may make it unworkable for some operators. I got around the problem by taking over the kitchen table, which just happens to be beside our wood burning stove (very cosy). I had a great time during the 1980 RD. I made my best score, with no duplications. Unfortunately I completely forgot to send my log sheets in. Give this system a go. ■

JOHN MOYLE FIELD DAY RESULTS

COMMENT

There were quite a few logs received for the contest and it is quite evident that considerable effort was put into all the contest activities and into the quality of the submitted logs; for both of these, thank you.

SCORING

The scoring method seems to have been understood by most of the entrants, however some of you have mis-scored your logs. I have not re-scored these logs as the time involved to do this is prohibitive.

The correct method for scoring is as follows for a portable station contacting:—

- Home station in the same call area (VK2/P to VK2/Home) = 2.
- Home station in another call area (VK2/P to VK3 or JA home) = 5.
- Portable station in same call area (VK2/P to VK2/P) = 10.
- Portable station in another area (VK2/P to VK4/P or WA/P) = 15.

These are an example only and this method can be applied to the rest of the scoring table.

RESULTS

Well, it seems that the VK4s were out in force again this year, and their efforts certainly have paid off. Letters from some of

the VK4 stations have mentioned that the weather conditions were quite favourable this year and the normal rainy weather was not experienced.

Quite outstanding efforts have been shown by many other stations as the results show.

THE RESULTS

SECTION A — 24 hour

Call	Points	Call	Points
VK5QX*	1887	VK4XZ	526
VK5ABS	1151	VK3DHJ/4	413
VK5AZF	845	VK2DBA	365
VK5ZF	775	VK2UC	362

— 6 hour

VK3WP*	956	VK2AMV	225
VK2EOR	776	VK3XU	198
VK2BQS	591	VK2BQW	112
VK3ADW	547		

SECTION B — 24 hour. Nil entries.

— 6 hour

VK4VDG*	204	VK2JM	100
VK2BRC	150		

SECTION C — 24 hour

VK5VD*	1157		
— 6 hour			
VK3SP*	1274	VK1DL	652
VK2EL	1139	VK2ABZ	478

SECTION D — 24 hour

VK4WIZ*	19151	VK4WIP	3591
VK3ANR	10932	VK5BW	3145
VK4WII	6355	VK5LZ	2851
VK5SR	5535	VK5BPA	1070
VK5ACA	3602	VK2AGH	455

— 6 hour

VK4WIN*	4422	VK2AZD	1360
VK4WIM	1794	VK2BOR	1053
VK3BYY	1759	VK3DBS	883
VK4WID	1709	VK2PJ	743

SECTION E — 24 hour

VK3APC/		VK1WI	3790
VK3ATL*	10667	VK4CAU	3502
VK3ATM	10571	VK3AWS	3332
VK3BML	8998	VK2BTZ	2073
VK2DBK	7767	VK8DA	1541
VK2WG	7003	VK3BHD	1429
VK3XK	3809		

— 6 hour

VK3SAS*	2708	VK3BSP	1147
VK3ER	2096	VK3AUI	1102

SECTION F — 24 hour

VK3YIW*	1724	VK2KBN	1016
VK2YUP	1609	VK4XZ	484
VK1WI	1469		

— 6 hour

VK2DCL*	467	VK5ZTP	192
VK2BGF	387		

SECTION G — 24 hour

VK2ZMP*	770	VK2DYS	265
VK4AIX	755	VK3YRP	300
VK4KAU	330		

— 6 hour

VK2CBF*	810	VK1NEJ	295
VK2LS	517	VK3LC	220
VK1RH	425	VK2AUI	80
VK7FD	315		

SECTION H — 24 hour

L30042*	500	VK4UG	160
— 6 hour			
L60036*	405	CHECK LOG	
		VK3ALD.	

The * sign depicts a certificate winner.

CONTEST CALENDAR

July

3-4	VENEZUELAN PHONE	CQ
10-11	IARU RADIOSPORT	CQ
17-18	INTERNATIONAL QRP	CQ
17-18	COLUMBIAN	CQ
17-18	SEANET CW	CQ
24-25	VENEZUELAN CW	CQ
24-26	COUNTY HUNTERS CW	CQ

August

7-8	EUROPEAN CW	CQ
14-15	REMEMBRANCE DAY	AR
14-15	SEANET PHONE	CQ
21-22	ALASKA QSO PARTY	CQ
21-22	SARTG RTTY	CQ
28-29	ALL ASIAN CW	AR 6/81

September

5	BULGARIAN CW	
11-12	EUROPEAN PHONE	
11-12	G-QRP DAY	
18-19	VK NOVICE	AR
18-19	SCANDINAVIAN CW	
25-26	SCANDINAVIAN PHONE	
25-26	DELTA QSO PARTY	

October

2-3	VK/ZL/OCEANIA PHONE	
9-10	VK/ZL/OCEANIA CW	
16-17	JAMBOREE ON THE AIR	
16-17	ARCI QRP CW	
30-31	CQ WW DX PHONE	

November

13-14	EUROPEAN RTTY	
27-28	CQ WW DX CW	

December

4 to Jan. 9	1982/1983 ROSS HULL VHF CONTEST	
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RESULTS OF THE CQ WW WPX CW CONTEST FOR VK

VK3BLN	All Bands	605514	756273
VK2AYD	All Bands	439593	636231
VK2BQQ	All Bands	361260	469223
VK3AEW/1	All Bands	220096	384181
VK4UA	All Bands	173655	372153
VK3CM	All Bands	73944	255117
VK2DID	All Bands	31906	136086
VK6FS	28 MHz	207364	378188

Results of the SSB contest inadvertently left out:

VK4VU 2,832,384, gaining top all band score with 2003 QSOs and 411 prefixes.

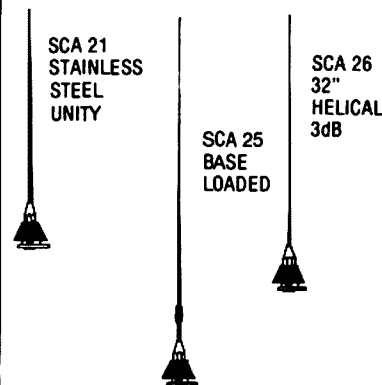
Congratulations on your win.

Apologies are extended from the CQ staff for the omission. ■

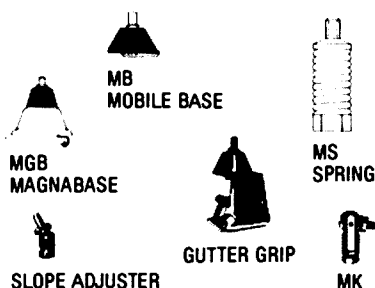
Definitions:

- The size of the cut you inflict on yourself while shaving is directly proportional to the importance of the event for which you are shaving.
- Nothing keeps a family together like having the car in for repair.
- Bigamist: Man who wants to keep two himself.
- Morse code bikini: Two dots and a dash.
- Wrong numbers are never engaged.
- Beehive: Sting ensemble.
- Paediatricians are men of little patients.

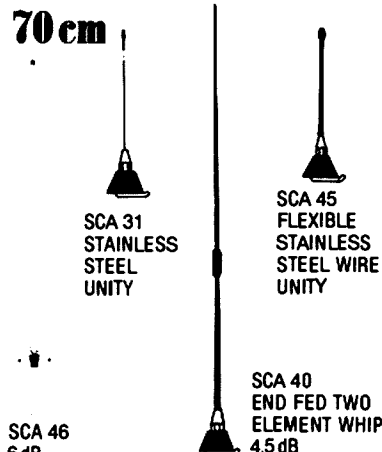
2 METRE ANTENNAS



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COVERS THE FOLLOWING 'SECRET' FREQUENCY BANDS:

66-88MHz
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144-148MHz
Amateur radio band

148-174MHz
Business radio, tow trucks, harbour marine etc

406-470MHz
Amateurs, business radio, police etc

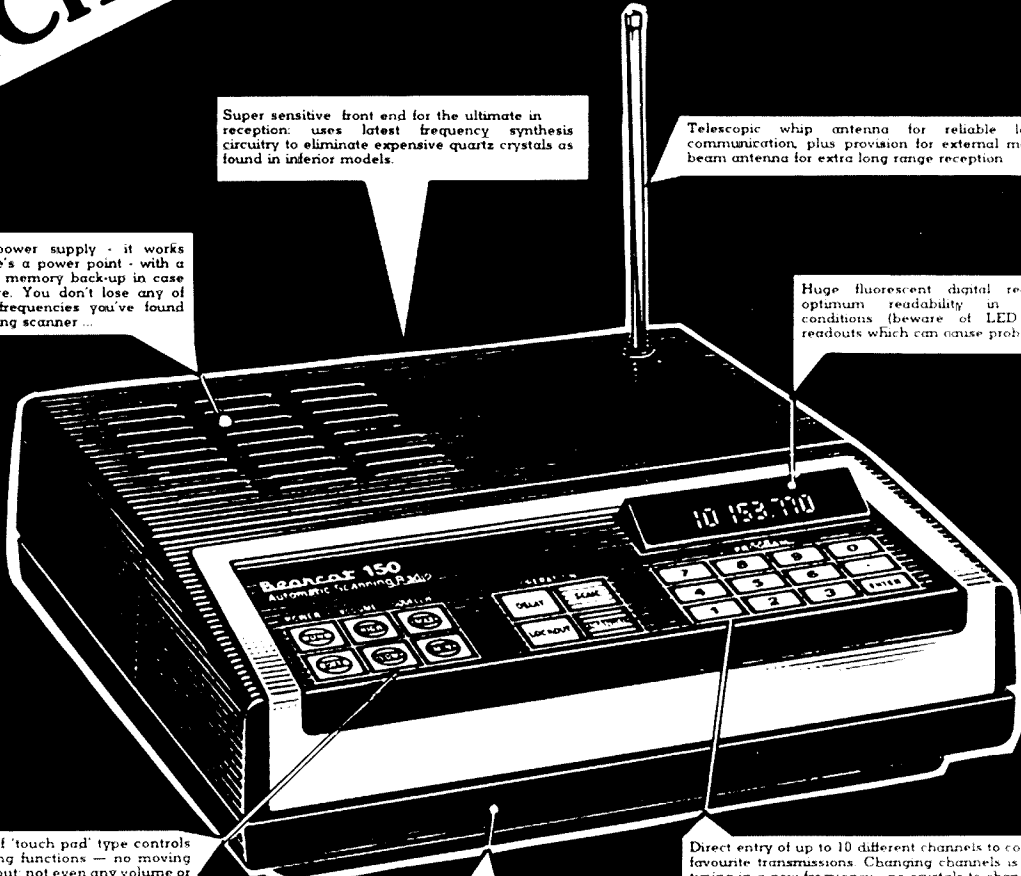
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Super sensitive front end for the ultimate in reception: uses latest frequency synthesis circuitry to eliminate expensive quartz crystals as found in inferior models.

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Inbuilt 240V power supply - it works anywhere there's a power point - with a special battery memory back-up in case of power failure. You don't lose any of those special frequencies you've found with this amazing scanner...

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Moisture proof 'touch pad' type controls for all scanning functions - no moving parts to wear out, not even any volume or other controls to get noisy! Everything is controlled by touching the keys, and each key gives you an answering 'bleep' to let you know it's understood.

Internal microprocessor integrated circuit - virtually a mini computer in one chip - to make child's play of the normally extremely complex controls and functions of the scanner. You'll only take a couple of minutes to learn to use this incredible device!

Direct entry of up to 10 different channels to cover all your favourite transmissions. Changing channels is as easy as typing in a new frequency - no crystals to change!

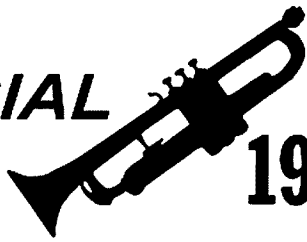
AND IT'S UNDER \$300.00!

The amazing Bearcat 150FB: Australia's lowest priced synthesised scanner radio receiver. Incredible value for all those interested in listening to stations using the VHF & UHF spectrum - includes amateurs, business, police, fire, ambulance & other emergency services. Imagine - you could be listening to tomorrow's news - today!
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1982 Federal Convention

Compiled by Peter Dodd VK3CIF
Federal Secretary/Manager

Before going into more detail here are a few brief comments about the business conducted:—

- *Rules adopted for affiliation of Australia-wide specialist amateur bodies.*
- *Heavy PR, especially for WCY83 and forward planning generally. Membership of WIA an insurance policy. Improve image of amateur radio in the community.*
- *Policy statement confirmed opposition to additional frequencies for Novices.*
- *Seek general approval to link repeaters.*
- *Keep pressing for use of 7.15 to 7.3 MHz and 50-52 MHz band segments.*
- *Encourage members to use WIA logo on QSL cards and MWIA (or AWIA) after their names.*
- *Inter-relationship between WICEN and Third Party traffic handling clarified.*
- *WIA broadcasts on new 10 MHz band not to be encouraged.*
- *WICEN calling frequencies to be established in new band/s.*
- *Federal element in pensioner grade subscriptions to remain the same as for full and associate members.*
- *Probable increase by \$2 of Federal dues for 1983 to cover increased IARU and printing costs.*
- *Concept of repeaters identifying as beacons not supported.*
- *Seek age reduction from 15 to 14 years to obtain full or limited licence.*
- *Press for phone patch facilities.*
- *ASCII standardisation is to be investigated.*

The WIA 46th Annual Federal Convention was held in Melbourne from 1st to 3rd May, 1982, at the Brighton Savoy Motel. Convention guests included the President of NZART, "Jumbo" Godfrey ZL1HV, Jamie Pye ZL2NN, Overseas Liaison Officer for NZART, also a member of Frequency Spectrum Management Group, and two DOC officers at Executive level in the Frequency Management Branch — Mr. C. W. Pike and G. W. Brain — at a dinner function.

Mr. Pike spoke at some length, after the dinner, as well as answering questions. Much of his address related to the vexed question of stickers (or labels) to identify the legitimacy of ownership and significant revenue loss of transmitting equipment, particularly in mobile use, which has been on trial in Tasmania for many months before possible introduction throughout Australia. The honest operators, he said, were having to carry the administrative costs disproportionately — an estimated annual revenue loss exceeding \$2,000,000. Amateur objections were that people, not equipment, were licensed, that stickers could lead to the imposition of equipment fees, that amateurs owned varying quantities of transmitters, both fixed and mobile, and hence amateurs had to be regarded as unique. The outcome remains inconclusive. Listeners heard with some dismay that the Government planned the greater use of VHF TV channels for increased programme options in country areas since the costs between providing UHF and VHF TV services were about 5 to 1. This change in attitude will necessitate closer vigilance on the proliferation of TV Channels 0 and 5A.

Mr. Pike could give no news about the timings when the new Australian Table of Frequency Allocations is to be released or when the proposed new Radio Frequency Management Bill will be introduced in Parliament.

"Jumbo" Godfrey assisted greatly during the Convention by describing experiences across the Tasman with many problems of a similar nature to those in Australia. The development of closer relations with IARU R3 Societies and NZART in particular were seen to be of great importance in the development of amateur radio in this part of the world. Although many amateur problems were similar in the two countries, the solutions, if any, may differ by reason of geographical, political or sociological differences between the two.

The delegates at the Convention were: the Federal Councillor and the Alternate Federal Councillor from each Division (VK5 brought a second person as an observer — VK5AMK in place of VK5AWM). Nearly all the members of the Executive were present for most of the time, in addition to David Wardlaw VK3ADW and Michael Owen VK3KI. A number of Executive Sub-Committee Co-ordinators attended to answer questions relating to their own particular specialised subjects. The Federal Council elected the Executive for the ensuing year unchanged except that Earl Russell VK3BER replaced Bill Roper VK3ARZ as a member of the Executive. The latter is stepping down for business reasons.

The RD Contest Trophy was again presented back to the VK5 Division, this time

by the President of NZART, and a small gift of an Australian book was presented by the Federal President to each of the two Kiwis. Prior to the Convention dinner Bruce Bathols VK3UV launched the new WIA Book, volume 1, during a short function held in the Executive office. At the conclusion of the Convention David Wardlaw VK3ADW spoke about the dedicated work of the Secretary, Peter Dodd VK3CIF, who is retiring in October.

Apart from debating the 40 agenda items and three general business items, the Federal Council conducted the formal statutory business required under the Companies Act, such as the adoption of the accounts for 1981, published elsewhere in this issue, and the adoption of the 16 Annual Executive Reports after much debate. The Federal President's report is also published in this issue, but it must be recognised that this year the report was produced under exceptionally difficult conditions because of the IARU Region 3 Conference in Manila being held early in April and the Federal President's own hospitalisation for a large part of the month. The statistics of licensees in this report must be regarded as close approximations this year pending stabilisation of the Department's computer programmes.

As in all recent years there were considerable discussions and explanations arising from IARU matters. The IARU R3 Conference in Manila was adjudged as the most productive of recent conferences — Directors were increased from four to five, including David Rankin 9V1RH/VK3QV taking over the new post of chairman (upon

relinquishing his duties as Secretary in favour of Masayoshi Fujioka JM1UXU) of the Board, consisting of Jose Gonzalez DU1JMG, Keigo Komuro JA1KAB, Jumbo Godfrey ZL1HV and Michael Owen VK3KI. In order to provide for the minimal needs of the Association for at least the ensuing triennium the subscriptions from member societies had to be increased by a factor of at least 4. It was resolved that financial provision had to be made to send regional observers to four ITU conferences in the period to 1986 as these potentially affected the amateur service in this Region. Other details of this Conference were included in a Conference Report, which has been sent to Federal Councillors, but it was noted that the WIA delegate abstained from voting on a motion that only narrow band emissions were to be used on the new 10 MHz band since this was inconsistent with current WIA policy. The Conference also resolved that no contest operations should be held on this band and, whilst noting that NZART were pressing for a band extension to 10.2 MHz, it was decided it was a dangerous tactic to adopt a regional policy seeking any extensions, although no restriction was placed on individual societies from making their own proposals to their own administrations.

In relation to the other annual reports these are a few highlights:—

- *Federal Intruder Watch Co-ordinator's resignation from the end of 1982.*
- *ITU Regulations relating to harmful interference are complicated and singularly unhelpful to the amateur service in the international context.*
- *Federal Education Co-ordinator congratulated on her work.*
- *Need to obtain and preserve historical material.*
- *New RD contest rules accepted.*
- *John Moyle National Field Day requires extra encouragement.*
- *Work in IARU on standardisation of QSL cards to facilitate bureaux processing.*
- *WAVCKA (VHF) Award must continue.*
- *WAVCKA Award for VKs (new rules) now available.*
- *Project Aserf Co-ordinator vacancy may now be filled.*
- *Need to make more use of information accumulation on the reception of 10 metre beacons.*
- *EMC a complex of technical, legal and social difficulties — need for vigilance on proposed new legislation.*
- *Videotapes on VHS format under active consideration.*
- *AR advertising now being conducted by office part-timer John Hill VK3DKK.*

A very considerable amount of time was spent by working groups of the Convention producing WIA policy statements on matters of concern and in a form embracing not only the policy but also the reasons why the policy was adopted. A time table was set for additional work to be done on these prior to general publication. Examples of this concept may be helpful to an understanding:—

“RECOGNISING

- *The singular stance of Australia in permitting voice bandwidth transmissions in the 10 MHz band;*
- *The present narrow width of this band, prior to possible extension (10.15 to 10.20 MHz);*

WHILST ACKNOWLEDGING

- *The possible intra-continental nature of day-time propagation on this band, and*
- *Its potential for improving broadcast services, and*
- *That a demonstrated special local need may arise, and*
- *That any broadcast should be co-ordinated Federally —*

THIS COUNCIL RESOLVES to not encourage the use of the 10 MHz band for Divisional broadcasts or broadcast link purposes.”

And here is another example:—

“RECOGNISING

- *The ability of the Amateur Radio Service to provide public service through the use of their frequency bands, specialised equipment and knowledge;*
- *The ongoing need to promote the Amateur Radio Service to the general public;*
- *A desire to develop operating skills within the Amateur Radio Service;*
- *The potential for the development of national and international goodwill;*
- *A separate need for emergency networks operating in support of official counter disaster agencies;*
- *the right of amateur radio operators to choose whether or not to be involved in such activity;*

THIS COUNCIL RESOLVES TO

- *Support the use of third party traffic handling privileges on all amateur bands and by all interested amateur radio operators;*
- *Support the existence of networks for facilitating third party traffic handling;*
- *Support the existence of emergency networks operating in support of official counter disaster agencies;*
- *Educate interested members in third party traffic handling techniques, procedures and responsibilities;*
- *Promote co-ordination between third party traffic networks and authorised amateur emergency networks;*
- *Continue to pursue the establishment of third party traffic agreements with other countries.”*

This second policy is backed up by definitions which cannot now be published solely due to space considerations in this issue.

This was indeed a productive and busy Convention. Further details will be published in later issues, and possibly will include the Forward Planning policies. The next Federal Convention will be held in Melbourne on 23rd to 25th April, 1983.

ACCOUNTS REPORT

In accordance with the Companies Act 1961 the Executive state the following:—

- (a) The names of the Executive in office at the date of this report are:—

P. A. Wolfenden	VK3ZPA
K. C. Seddon	VK3ACS
C. D. H. Scott	VK3BNG
H. L. Hepburn	VK3AFQ
B. R. Bathols	VK3UV
W. J. Roper	VK3ARZ
- (b) The principal activity of the Wireless Institute of Australia is to:—
 1. Represent generally the views of persons connected with amateur radio in the Commonwealth of Australia, its territories and dependencies.
 2. Promote the co-operation between the Divisions in the encouragement and development of amateur radio.
 3. Safeguard the interest of the Divisions and the members in relation to frequency allocations, rights and privileges.
 4. To promote the development, progress and advancement of amateur radio in all matters in relation to amateur radio in general.
- (c) The surplus of income over expenditure for the year ended 31st December, 1981, was \$16,793 compared with \$271 for 1980. There is no provision for income tax required as the Company is exempt under Section 103A (2) of the Income Tax Assessment Act.
- (d) During the year provisions were increased:—
 1. Provision for holiday and long service leave was increased by \$386 to \$12,884.
 2. Provision for superannuation — increased by \$1,000 to \$9,685.
- (e) The Executive have taken reasonable steps, before the Statement of Income and Expenditure and Balance Sheet were made out, to ascertain that action had been taken in relation to the writing off of bad debts and making of provision for doubtful debts and to cause all known bad debts to be written off and adequate provision to be made for doubtful debts.
- (f) At the date of this report the Executive are not aware of any circumstances which would render the amount written off for bad debts, or the amount of the provision for doubtful debts, inadequate to any substantial extent.
- (g) At the date of this report the Executive are not aware of any circumstances which would render the values attributed to current assets in the accounts misleading.
- (h) At the date of this report no charges exist on the assets of the Institute which has arisen since the end of the financial year and does not secure the liabilities of any other person.
- (i) There does not exist any contingent liability which has arisen since the end of the financial year.
- (j) No contingent liability or any other liability has become enforceable within the period of twelve months after the end of the financial year which in the

opinion of the Executive will or may effect the ability of the Institute to meet its obligations when they fall due.

- (k) Since the end of the previous financial year the Executive have not received or become entitled to receive a benefit by reason of a contract made by the Institute or a related corporation with the Executive or with firms of which they are members or with companies in which they have substantial financial interests.
- (l) The results of the Institute's operations during the financial year were in the opinion of the Executive not substantially affected by any item, transaction or event of a material and unusual nature. There has not arisen in the interval between the end of the financial year and the date of the report any item, transaction or event of a material and unusual nature likely in the opinion of the Executive, to effect substantially the results of the Institute's operations for the next succeeding financial year.

Dated at Melbourne this 25th day of March, 1982.

MEMBERS OF THE EXECUTIVE

(Signed) K. C. SEDDON
(Signed) C. D. H. SCOTT

STATEMENT OF INCOME AND EXPENDITURE FOR YEAR 31st DECEMBER, 1981

Income:	1981	1980
Members' Subscriptions	\$133,006	\$112,731
Interest Received	10,850	7,654
Surplus — Magpups/Book Sales	15,065	9,963
Donation — WARC/Other	24	261
	<u>158,945</u>	<u>130,609</u>
Expenditure:		
Amateur Radio (Note 1)	61,332	63,237
AMSAT	438	
Audit Fees — 1981	900	
— 1979/80	300	518
Award Payments	230	200
Bank Fees	240	10
Bad Debts	496	
Committee Expenses	1,092	261
Convention Expenses	6,256	5,529
Depreciation	1,147	552
Electricity	729	564
EDP Expenses	4,950	4,000
General Expenses	426	130
Holiday Pay and Long Service Leave Provision	386	7,306
Insurance	970	703
IARU Dues	821	
Licences and Fees	40	220
Membership Recruiting	6,747	1,477
Postage and Freight	5,143	3,895
Printing and Stationery	2,803	4,061
Rent and Rates	3,471	4,143
Repairs and Maintenance	660	174
Satellites and Special Projects	—	189
Salaries and Secretarial	38,808	30,234
Superannuation	1,000	1,000
Telephone	1,070	936
Travelling Expenses	1,707	999
	<u>142,152</u>	<u>130,338</u>
Net Surplus	16,793	271
Accumulated Funds Brought Forward	38,105	37,834
Add IARU Fund Brought Forward	1,029	—
	<u>\$55,927</u>	<u>\$38,105</u>

NOTES TO AND FORMING PART OF THE ACCOUNTS AMATEUR RADIO (Note 1)

Income:	1981	1980
Advertising	\$26,454	\$24,519
Subscriptions and Sales	2,054	2,421
Inserts and Sundries	2,725	1,896
	<u>31,233</u>	<u>28,836</u>
Expenditure:		
Awards	255	90
Debt Collection	43	297
Postage	13,175	15,252
Publishing Costs	65,391	61,411
Salaries	11,573	14,118
Travelling Expenses	2,118	905
	<u>\$92,555</u>	<u>\$92,073</u>
Excess Expenditure Transferred to General Account Representing Cost of AR to Members	\$61,322	\$63,237
RON WILKINSON ACHIEVEMENT AWARD (Note 2)		
Balance Brought Forward	\$1,273	\$1,213
Add Interest	160	110
	<u>1,433</u>	<u>1,323</u>
Less Award Payment	50	50
	<u>\$1,383</u>	<u>\$1,273</u>

BALANCE SHEET AS AT 31st DECEMBER, 1981

	1981	1980
Members' Funds:		
Accumulated Funds	\$55,927	\$38,105
Add ITU/WARC	533	533
IARU Fund	—	1,029
	<u>56,460</u>	<u>39,667</u>
Special Fund — Ron Wilkinson Achievement Award (Note 2)	1,383	1,273
	<u>\$57,843</u>	<u>\$40,940</u>
Represented by —		
Current Assets:		
Cash on Hand	41	115
Commonwealth Trading Bank	14,585	4,895
Short Term Deposits	40,382	—
Australian Savings Bonds	10,000	10,000
Australian Resources Development Bank	8,000	8,000
R.E.S.I. Buiding Society	922	40,223
Sundry Debtors — Less Provision for Doubtful Debts (\$2,000)	11,931	17,413
Stock on Hand — At Cost	9,206	7,757
Prepayments	626	—
	<u>95,693</u>	<u>88,403</u>
Non-Current Assets:		
Furniture and Fillings — At Cost		
Less Provision for Depreciation	6,506	2,207
	<u>102,199</u>	<u>90,610</u>
Deduct Current Liabilities:		
Sundry Creditors	900	6,590
Subscriptions in Advance	17,415	20,431
Provisions —		
Superannuation	9,685	6,879
Amateur Satellites	2,972	2,972
Holiday and Long Service Leave	12,884	12,498
Deposit VK4	500	300
	<u>44,356</u>	<u>49,670</u>
	<u>\$57,643</u>	<u>\$40,940</u>

EXECUTIVE STATEMENT

In our opinion

- (a) The Statement of Income and Expenditure is drawn up so as to give a true and fair view of the surplus of the Institute for the financial year ended 31st December, 1981.

- (b) The Balance Sheet is drawn up so as to give a true and fair view of the state of affairs of the Institute as at the end of the financial year.

MEMBERS OF THE EXECUTIVE

(Signed) K. C. SEDDON
(Signed) C. D. H. SCOTT

STATEMENT OF PRINCIPAL ACCOUNTING OFFICER

To the best of my knowledge and belief the accounts for the year ended 31st December, 1981, give a true and fair view of the matters contained in Section 162 of the Companies Act 1961, and required to be dealt with in the accounts as presented.

PRINCIPAL ACCOUNTING OFFICER
(Signed) P. B. DODD

AUDITORS' REPORT TO THE MEMBERS OF THE WIRELESS INSTITUTE OF AUSTRALIA

1. In our opinion, the accompanying accounts, which have been prepared under the historical cost convention, are properly drawn up in accordance with the provisions of the Companies Act and so as to give a true and fair view of:—

- (a) 1. The results of the Institute for the year ended 31st December, 1981, and the state of its affairs at that date.
2. The matters required by the Companies Act to be dealt with in the account.
- (b) The accounting records and other records and registers, required by the Act to be kept by the Company, have been properly kept in accordance with the provisions of that Act.

HEBARD & GUNNING,
Chartered Accountants
Melbourne
(Signed) P. W. HEBARD
25th March, 1982.

REPORT OF EXECUTIVE

It is with pleasure that I present this Report of the Executive for the year 1981-82.

The Federal administration arm of our Institute has again had a very busy and demanding twelve months albeit in the ambience of a levelling out in amateur population and Institute membership.

1. MEMBERSHIP

- 1.1 Membership of our Institute has grown during the past twelve months; 7,879 in 1980 to 8,074 in 1981 (see Table 6).
- 1.2 However, as predicted in last year's report, official DOC statistics this years are a little difficult to interpret due to a number of factors.
- 1.3 Official licence figures show a decrease in the total amateur population from 14,906 in 1980 to 14,750 for 1981 (see Table 5).
- 1.4 This is partially explained by the K call absorbing some limited and novice licences.
- 1.5 However, it is suspected that not all DOC figures are up to date, particularly for NSW.

- 1.6 Table 5 indicates an 11 per cent reduction in total licences in that state — a reversal on previous years where significant growth has been achieved: Last year approximately 20 per cent.
- 1.7 We are attempting to confirm these statistics at the time of preparing this Report.
- 1.8 **Marketing Campaign.** A national Marketing Campaign was launched in November 1981, during which a copy of Amateur Radio magazine, together with a brochure about the WIA, was posted to every known licensed amateur. This was further supported by Sunday morning broadcasts.
- Some Divisions derived greater benefits than others from the campaign and the overall result is still difficult to determine. However, in the short term it is considered that a better result could have been obtained if we had allowed more time for planning and implementation of the campaign.
- 2. FREQUENCY ALLOCATIONS**
- 2.1 **30m Band.** The new 30m ("WARC") band 10.1-10.15 was made available to Australian amateurs on a secondary basis from 1/1/82. At the time of preparing this Report only a few administrations have made the band available to their amateurs.
- 2.2 Australia is one of the very few countries permitting phone operation — most restrict operation to narrow band — CW or RTTY — transmissions.
- 2.3 **6m Band.** The apparent excessive duration of test pattern transmissions by SSB Channel 0 stations, thus unreasonably restricting amateur use of 52-54 MHz, has been discussed with DOC both at State (NSW) and national levels.
- 2.4 Methods of re-opening at least part of the 50-52 MHz band to the amateur service have been continually explored, particularly in relation to the Australian Frequency Table, which proposes 50-52 MHz be allocated to the amateur service on a secondary basis.
- 3. LICENSING**
- 3.1 **Licence Fees** were again increased during the past year. Full and Limited licences were increased from \$15 to \$17 and Novices from \$10 to \$14.
- 3.2 Like so many Government charges the increases were somewhat greater than CPI or inflation rates — a trend which is being monitored carefully.
- 3.3 **A New Emission designation system,** as a result of WARC 79, came into force on the 1st January, 1982. Details were published in AR of September 1981, page 26.
- 3.4 **"Sticker Licensing",** perhaps the year's most contentious issue, envisaged the attachment of identification stickers to ALL transmitters and was initiated on a trial basis in Tasmania by DOC, without the prior knowledge of the Institute. Each piece of transmitting equipment was to be allocated a serial number and a register appears to have been proposed.
- 3.5 The Institute is opposed to such a scheme if for no other reason than in the amateur service the person is licensed and not the equipment!
- 3.6 At the time of preparing this report, it is understood that a hiatus exists together with a strong possibility that the amateur service may be finally exempt from any such scheme.
- 4. REPRESENTATION TO THE DEPARTMENT OF COMMUNICATIONS**
- 4.1 Regular formal joint WIA/DOC meetings have been held during the year, these were of course in addition to numerous contacts with DOC officers over specific issues.
- 4.2 **Non-Examinable Sections of the "Handbook"** have been largely resolved, though a few items remain in abeyance.
- 4.3 **Examination Statistics** have been made available to the Institute's Education Officer and have been of assistance.
- 4.4 **Procedures for Visitors/Reciprocal licences** issuing and acceptable certification of licences, particularly with respect to speeding up the present system. Simplifying administrative procedures has been discussed but not yet finalised.
- 4.5 **Third Party traffic privileges** with the USA is on the way to being finalised.
- 4.5.1 In addition the PNG Administration has expressed some interest.
- 4.5.2 During the year, Australia approached the Brazilian authorities for an ad hoc third party arrangement — particularly for use during the Sydney-Rio Yacht Race. Brazil refused to enter an agreement.
- 4.6 **Portable Repeaters,** for use under certain conditions, was approved.
- 4.7 Other matters under consideration included:—
- 4.7.1 Morse credits — carry over.
- 4.7.2 Club — station — use.
- 4.7.3 Log Keeping — now mandatory.
- 4.7.4 "C" Calls — use.
- 4.7.5 28 MHz Beacon — band planning.
- 4.7.6 Duration of (SBS) Channel 0 Test Transmissions — interference to amateur service.
- 4.7.7 Prosecutions reporting — for AR magazine and general publicity.
- 4.7.8 Phone Patch.
- 4.7.9 Multiple Call Signs.
- 4.7.10 AX Prefix — for special events.
- 4.7.11 Abbreviated Call Signs — especially for WICEN operation.
- 4.7.12 New Legislation — new Act.
- 4.7.13 Interference — EMC.
- 4.7.14 Amateur Advisory Committee.
- 4.7.15 Repeater Linking.
- 4.7.16 Primary Services in 70 cm Band (dredges QLD).
- 5. FORMAL SUBMISSIONS**
- 5.1 A formal submission was made to the Cable and Subscription TV Inquiry. This was prepared from material supplied by our EMC Co-ordinator and FTAC and was a follow-up to a brief submission made in October 1980.
- 5.2 A submission was made to the Australia Post Inquiry.
- 6. SPECIALIST AND ADVISORY COMMITTEES**
- Details of the activities of the various specialist committees will be found in their annual reports to this Convention. However, the following are worth noting:—
- 6.1 **EMC.** During the year the EMC Advisory Service completed its first full year under Co-ordinator Tony Tregale VK3QQ. Not only has the service been of great assistance to individual amateurs in their "hour of need", but it has also helped greatly in supplying detailed information to assist Executive.
- 6.2 **Intruder Watch.** During the year Graeme Fuller VK3NXI resigned as Intruder Watch Co-ordinator. We sincerely thank him for his work in this area.
- 6.2.1 Bob McKernan VK4LG took over and has been most active.
- 6.2.2 During the year a concerted effort was made to ease the OTHR problem. The Institute published a special article in AR (May 1981), and followed up with a carefully worded letter to the Minister of P. and T., as did many individual amateurs.
- 6.2.3 Concern has been expressed at an apparent philosophy emerging in Ministerial replies, which included reference to the amateur service as being "frequency agile" and thus not requiring protection from harmful interference and so would be subject to different treatment. This philosophy the Institute rejects.
- 6.3 **AMSAT-Australia.** Another change during the year involved Charlie Robinson VK3ACR taking over from Dave Hull VK3ZDH as AMSAT-Australia Co-ordinator. Our sincere thanks to both he and Bob Arnold VK3ZBB — the latter is not fading from the scene and is still very much involved in satellite work. With the aid of his well equipped station, Charlie has been able to

keep in regular direct contact with International AMSAT nets, as well as the weekly Australian net.

- 6.4 *Education Co-ordinator.* Brenda Edmonds VK3KT was appointed Federal Education Co-ordinator at last year's Convention and deserves the support of us all for the concerted efforts she has made in this important portfolio.

Progress is certainly being made in areas such as:—

Regular notes in AR magazines, Liaison with DOC and sample exam papers to name but a few.

But like so many Institute responsibilities she needs continuous support and feedback, especially from those involved with running licence classes.

- 6.5 Other Committee changes during the year included: Federal Contest Manager — Wally Watkins VK2DEW to Reg Dwyer VK1BR. Federal Awards Manager — Bill Verrall VK5WV to Mike Bazley VK6HD.

- 6.6 *Amateur Radio Magazine.* Amateur Radio magazine, our official journal, has continued at a high standard under the Publications Committee and the Editor, Bruce Bathols.

In this era of commercialisation it is perhaps a little difficult for many of us to comprehend the fact that so much editorial and associated work is still being done on our behalf by unpaid volunteers.

One major change during the year has been to let out the final production work to Betken Productions, an outside contractor, instead of this work being carried out by office staff. This change has only recently taken place and results to date are very encouraging.

7. IARU AND POST WARC

- 7.1 David Wardlaw and Michael Owen have continued their deep involvement in these areas.

- 7.2 The importance of CCIR to the amateur service — a subject of a paper to be considered at the IARU Region 3 Conference held in Manila during the first week of April.

- 7.3 Other papers proposed by the Institute for the Conference are:—

Non-ionizing Radiation and the Radio Amateur, an information paper by Jim Lloyd VK1CDR.

- 7.4 Radio Frequency Interference — WIA Approach, an information paper by Tony Tregale VK3QQ.

- 7.5 Visitor's Licences for Amateurs.

- 7.6 WCY 1983.

- 7.7 Novice Licensing in Australia.

- 7.8 General status report on amateur radio and the WIA.

- 7.9 Michael Owen, as a Director of IARU, has prepared his Director's

Report and another paper dealing with the Review of the International Amateur Radio Union Constitution, which includes the broad policies adopted by the Federal Council at last year's Federal Convention.

- 7.10 The Conference will be hosted by the Philippines Amateur Radio Association, PARA, and will be attended by IARU Liaison Officer David Wardlaw, with Federal President Peter Wolfenden as second. Michael Owen will be in attendance, not as an Australian Delegate, but as a Region 3 Director.

- 7.11 *NZART Exchange Visit.* On invitation from NZART, the WIA attended the NZART Conference in Auckland last year. The WIA was represented by Michael Owen and David Wardlaw.

This year the Institute has invited representatives of the NZART to attend this Federal Convention.

8. MISCELLANEOUS

In the past I have used this section of the Report to reflect on a few personal views. This year I raise only one issue, for I believe that it is paramount that we now address ourselves to it.

Public Relations. Now possibly more than ever before we need to address ourselves to the need for co-ordinated public relations, not only orientated towards the Institute but amateur radio itself. There are four main reasons for this need:

1. The accelerated growth rate, both in the amateur population and Institute membership, due to the CB boom and novice licensing, which appears to have reached its peak;
2. The current economic climate is such that individuals are constrained in their spending habits, especially where less apparent tangible benefits are involved such as membership and representation;
3. World Communication Year is scheduled for next year and amateur radio must be involved if we wish to retain a public profile;
4. 1985 is the 75th anniversary of the Institute.

At the very least, standard publicity packages are required — perhaps including posters, information and advice for those clubs and individuals wishing to promote amateur radio in their district.

But more properly, an overall strategy is needed with an appropriate group being responsible.

9. EXECUTIVE

- 9.1 The Executive for 1980/81 was elected as follows:—
Peter Wolfenden VK3KAU
Federal President, Chairman

Bruce Bathols VK3UV
Executive Vice Chairman, Editor
AR

Courtney Scott VK3BNG
Hon. Treasurer and Chairman
Finance Sub-Committee

Harold Hepburn VK3AFQ
DOC Negotiations and Intruder
Watch

Ken Seddon VK3ACS
EMC and Contests
Bill Roper VK3ARZ
Member

- 9.2 Whilst not members of Executive, David Wardlaw VK3ADW, Michael Owen VK3KI and Bill Rice VK3ABP attended Executive meetings and were of great assistance during the year.

- 9.3 A number of others also attended Executive meetings during the year and details are shown in Appendix 2.

- 9.4 Many other people assist in the operation of the Institute; many in specialist capacities sharing the considerable workload with the Executive:—

IARU and R3 Liaison Officers
Mr. M. Owen VK3KI
Dr. D. Wardlaw VK3ADW
AMSAT-Australia
Mr. C. Robinson VK3ACR
Federal Intruder Watch Co-ord.
Mr. R. McKernan VK4LG
Fed. Technical Advisory Committee
Mr. W. Rice VK3ABP
Federal Education Co-ord.
Mrs. B. Edmonds VK3KT
Federal Historical Officer
Mr. G. M. Hull VK3ZS
Federal Contest Manager
Mr. R. Dwyer VK1BR
VK/ZL Contest Manager
Mr. N. Penfold VK6NE
Federal QSL Manager
Mr. N. Penfold VK6NE
Federal Awards Manager
Mr. M. Bazley VK6HD
Federal EMC Co-ordinator
Mr. A. Tregale VK3QQ
Federal WICEN Co-ordinator
Mr. R. Henderson VK1RH
Federal Video Tape Co-ordinator
Mr. J. Ingham VK5KG
Ch. Fed. Finance Sub-Committee
Mr. C. Scott VK3BNG
Chairman Publications Committee
Mr. B. Bathols VK3UV

- 9.5 There are, of course, many others not listed here who serve the Institute. People like John Hackworth VK5QZ, Records Claims Invigilator, Ron Fisher VK3OM and Bill Roper VK3ARZ, Broadcast Tapes, and the members of the various specialist Committees, all of whom contribute greatly.

On behalf of WIA members and the Executive, I thank them all.

- 9.6 *Federal Councillors' Handbook.* During the year Ron Henderson VK1RH prepared a draft for the Federal Councillor's Handbook.

We thank Ron for his valuable work to date.

10. OFFICE AND STAFF

10.1 The workload on the office continues to grow with increased membership.

10.2 Running the risk of repeating part of last year's report, It is essential that we maintain an efficient central nucleus for the operation of our dispersed Institute, which relies so heavily on volunteers spread right across Australia.

10.3 Because of membership growth and because individuals are less prepared to volunteer their time these days, more and more work is having to be done by paid staff.

10.4 We must bear this in mind as we consider the future plans for our organisation. Salaries and associated costs are a major consideration.

10.5 I would like to personally thank our hard working employees and also those contractors who have contributed to the operation of the Institute during the year.

10.6 Present staff are:—
Mr. P. B. Dodd, Secretary/Manager.
Mr. C. W. Perry,* Membership Records/EDP.

Mrs. A. McCurdy,* Secretarial and general duties.

Mr. J. Hill,* AR Advertising.

* Part time.

Retirement. It is anticipated that both Mr. P. Dodd and Mr. W. Perry will be retiring during October this year, as a result of the retirement policy established during the year.

10.7 In conclusion, I would like to thank all officers of the Institute who gave so readily of their time during this last year. I would also like to thank the many individual amateurs who have offered assistance and guidance during the year. They have, I believe, all contributed to the state of the art of amateur radio in Australia.

(Signed) P. A. WOLFENDEN VK3KAU
Federal President.

APPENDIX 2

Attendance at Executive Meetings from 21st May, 1981, to 25th March, 1982, inclusive.

	Attended	Maximum
Mr. P. Wolfenden	14	14
Mr. B. Bathols	13	14
Mr. H. Hepburn	9	14
Mr. W. Roper	9	14
Mr. C. Scott	12	14
Mr. K. Seddon	6	8

Mr. Seddon was on extended leave in USA.

Mr. M. Owen 4

Dr. D. Wardlaw 9

Also attended: Messrs. P. B. Dodd 14/14, W. Rice 13, E. Russell 2, J. O'Shannassy 1, M. Thorn 1, L. G. Baly 3, T. Pitman 2, B. Edmonds 1, T. Tregate 1, D. Rankin 1, J. Aarsse 1.

Appendix 1

Membership Statistics. These have been compiled on the same basis as in previous years. It should be noted that DOC statistics refer to licences issued (subject to re-check), whereas WIA statistics refer to the number of individual amateurs. All statistics are for 31st December, 1981 (previous year in brackets, same date).

TABLE 1

	*Total Licences DOC	WIA Licensees	% members to total licensees	Other WIA members	Total WIA members
VK1	352 (308)	178 (160)	51 (52)	40 (39)	218 (199)
VK2	4289 (4806)	1988 (1905)	46 (40)	210 (198)	2198 (2103)
VK3	4592 (4292)	1971 (1995)	43 (46)	252 (321)	2223 (2316)
VK4	2137 (2129)	1150 (1043)	54 (49)	102 (137)	1252 (1180)
VK5/8	1732 (1809)	1002 (963)	58 (53)	134 (160)	1136 (1123)
VK6	1182 (1088)	652 (552)	55 (51)	76 (97)	728 (649)
VK7	466 (436)	278 (254)	60 (58)	41 (55)	319 (309)
Other	— (38)	— (—)	— (—)	— (—)	— (—)
Totals	14750 (14906)	7219 (6872)	49 (46)	855 (1007)	8074 (7879)

* These have been corrected but may still be provisional to some extent.

TABLE 2. Number of Clubs included in above were 108 (103):—

VK1 — 3	VK2 — 20	VK3 — 30	VK4 — 29
VK5 — 12	VK6 — 11	VK7 — 1 (commercial)	

TABLE 3. Number of WIA members shown as holding two calls signs 210 (446):—

VK1 — 5	VK2 — 76	VK3 — 72	VK4 — 21
VK5 — 12	VK6 — 14	VK7 — 10	

TABLE 4. Percentage increases/decreases (31/12/81 compared with 31/12/80):—

	DOC Licences %	WIA Licensees %	Total WIA Members %
VK1	+ 14	+ 11	+ 10
VK2	— 11	+ 4	+ 5
VK3	+ 7	— 1	— 4
VK4	0	+ 10	+ 6
VK5	— 4	+ 4	+ 1
VK6	+ 9	+ 18	+ 12
VK7	+ 7	+ 9	+ 3
Totals	— 1	+ 5	+ 2

TABLE 5. DOC — Licences by grades 31/12/80 to 31/12/81:—*

	Full	Limited	Novice	Combined	Totals	%
VK1	201 (176)	73 (48)	69 (84)	9	352 (308)	+ 14
VK2	2296 (2398)	808 (1104)	1030 (1304)	155	4289 (4806)	— 11
VK3†	2079 (1919)	1257 (1278)	1095 (1095)	161	4592 (4292)	+ 7
VK4	1098 (627)	301 (586)	589 (716)	149	2137 (2129)	
VK5	927 (840)	276 (380)	435 (589)	94	1732 (1809)	— 4
VK6	674 (556)	196 (272)	265 (260)	47	1182 (1088)	+ 9
VK7†	258 (222)	99 (114)	83 (100)	26	466 (436)	+ 7
Other					(38)	—
Totals	7533 (6938)	3010 (3782)	3566 (4148)	641	14750 (14906)	— 1

* Best regarded as provisional, especially VK2 and VK5.

† Manual not computer figures.

TABLE 8. WIA members by grade:—

	F/C	A/T	S	G	L	X (Fam)	Clubs	Total
VK1	173	38	—	—	1	3	3	218
VK2	1723	162	42	217	11	22	20	2197
VK3	1694	209	73	184	9	16	30	2215
VK4	1022	89	6	77	7	22	29	1252
VK5	881	110	23	96	5	9	12	1136
VK6	577	64	22	40	5	9	11	728
VK7	252	34	5	18	6	3	1	319
Federal	—	—	—	—	9	—	—	9
Totals	6322	706	171	632	53	84	106	8074

A woman marries a man with the ridiculous belief that she can change him; a man marries a woman with the naive idea that she will continue to be the same.

Wife, dragging sleepy husband from bed: "You know the rules — this is a no-parking, tow-away zone from 7 a.m. to 9 p.m."

Contrary to the old belief, oil seems to be one of the principal causes of troubled waters.

WICEN NEWS



Car Rally with WICEN Assistance

Don Marshall VK4AMA
23 Karowara St., The Gap 4061

A bank of six lights pierces the night's black. A screaming engine breaks the silence. A car shudders over a metal grid and roars to a stop in a cloud of dust 100m along the bush road.

The instant the car hit the grid a button was pushed on an electronic clock.

Now the time is being passed to the car crew. In but a few minutes, the time calculation will be received many kilometres away for feeding into a computer.

Shortly, officials and backup crews there will be cheering or downcast.

What possible link can there be between this frenzied activity and amateur radio?

Many operators in south-east Queensland will recognise this as a summary of the basis of their major Wireless Institute Civil Emergency Net exercise of the year.

Still confused? A quick listen on 3.605MHz on the night of Saturday, May 1, or the morning of Sunday, May 2, recently would have explained all.

Queensland WICEN provided the essential communications for the 1982 Australian car rally championship first round.

This was the fourth year amateur operators have worked in conjunction with the Brisbane Sporting Car Club, organisers of the Lutwyche Shopping Village Rally, Queensland's premier rally of the year.

As the rally has grown, demands on amateurs have expanded and this year proved to be the greatest test so far.

Success can be gauged from competitors and car club organisers who state that, as a result of amateur participation, the Lutwyche rally is the best organised and most efficient of any in Australia.



Station of Miles VK4KBW, near Gympie, during the exercise.

Car rallying is an exacting "sport" requiring all the skills of a driver/navigator team to get their car through competitive stages on closed roads against the clock.

WICEN MATTERS FROM THE 1982 WIA FEDERAL CONVENTION

R. G. Henderson VK1RH
171 Kingsford Smith Drive, Melba, ACT 2615

The report of the Federal WICEN Co-ordinator was adopted without comment. It identified firstly the four levels of amateur involvement in emergency and disaster communications, i.e.:—

As an active member of the SES;

As an active member of WICEN;

As an active member of a Third Party Traffic Network (TPTN);

As an involved and responsible operator.

Secondly it established that WICEN was activated by the disaster control agency to supplement their communications whereas TPTNs operate all year round and provide a message service for the general public within the terms of prevailing regulations and licences.

A motion for the preparation of WIA policy statements was carried. The list of 17 topics included WICEN and third party networks and the statements are to be agreed and issued by 30th September, 1982. A draft of the policy statement on WICEN should go to Divisions for comment in June 1982.

FREQUENCIES

A motion to establish WICEN frequencies in the new HF bands was carried with the following motion arising:—

"In view of the need for known calling frequencies in emergencies and the desire to facilitate Australian emergency communications this Council resolves in the light of ITU Resolution 640 to establish WICEN calling frequencies in the new HF bands (10, 18 and 24 MHz)."

This was carried so it is now up to me to recommend suitable frequencies, initially only for the 10 MHz band. NSW, in proposing the first motion, suggested 10.115 MHz, on the boundary between narrow and broadband modes in the WIA's "gentlemen's agreement band plan". What is your view on this recommendation.

WICEN/TPTN

A motion calling for definitions for WICEN and TPTNs gave rise to statements along the following lines:—

WICEN is a pool of trained licensed operators, with equipment, available for deployment by a disaster control agency to aid communications in an emergency.

TPTNs are composed of amateur operators providing communications for the general public within the terms of prevailing regulations and licences.

This gave rise to a further motion calling

for the establishing of increased co-ordination between WICEN and TPTNs. To that end, these notes, policy statements and other articles in AR will all work towards that aim. See also my WICEN column in AR December 1981.

CALL SIGNS

The last WICEN related motion called for discussion on WICEN call signs. You may be aware that the call suffix series WIA-WIZ is reserved for amateur emergency stations, with the exception that in Queensland a number of regular WIA club stations have already been allotted call signs in that series. In some States the WIA-WIZ suffix series are allocated at minimal cost via the WICEN organisation to WICEN State, regional and local co-ordinators for use in lieu of their normal licensed call sign in emergency situations and for training. The long term aim is to obtain this facility in all States without disadvantaging the existing VK4 club stations. ■

Queensland WICEN Emergency Exercise

On the weekend of 22nd/23rd May, 1982, a Regional State Emergency Services exercise was held when a simulated air liner crashed in dense bushland in the hinterland mountains around the Gold Coast with some 100 passengers.

Gold Coast WICEN participated and provided hand-held communications from the search parties back to field base.

Some 250 personnel were involved in the 24-hour exercise, the main object of the exercise was to check the call-out procedure of the various units and co-operation between them in a major disaster.

Equipment used by WICEN was as follows: Four Icom IC2A hand-helds, one Icom IC730 as HF base back to civilisation, one Icom IC25A 2 metre 25 watt mobile into an isopole antenna, one Kenwood UHF transceiver giving back-up on 433.500 MHz, portable generator with battery back-up.

The field base station was fitted into a console protruding from the rear of a Cortina Hatchback wagon with an aluminium framed annexe to give tent cover during the cold night.

Amateurs participating were VK4KD, VK4AV, VK4APC, VK4KAK, VK4NNE, VK4ZIA.

Ken Ayers VK4KD,
State WICEN Co-ordinator, WIA
(Queensland Division). ■

These stages are held well away from populated areas, usually in state forests, with transport sections on public roads.

The Lutwyche rally starts about midday and ends about 8 the next morning.

Anything can happen over that time and often does. Breakdowns are common. More than half the field of 84 was forced to retire this year.

Fortunately, serious accidents are rare.

Sudden changes in the weather can force officials to cancel some sections and re-route others from the basic forest access tracks.

Regardless, competitive section times must get to the rally scorer quickly for a next-to-spontaneous reaction, not a result after three or four days of laborious calculation. Hence a computer.

Demands then on amateur operators are many fold as they would be in a civil emergency — setting up equipment and establishing communication links in strange places, dealing with strangers, preparing, transmitting and receiving official messages quickly yet accurately, operating often on emergency power for extended periods plus providing their shelter and sustenance.

Queensland WICEN region 4 based on Brisbane has been allocated a secondary net function by the State Emergency Service — for Red Cross and Salvation Army welfare messages.

Thus the transmission of complicated tables of rally section numbers, car numbers and times in minutes and seconds is seen as a valuable test of preparedness recognised by the SES which lends equipment and by the Communications Department which allows the use of a portable 2 m repeater and third party traffic.

This year, about 40 operators took part. Region co-ordinator John Aarsse VK4QA, Geoff Adcock VK4AG and Fred Saunders VK4AFJ did the organising on paper, in maps and in practice.

Preliminary discussion nights using the secret rally route details and control site pictures changed the net pattern of previous years to the use of the emergency frequency of 3.605MHz generally with 2 m and 70 cm for operation closer to the rally headquarters. The 10m WICEN frequency of 28.310MHz was not used.

The township of Imbil, south of Gympie, was again chosen as rally HQ, unfortunately not for its radio location tucked in behind mountains of the Kenilworth and Imbil state forest areas.

This disadvantage was again overcome by the setting up of a base station on the top of nearby Mt Borumba. This monitoring and repeating if necessary of all the amateur frequencies used, as well as the rally organiser's own commercial base station, and monitoring of 27MHz CB used by a four-wheel drive club's sweep vehicles.

In all, 12 stations were required, each manned by two or more amateurs.

Organisers chose a quarry on the side of Mt Coot-tha in Brisbane as their first competitive stage — fine except this is on the wrong side of the mountain for communication with Imbil 120 km away.

An intruder on the Brisbane 2m repeater (Channel 7000) forced a last minute change

to 7.050MHz transmit-2m receive for the team on the mountain to relay via Mt Borumba.

Eighty metres had proved very noisy in the middle of the day.

Then catastrophe! Officials at the quarry checkpoint did not want to know anything about amateur operators or the plan to send scores to Imbil! And this with 16 competitive states up to 50 km to follow over the next 19 hours.

The crunch came for Graham VK4KGS, the author, and his three children at Beerburum forest, still 55 km from Imbil away over one of the highest points in the Sunshine Coast hinterland.

A 3.5 dipole strung between a couple of trees allowed Graham's FT100 (on generator power) to put a 5 and 9 signal into Imbil.

Co-operative officials here realised our predicament and quickly coerced navigators to provide times for Mt Coot-tha plus the three scheduled sections in Beerburum forest on special radio checkpoint forms for entering on a scores message form ready for transmission.

Imagine the task of sending four section times of each of 84 cars arriving at the checkpoint at one minute intervals.

Pens and staplers came to the fore and Graham sent a steady stream of details 10 to a message into Imbil ignoring the dust from the road 20 m away and growing hordes of mosquitoes as dusk approached.

When the last car passed at 6.05 p.m., there was a backlog of about 20 minutes but the stage had been set for a long night.

Graham's and my task was not over. While other operators began sending more details of other sections 120 km away, we dismantled our station and were on the move in two vehicles to another spot on the map at Mitchell Creek, a mere 10 km from Imbil but over the range.



Graham VK4KGS operating portable from Mitchell Creek at 3 a.m.

At Imbil, Fred Saunders VK4AFJ organised the control centre with extra operators from Gympie Amateur Radio Club given immediate tuition and experience in handling messages, log keeping etc.

Queensland WICEN co-ordinator Ken Ayers VK4KD observed the operation here also.

Fred reported excellent copy on 3.5 where requests to interfering stations to QSY were heeded.

The WICEN repeater on 147.750MHz set up by Geoff VK4AG and others on Mt Borumba worked excellently and shared traffic with the 80m network, while Channel 6550 was a useful backup.

Imbil had some difficulty with a UHF link because of the surrounding hills.

Graham and I and children found one level patch to pitch our tent and went to sleep about 11 after a dinner eaten to the babble of details from at least four other stations set up like ours somewhere in the forest in the night.

The alarm at 1.45 a.m. was a very rude awakening but we managed to switch on again as rally officials arrived in their van to set up their control point.

The first car arrived at 2.30 and details of the first five were transmitted at 2.48 via the 2m repeater using the transceiver in Graham's truck this time.

Imbil advised details of the leading six competitors and these were passed to later drivers as their navigators calculated our section times.

The last car passed at 5.15 as dawn was breaking and sleep came easily after a total of 49 outgoing messages, nine incoming plus innumerable unofficial comments from our two locations.

The bright sweep car team that work us at 6.50 a.m. received a very chilly reception and moved on quickly.

Breakfast in the bright sunshine on a cool, crisp morning was refreshing if we were more than a little jaded. This was our first car rally without rain.

The radio was on again, this time with details of the final sections somewhere over the mountains.

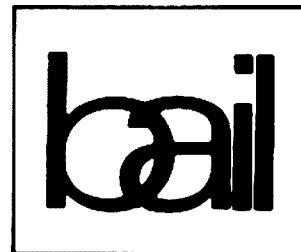
Almost with relief did it go off as the Borumba and Imbil stations closed after 21 hours with the long drive to Brisbane to follow.

A post mortem meeting on May 17 considered problems with rally and WICEN organisers.

While the operation generally was most successful, questions were raised about superfluous talk, superfluous gear, preparedness without advance warning such as this rally, and of equipment like generators and portable masts, flys etc which were borrowed.

Construction of generators could be a useful WICEN project, while the regional co-ordinator is planning an exercise without warning for most participants later this year.





YAESU FT-102 HF ALL MODE TRANSCEIVER

IF Transmit Monitor

An extra product detector allows audio monitoring of the transmitter IF signal, which enables precise setting of the speech processor and transmit audio so that the operator knows exactly what signal is being put on the air in all modes. A new "peak hold" system is incorporated into the ALC metering circuit to further take the guess-work out of transmitter adjustment.

New VFO Design

Using a new IC module developed especially for Yaesu, the VFO exhibits exceptional stability under all operating conditions. The circuit design is extremely simple, using only axial-lead components.

Better Dynamic Range

The extra high-level receiver front end uses 24 VDC for both RF amplifier and mixer circuits, allowing an extremely wide dynamic range for solid copy of the weak signals. For ultra clear copy on strong signals or noisy bands the high voltage JFET RF amplifier can be simply bypassed via a front panel switch, boosting dynamic range beyond 100 dB. A PLL system using six narrow band VCOs provides exceptionally clean local signals on all bands for both transmit and receive.

Total IF Flexibility

An extremely versatile IF Shift/Width system, using a totally unique circuit design, gives an infinite choice of bandwidths between 2.7 kHz and 500 Hz, which can be tuned across the signal to the portion that provides the best copy sans QRM. A wide variety of crystal filters for fixed IF bandwidths are also available as options for both parallel and cascaded configurations. The 455 kHz third IF also allows an extremely effective IF notch tunable across the selected pass band to remove

interfering carriers, while an independent audio peak filter can also be activated for CW reception.

New Noise Blanker

The new noise blanker design enables front panel control of the blanking rules width, substantially increasing the number of types of noise interference that can be blanked, and vastly improving the utility of the noise blanker for all types of operation, including woodpecker blanking.

Transmitter Audio Tailoring

The microphone amplifier circuit incorporates a tunable audio network which can be adjusted by the operator to tailor the transmitter response to his individual voice characteristic before the signal is applied to the superb internal RF speech processor.

New Standard of Purity

Three 6146B final tubes in a specially configured circuit provide a freedom from IMD products and an overall purity of emission unattainable in two-tube and transistor designs, while a new DC fan motor gives whisper-quiet cooling as a standard feature.

FV-102DM Synthesized, Scanning External VFO

The FV-102DM provides the FT-102 with the advanced frequency control necessary for optimum operating convenience where seconds count. The PLL synthesizer steps at a 10 Hz rate, while slow or fast scanning can be controlled either from the push buttons on the front panel or directly from the microphone connected to the FT-102 (when a scanning microphone is used). Up to twelve frequencies can be memorized by the FV-102DM, entered from the FT-102, FV-102DM VFO or from the front panel numerical keyboard. Additional front panel controls include plus-and-minus 5 kHz and plus-and-

minus 20 kHz stepping buttons; VFO dial lock, last digit blanking, and transmit/receive Main/VFO/ memory selector buttons to allow any combination of frequency controls. The VFO dial can also be activated as a clarifier for a selected memory, while the five digit fluorescent display shows the operating frequency with resolution to 10 Hz, if desired.

FC-102 Antenna Coupler

The FC-102 is a newly designed antenna tuner. With a power handling capability of 1.2 kW, the bandswitched L-C pi-network will match a wide variety of antennas (including a single wire) to your transceiver or linear amplifier on all HF bands. New design features include an in-line wattmeter with three ranges (20, 200 and 1200 watts full scale), and a "peak hold" system that enables the operator to observe peak power. A separate SWR meter is also built in for antenna tuning indication. The FC-102 includes internal relays to provide low-loss push button selection of two different antennas (and two transmitters), while the optional FAS-1-4R Remote Antenna Selector may be mounted either inside the FC-102 or right on your tower, to allow selection of four additional antennas. When remotely installed, the FAS-1-4-R is connected by a control line to the FC-102, eliminating the need for costly multiple feedlines.

SP-102 External Speaker/Audio Filter

The SP-102 features a large (120 mm) high-fidelity speaker with selectable low-and-high-cut audio filters allowing twelve possible response curves. Headphones may also be connected to the SP-102 to take advantage of the filtering feature.

SP-102P External Speaker/Phone Patch

The SP-102P provides a combination shaped response speaker and hybrid phone patch for simple interfacing. Gain controls and an audio level meter are included on the SP-102P.



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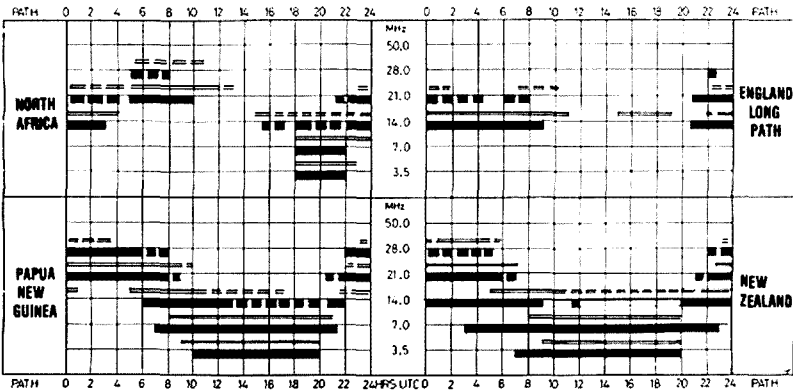
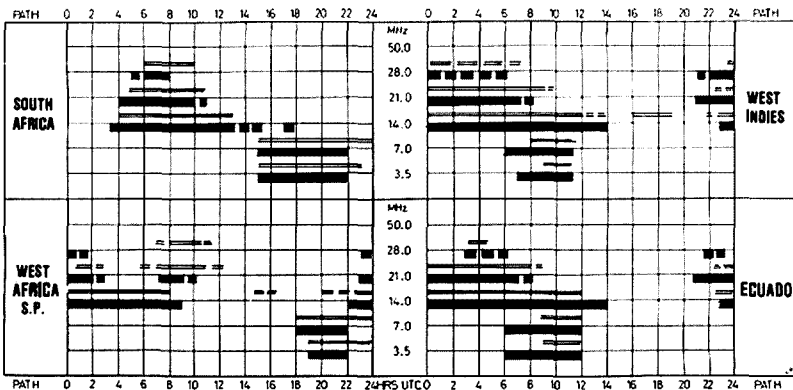
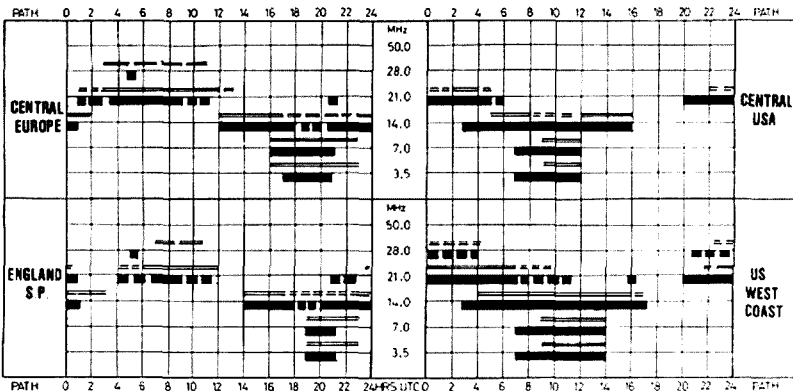
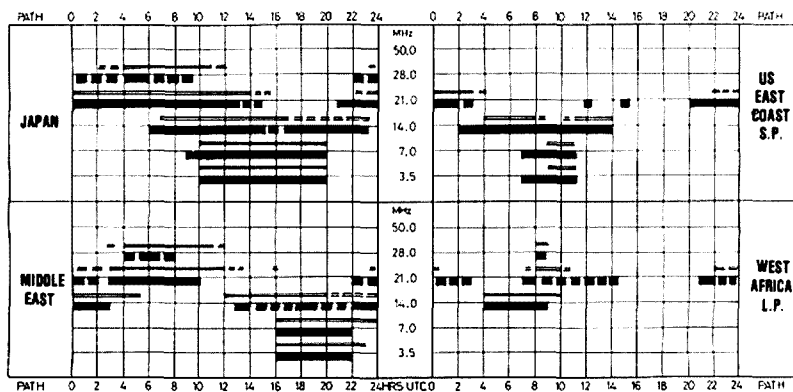


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COUNCIL REPORT FOR THE YEAR APRIL 1981 TO MARCH 1982

This report does not attempt to chronicle all the year's events but to pick out the highlights and to recapitulate some items which warrant formal recording in this manner.

MEMBERSHIP

There were 741 members on 25th January, 1982, compared with 662 at the same date last year. It is estimated that 30-40 of these are a direct result of a recruiting campaign held in September/October. The extra income from the new members more than covers the cost of the campaign but it is a disappointing result. It was followed by a Federal membership drive, which we felt we must tell their executive was poorly executed. Rising costs and more activities forced increases in both the Federal and Divisional portion of the subscriptions.

MEETINGS

Monthly general meetings continued to be held in Science House, Perth, with good attendances, typically more than a hundred at the start of a meeting. There was a lecture or other programme approximately every third month, although it seems to be becoming increasingly hard to find lecturers. Don Lorrimer continued to cater for our suppers, assisted again this year by Mark Bastin. It was revealed during the year that Don has been looking after us for 22 years — score: Don 22, Mark 2.

QSL BUREAU

The Bureau made a small loss to the order of \$60 this year due to increased postage costs. Jim VK6RU is confident that it can trade its way back into the black, but as postage continues to rise the situation will need watching. The Bureau now operates beyond the start of the meeting with the queue forming down the side aisle. The Federal body has adopted the IARU rule that the National QSL Bureau will accept incoming cards for non-members for delivery at the recipients' expense, but Council has upheld the policy that outwards use of the Bureau is restricted to members.

NEWS BROADCASTS

Regular broadcasts have been produced by Douglas VK6ZMG and his deputy, Alyn VK6ZGA. They have been of a high standard, and it is noted that Douglas received the Outstanding Voluntary Service Award for his work as Broadcasts Officer. All regular relay stations are thanked and it is with some pride that we can say that the news may be heard on all bands from 2-80 metres inclusive, with a 40 metre AM vertically polarised relay intended for SWLs. We have authorisation for a 160 metre relay and it is hoped that a volunteer station will soon be found.

AWARDS AND PRESENTATIONS

It is a pleasure to record that Jill VK6YL and Trevor VK6MS were joint Amateurs of the Year, it proving impossible to choose

between them, mainly, but not entirely, for their contribution to the re-siting of Channel 4 repeater on Tic Hill. The first two of our Worked All Shires Awards were made towards the end of the year.

THE PATRON

The Council nominated the new Governor, His Excellency Sir Richard Trowbridge, for Patron once more. His Excellency invited the President to the Royal Garden Party, which was held during H.M. the Queen's visit to WA in October.

INNOVATIONS, ACTIONS AND ACTIVITIES

The Division sent a \$100 dollar donation to the VK5 "Save Our Hobby" Tower Appeal Fund. They have proposed a National Special Purposes Fund.

Insurance cover for volunteer workers was increased. The comparative figures are:—

Death \$2,000, increased to \$50,000.

Disability \$52 for 52 weeks, increased to \$250 for 52 weeks.

Three workers on site, increased to 25 workers.

Public liability increased to \$1m.

A valve bank was established. Deposits already number several hundred.

The Division's archival minutes dating back to 1914 were lodged with the Battye Library on restricted access and authority to remove.

Joint WIA/DOC meetings during office hours were instituted to substitute the Amateur Advisory Committee, which had been wound up due to lack of funds. Three joint meetings were held during the portion of the year following this agreement.

VK6 amateurs sent more than a hundred letters of protest about the Russian Woodpecker to various Federal Ministers and were "mentioned in dispatches" by our Federal Executive.

Our official permanently portable call sign was changed from VK6AWI to VK6WIA in accordance with the wishes of a majority of members.

In November, five Council members made a weekend visit to the "deep south", Narrogin and Albany, which was appreciated by our members there and helpful to us.

Institute letterheads are now available to members for their personal correspondence.

A number of historical documents and photographs were produced during the year, notably by John VK6BB. Rodd VK6DA continues to be unofficial historian and preserve these priceless items.

VK6 has proposed three motions for the 1982 Federal Convention. They asked for full licence at age 14; increase of the Novice sub-band in 15 metres; a Novice allocation in the 70 cm UHF band subject to certain

conditions. We continue to lobby, with encouraging results, for a change in the RD contest rules. The Federal Councillor and Alternative Federal Councillor for 1982 are again Neil VK6NE and Bruce VK600.

We supported VK7 in their protest via the Federal body about a trial of "licensing by sticker" in that State as not being appropriate for the amateur service where multiple transmitters and home construction are common.

Complaints about the standard of AR journal and numerous suggestions for its improvement were addressed to Federal Executive. These may have borne fruit in the appointment of a new production team.

Our enthusiastic YLs handed out welcome and information sheets to candidates as they left the November and February exams. We all need to try to increase our membership at all times.

WICEN

The caravan purchased last year has been fitted out by the team as a mobile forward communication centre. It has been shown to the public at JOTA, the SES display and the St. John's Ambulance exercise. WICEN this year handled the communications for the Christmas Pageant and of course acted in a number of search and other emergency situations. It now has three of its own call signs, VK6WIE, VK6WIC and VK6WIF.

BOOK SALES

Book sales, into which Chris VK6DV puts so much of his time, continue to be our only source of income after subscriptions. On the Albany trip, as on last year's country trip, books sold like the proverbial hot cakes.

JOTA

The participation in JOTA 1981 was the best ever.

No. of stations increased	7%
No. of amateurs increased	9%
No. of Guide groups increased	33%
No. of Scout groups increased	7%

On New Year's day sixteen amateurs participated in the Girl Guides' camp.

REPEATERS

The Repeater Group has been very active with a number of technical innovations, but the highlight of their year was the opening in October of the channel 4 repeater resited to the north-east of Perth. It was formally opened by Barry Field VK6BR, State Manager of the Regulatory and Licensing Section of the Department of Communications. Repeater coverage to the north-east is much improved and the repeater has its own power from a wind generator.

INTRUDER WATCH

Dave VK6WT, who has been Intruder Watch Co-ordinator for several years, has announced his retirement. We thank Dave for his devotion to this most important aspect of amateur radio which is so neglected by a majority of operators. We don't feel anyone can replace Dave, but we hope that someone will offer to try.

IN CONCLUSION

Council would like to thank the various others not mentioned here who have

worked for and contributed to the Institute. It is a truism that you only get out of amateur radio what you put into it: the corollary to that is that the more you put in, the more you will get out. It is sad but true that in today's competitive world you cannot stand still. If you don't strive to go forward, you are likely to lose the privileges you have at present. Will every member please strive to contribute at least one thing next year?

Bruce Hedland-Thomas VK6OO, President.

FINANCIAL REPORT OF THE WIA (WA DIVISION) 1981

EXPENDITURE	
1980	1981
\$	\$
Administration:	
247.00 Advert./Print./Stat.	546.28
99.00 Insurance/Licences	456.00
(Postage/Phones	667.56
622.22 Expenses	43.74
315.00 Hire of Hall	325.00
642.85 Convention Expenses	41.00
— Country Visits	749.53
815.60 Sundries	67.28
2,741.67	2,896.39
66.00 Life Members (5)	90.00
— Awards	147.57
66.00	237.57
— AMSAT	41.94
— Trophies	65.22
— Video News	32.00
—	139.16
Donations:	
— Para Quad	115.00
701.88 WICEN	550.00
— SA Tower Fund	100.00
100.00 WA Repeater Group	200.00
801.88	965.00
35.97 Christmas Dinner	469.29
— Less Recoup	312.00
35.97	157.29
Equipment:	
— Written Off	131.00
164.88 Depreciation	184.87
164.88	315.87
308.00 Book Stock Written Off	—
Provision for Invest. Int :	
— Received	437.62
— Accrued	333.33
308.00	770.95
753.75 Surplus	—
\$4872.15	\$5482.23

INCOME	
\$	\$
Subscriptions:	
— Received from Federal	3923.58
— Brought Forward	1340.25
— Less Paid to Federal	1550.50
3204.31	3713.33
325.00 Donations	—
Bank Interest:	
(Current Account Received	395.11
(Current Account Accrued	61.19
(Less Accrued Last Year	150.00
(Investment Account Received	437.62
(Investment Account Accrued	333.33
873.51	1,007.25
Sundries:	
— Tea	45.95
— Awards	3.30
— 1980 Subscriptions	7.00

—	56.25
469.33 Gross Profit — Trading Account	501.88
— Deficit	133.52
\$4872.18	\$5482.23

Note:
The provision for Investment Interest shown under Expenditure refers to Council's decision to separate Interest on Investments from working capital due to the effect of inflation on invested capital.

BALANCE SHEET AS AT 31/12/81	
LIABILITIES	
\$	\$
Accumulated Fund as at	
11272.54 1st January	12026.29
S. 753.75 Surplus/Deficit	D. 133.52
— Investment Interest (Provision)	770.95
12026.29	12663.72
NET WORTH	
1340.25 Subscriptions In Advance	1896.16
173.55 D. Smith Fund	7.30
— Sundry Creditors	1308.96
\$13540.09	15878.14
ASSETS	
\$	\$
1440.82 R and L Cheque Account	2821.74
10129.00 TCPBS Pass Book and Shares	1664.38
— Telecom Credit Union	8000.00
50.00 Book Shop — Float	50.00

Secretary's Float	77.70
Accrued Interest —	
(Investments	333.33
(Working Capital	61.19
150.00 Trading Stock	2106.80
732.40 Equipment —	
Brought Forward	\$1037.87
Purchased	20.00
Less —	
Written Off	131.00
Depreciation	184.87
1037.87	742.00
— Sundry Debtors	19.00
\$13540.09	15878.14

(Signed) C. A. BASTIN, Hon. Treasurer

We certify that we have examined the books and vouchers of the WIA (WA Division) and have found them to be kept in a business-like manner and to record the true financial position of the Division at the close of the period.

We compliment Mr. Bastin on the informative manner in which the books have been kept and the Final Accounts presented.

We have received every assistance in the auditing of the Accounts.

(Signed) FRANK TAYLOR VK6JK

(Signed) A. VAN DEN AVOORT VK6HA

Honorary Auditors.

25th March, 1982.

THE 6th WEST AUSTRALIAN ANNUAL 3.5 MHz CW AND SSB CONTESTS — TRANSMITTING AND RECEIVING

C. Waterman VK6NK
Box 6250, Perth 6000, WA

Rules
DURATION:
C.W. — Saturday, 31st July, and Sunday, 1st August.
SSB — Saturday, 4th, and Sunday, 5th September.
On both days between the hours of 1100Z and 1330Z time, i.e. five operating hours in all for each contest.
FREQUENCIES:
All contacts to be made in the 3.5-3.7 MHz band using frequency allocation applicable to your licence conditions.
CALLING:
Stations will call CQ WAA using the three times three technique; infringement of this rule by the use of long CQ calls may entail disqualification as will pre-arranging of a QSO.
SCORING:
Points for contacts are as follows:—
Within Western Australia: 5 points per contact.
WA to all mainland Eastern States: 2 points per contact.

WA to VK7: 4 points per contact.
WA to VK0 and Overseas: 8 points per contact.
3 points per contact with WA stations only.
MULTIPLIERS:
A multiplier of 1 per WA Shire worked will apply to the final score.
CONTACTS:
Stations may be worked twice on each night, i.e. once between 1100Z to 1300Z and again between 1300Z to 1330Z; these contacts will count for points. Each time the contact for WA stations will take the form of an exchange of 5 characters comprising RST/RS and Shire letters, e.g. a station in NORTHAM sends 579NM or if in HARVEY 579HY; this helps towards the worked all shires award.
Eastern States and overseas stations will send RST/RS, plus a running number starting at 001.
LOGS:
Contest logs to be set out on one side of a quarto or foolscap sheet with columns headed as below.

DATE:	CALL:	OPERATOR:		TIME	CALL	RST	RST	SHIRE	SHIRE	POINTS
Z	WKD	OUT	IN	LETTERS	MULTIPLIER	CLAIMED				

Column 7 to be totalled at the foot of each page and the running totals brought forward. The last page to contain the following summary: Total number points scored, input power, equipment and antennas used, along with comments on the contest in general. SWL participants score as above using the outgoing TX score.

All logs to be addressed to the WAA Contest Committee, PO Box 6250, Hay Street East, Perth 6000, and posted so as to reach us not later than 31st August for the CW contest and 30th September for the SSB contest. The results for all contests will be published in the December issue of AR.

SHIRE LETTERS

1. Albany Town	AT	73. Meekatharra	MK
2. Albany	AL	74. Melville	MV
3. Armadale	AK	75. Menzies	MZ
4. Augusta-		76. Merredin	MD
Margaret R.	AM	77. Mingenew	MW
5. Bassendean	BA	78. Moora	MA
6. Bayswater	BW	79. Morowa	MR
7. Beverley	BV	80. Mosman	MS
8. Boddington	BO	81. Mukinbudin	MU
9. Boulder	BD	82. Mullewa	ME
10. Boyup Brook	BB	83. Mundaring	MG
11. Bridgetown-		84. Murchison	MH
Greenbushes	BG	85. Murray	MY
12. Brookton	BK	86. Mt. Magnet	MM
13. Broome	BE	87. Mt. Marshall	ML
14. Broomehill	BH	88. Nannup	NP
15. Belmont	BL	89. Narembeem	NN
16. Bruce Rock	BR	90. Narrogin	NG
17. Bunbury	BY	91. Narrogin	
18. Busselton	BN	Town	NT
19. Canning	CA	92. Nedlands	NL
20. Capel	CL	93. Northam	NM
21. Carnamah	CH	94. Northam	
22. Carnarvon	CN	Town	NO
23. Chapman		95. Northampton	NH
Valley	CV	96. Nungadlin	NG
24. Chiltering	CI	97. Peppermint	
25. Claremont	CT	Grove	PG
26. Cockburn	CR	98. Perenjori	PJ
27. Collie	CE	99. Perth	PH
28. Coolgardie	CG	100. Pingelly	PY
29. Coorow	CW	101. Plantagenet	PT
30. Corrigin	CS	102. Pt. Hedland	PD
31. Cottesloe	CO	103. Oualtrading	QG
32. Cranbrook	CK	104. Ravensthorpe	RT
33. Cuballing	CB	105. Rockingham	RM
34. Cue	CU	106. Roebourne	RB
35. Cunderdin	CD	107. Sandstone	SS
36. Dalwallinu	DU	108. Serpentine-	
37. Dandaragan	DN	Jarrahdale	SJ
38. Dardanup	DP	109. Shark Bay	SB
39. Denmark	DK	110. South Perth	SP
40. Donnybrook-		111. Stirling	ST
Balingup	DB	112. Sublaco	SU
41. Dowerin	DR	113. Swan	SW
42. Dumbleyung	DG	114. Tambellup	TP
43. Dundas	DS	115. Tammin	TM
44. E. Fremantle	EF	116. Three	
45. East Pilbara	EP	Springs	TS
46. Esperance	ES	117. Toodyay	TY
47. Exmouth	EH	178. Trayning	TG
48. Fremantle	FM	119. Upper	
49. Gingin	GG	Gascoyne	UG
50. Gnowangerup	GP	120. Victoria	
51. Geraldton	GN	Plains	VP
52. Goomalling	GM	121. Wagin	WN
53. Gosnells	GS	122. Wandering	WO
54. Greenough	GR	123. Wanneeroo	WD
55. Hall's Creek	HC	124. Waroona	WR
56. Harvey	HY	125. West Arthur	WA
57. Irwin	IN	126. Westonla	WS
58. Kalamunda	KA	127. West Pilbara	WP
59. Kalgoorlie	KL	128. Wickiepin	WI
60. Katanning	KG	129. Wiluna	WU
61. Kellerberrin	KN	130. Williams	WL
62. Kent	KT	131. Wongan-	
63. Kojoonup	KP	Ballidu	WB
64. Kondinin	KD	132. Woodanilling	WG
65. Koorda	KO	133. Wyalkatchem	WY
66. Kullin	KU	134. Wyndham E.-	
67. Kwinana	KW	Kimberley	WE
68. Lake Grace	LG	135. W. Kimberley	WE
69. Laverton	LV	136. Yalgoo	YO
70. Leonora	LA	137. Yilgarn	YN
71. Mandurah	MB	138. York	YK
72. Manjimup	MP		

FIVE-EIGHTH WAVE



Journalist for July:

Jenny Warrington VK5ANW
59 Albert St., Clarence Gardens, 5039

Once again the VK5 Divisional notes are back in the columns of AR. At present we do not have a full-time "journalist" so several of us will be "trying our hand" so to speak. We in VK5 have a great image to live up to, that of Warwick (PanSy) Parsons VK5PS, whose popular column it is said was always read first in many households. We may not manage to find another PanSy, but we'll certainly try to keep you informed of the "goings-on" in VK5. We would welcome local news from the many clubs around the State, and perhaps someone in VK8 could keep us in touch with interesting "happenings" from up there — all contributions via Box 1234, GPO, Adelaide, please.

ANNUAL GENERAL MEETING

The AGM of the VK5 Division was held at the Burley Griffin Building on Tuesday, 27th May. As only the minimum number required (7) nominated for Council, no ballot was necessary. The following members were declared elected, and have since been elected to the positions shown:—

President: Bill Wardrop VK5AWM.

Vice-President, Secretary, Alternate
Federal Councillor: David Clegg VK5AMK.

Vice-President, ESC Co-ordinator: Dick
Boxall VK5ARZ.

Treasurer: John Butler VK5NX.

DOC Liaison Officer: Maurie Phillips
VK5ZU.

Education Officer, Assistant Treasurer:
Graham Ratcliff VK5AGR.

Membership Secretary: Ken Westerman
VK5AGW.

Also on Council by reason of their
office:—

Immediate Past President: John Mitchell
VK5JM.

Federal Councillor, Minutes Secretary:
Jenny Warrington VK5ANW.

Facilities Supervisors: VK5AMK and
VK5AGR.

HIGHLIGHTS OF MEETING

One of the highlights of this meeting was the presenting of Honorary Life Membership to Colin Hurst VK5HI. Colin has served this Division well for many years as Federal Councillor, Treasurer and President, and was a popular choice as a recipient.

Another popular choice to receive Honorary Life Members is Ian Hunt VK5QX. Ian has served a similar number of years to Colin and has also been Federal Councillor and President. His past year has been spent as a liaison between Council and our lawyer on a tower case, which was finally won in the Supreme Court. Ian is currently touring the USA and so was unavailable to receive his Life Membership badge.

HONOUR ROLL

The proposal to place an Honour Roll Board in the meeting hall at the BGB has created an upsurge of interest in things historical, especially the names of former Presidents, Life Members and holders of the Certificate of Merit. To encourage this, we are currently running a competition locally to name the greatest number of VK5 Divisional Presidents, in correct order, with their years. This project is also keeping our Historian, Jack Coulter VK5JK, Brian Austin VK5CA and myself out of mischief trying to compile a check-list of our own — so that we can check the competitors!

NEW GEAR FOR THE WICEN GUYS

Our WICEN boys are currently resplendent in their new caps and T-shirts, and will soon have jackets also. These are available through the Director, John Mitchell VK5JM, via Box 1234, GPO, Adelaide 5001. Other Divisions may also be interested.

ALL WELCOME

Meetings of the VK5 Division are held in the Burley Griffin Building (at the rear of the Municipal Council Depot), West Thebarton Road, Thebarton, on the fourth Tuesday of every month (except December) at 8.00 p.m. Local and interstate visitors are always welcomed.



FORWARD BIAS

VK1 DIVISION

Barry Bennetts VK1BB

MEETING PROGRAMME

The next three monthly meetings of the Division will be held on June 28, July 26, August 23.

The meetings are held at the Griffen Centre, Civic ACT. Members gather at 7.30 p.m. for a ragchew, collect QSL cards, and the meeting generally starts around 8 p.m. Visitors are always welcome to attend, so come along and make yourself known.

NOVICE NET

As an alternative to 2 metres it has been suggested that 28.485 MHz be used as a frequency whereby novices (or others) can contact each other locally, particularly during the silent hours. This also would give novice visitors to Canberra an opportunity to meet a VK1 and obtain directions and to be made welcome into the capital. The frequency was selected because of the easy conversion from CB rigs, hence mobile operation.

ACTIVITY GROUPS

The Division is seeking to determine from members their major amateur radio interests pursuant to forming specialist operating groups, e.g. RTTY, SSTV, PACKET RADIO, SWL, CONTESTING, FOX HUNTS, etc. If response is favourable the Division will appoint Liaison officers to the committee to co-ordinate these activities and to generally give support. It is realised that amateur radio is a diverse hobby and the Institute should be doing all it can to stimulate and foster interest.



QSP

GEOSTATIONARY SPACE STATIONS

A table issued with the ITU Telecommunication Journal of April 1982 shows a total of 220 satellites already in the geostationary orbit and those planned for such an orbit. This makes for some crowding.

CLUB CORNER



previously taken part in Jamboree of the Air. The official call sign of the Girl Guides of NSW (VK2GGA) will be used and most bands will be operational with 7.090, 14.190 and 21.190 MHz being the main frequencies. Operating times will be from 23.00 to 11.00 UTC with the girls operating in the daytime and the leaders in the evening.

Anyone wishing further information may contact John Lambert VK2AKQ, QTHR, or Valda Lambert, Public Relations Officer for the Dubbo State Muster, 76 Ula Crescent, Baulkham Hills 2153.

Tamworth AR Club

The Tamworth Amateur Radio Club announces that the annual Noel Taylor Memorial Field Day will be held on the 4th and 5th September, 1982, at Duri Hall.

They will be having a social evening on Saturday night with an old-fashioned gathering around the open fire, and delicious spit-roasted pig with all the trimmings available.

All the usual fox hunts, competitions and displays, etc., will be held throughout Saturday and Sunday, so come along and join in all the fun. For further information contact E. Mogor VK2VDQ, Tamworth Amateur Radio Club, Victor Street, Wallabadah, NSW 2343. ■

COMMERCIAL CHATTER

TESA/TETIA CONVENTION

Planning is now well under way to ensure that this year's TESA/TETIA Convention will continue the successful and informative format established in earlier conventions.

The 1982 Television Electronic Services Association of Australia/Television and Electronic Technicians' Institute of Australia Convention will be held at the Palm Lake Motel, 52 Queens Road, Melbourne, from Saturday, 23rd October, 1982, to Thursday, 28th October, 1982.

A full programme of lectures, forums, social activities and technical tours will be set out in the Convention Brochure/Registration Form shortly.

Further information may be obtained from Mr. J. L. Klemmer, Secretary, Box 21, Hawthorn, Victoria 3122. ■

A VISIT TO ARRL

Whilst on a recent business trip to America the National Sales Manager for Scalar Distributors, Geoff Atkinson VK3YFA, had the good fortune to find himself in Hartford, Connecticut, quite near American Radio Relay League (ARRL) Headquarters and, although he is not a member of the ARRL, it was too good an opportunity to allow to pass.

As he had anticipated being in the area,

Manly-Warringah District Radio Club

SYDNEY TO RIO RACE

Although the race only took 39 days, the preparation and time given by radio amateurs ran into months. In fact a "dry run" was made maintaining contact with the Sydney to Noumea race early in 1981.

EARLY PLANNING

The race commenced on January 24, 1982, however planning started in August 1981, when Peter Rysdyk, the Race Controller, Barry White VK2AAB, of Hornsby District Radio Club, Ian Dodd VK2DLU, of Manly Warringah District Radio Club, put their heads together.

In the early preparations, not many of the ships participating in the race wanted radio amateurs on-board. In hindsight, many wished they had! The ship that selected to have an amateur aboard was "Buccaneer", skippered by Joel Mace, and the amateur operator selected was Ray Smith ZL2AQV.

Preparation was not just — "see you on 14,200 Ray". Firstly the DOC State Manager, the State Manager OTC, Acting First Assistance Secretary DOC, CYC officials, Skippers and crews, Penta Base radio operator, Melbourne Meteorological Officers and many more. Graham Buchan VK2BGB, Radio Officer aboard "Australian-Escort", talked about emergency use and ship communication procedures, and Col Christiansen presented an excellent talk on Antarctic Stations and beacons that can be used en route.

AMATEUR PARTICIPATION

Amateur radio planning was well disciplined. Ian Dodd VK2DLU prepared the Operating Procedures, which consisted of frequencies, times, call signs, logging, land communication to the Control Centre at CYC Sydney, and message handling, both in and out. The club station of Manly Warringah District Radio Club, VK2MB, was selected as the operating site. The club station is located at the old radar site at Beacon Hill on the north side of Sydney, and has a TH6DXX six element tri-band beam as well as LF antennas permanently installed.

The race started on January 24, but amateur operation did not start until the following day. First 7 MHz and then three days later shifted to 14 MHz. Unfortunately the frequency selected on 14 was the same one being used by the Dick Smith Antarctic Expedition, so a slight frequency shift had to be made and was eventually fixed around 14,120.

FIRST SKEDS

Firstly skeds were set for early morning and then as time changes occurred, evening skeds became more popular. Operators were divided into groups of three, one operating, one logging and one handling the shore lines. From the two clubs over 20 licensed operators took part.

Although some days communication was very poor, with the help of many willing amateurs in New Zealand, Argentina and Brazil, all messages got through.

AROUND THE HORN

Most messages were weather reports, position reports and personal messages to the families back home. Perhaps the highlight of the race was just after Buccaneer rounded the Horn and sent her position report and an up-date story. Buccaneer had a crew of 15 comprising 10 Australians, three New Zealanders, one American and one Brazilian. The Horn had lived up to its reputation and blew a force 8 gale for them. At that time they had been 25 days at sea, had a fine kit of torn sails, including six main sails, six head sails and two spinnakers. They worked in three watches. Their most frightening moments occurred in the high seas, and they reported that a 22 metre boat surfing down a 10 metre wave was not fun! The last day of communication with Buccaneer was 150 miles from Rio, when congratulations were passed and the amateur stations closed down.

In appreciation for the work and dedication given by the two Radio Clubs the CYC of Sydney gave a luncheon to the operators and presented both clubs with plaques and burgees from both the CYC and Rio.

Thanks go to VK2s AAB, AGS, ANF, ASM, AYD, BBF, BDF, BMZ, BTA, DOG, DI, DLU, KBJ, KLX, NPO, RA, ZHV, ZYI, ZGD and ZJO for their operating time and to ZL2BKY, ZL2GL, LU8EBI and PY1ZAK for their assistance.

Amateur radio will never be forgotten by the ocean sailors of Sydney.

Prepared by David A. Pilley VK2AYD, Public Relations Officer, Manly Warringah District Radio Club. ■

N.S.W. Guides

RADIO MUSTER

The Girl Guide Association in New South Wales is conducting a Muster at Dubbo from the 29th August to 5th September, 1982, and for the first time in New South Wales there will be an amateur radio station in operation on the site.

This station will be operating as part of the Muster programme and has been requested by many of the Guides who have

Geoff was equipped with a letter of greeting and introduction from the committee of the EMDRC.

Anyone is welcome at ARRL Headquarters during office hours (8.00 a.m.-4.30 p.m.), Mondays to Fridays, and tours of the administrative complex and Maxim Memorial Station, W1AW, are conducted on the hours of 9, 10, 11, 1, 2, 3 and 4. Geoff's special guide was Peter Dell KB1N, one of the 120 staff members. (When one considers that the USA has more than 400,000 amateurs it is easier to appreciate the need for so many staff members.)

In the foyer of headquarters building are three glass display cases showing the history of components and equipment of our hobby, whilst suspended from the ceiling is a 90 pounds radio controlled glider which used to fly in the mid-1930s. Geoff quotes "Quite a sight. Goodness knows how it flew. Definitely heavier than air."



Geoff's tour included a description of the services and operations of various departments: Communications, Club and Training, Technical, Membership Services, Advertising, Production, Circulation and Controllers (Accounts) Departments. But the highlights of the tour were the Museum, Hiram Percy Maxim's "Old Betsy" Spark-gap Transmitter (still in working order) and the Ralph P. Thetreau Memorial Antenna System.

W1AW operates from 7.30 am. to 1.00 a.m., Monday to Friday, and 3.30 a.m. to 1.00 a.m. on Saturdays and Sundays. Any FCC licensed amateur may, on the presentation of his current FCC amateur licence, operate the station between 1.00 p.m. and 4.00 p.m., Monday through Friday.

Geoff was disappointed that his time was limited due to his business commitments, but his short time spent at ARRL headquarters was most enjoyable and enlightening. ■

* * * *

"He was never happy about anything. He was always so out of sorts that when he died and knocked on the Gates of Heaven, St. Peter greeted him with, 'Come in, but I'm sure you're not going to like it here!'"

COUNCIL REPORT

A special Council meeting was held on the 4th of May to discuss the sale of 14 Atchison Street, Crows Nest, the current Divisional Headquarters. Stephen Pall and Susan Brown reported on discussions with various real estate firms. Council considered written submissions from two of these firms and resolved to appoint Baillieu Hardie Gorman Pty Ltd. as selling agents. An expenditure of \$2,500 for a marketing campaign by this firm was approved.

At the meeting held on the 14th of May, Council decided to purchase a property in Wigram Street, Parramatta. This property will become the new Divisional Headquarters once Atchison Street is sold in June. Council adopted a policy statement outlining the future requirements of the NSW Division. The following officers were appointed: QSL Officer, Doug Pearson VK2AVO; Slow Morse Supervisor, Marshall Emm VK2DXP; NSW AR Publicity Officer, Tom Delandre VK2PBT; Dural Committee, Peter Jeremy VK2PJ, WICEN Committee, Tim Mills VK2ZTM, replacing Fred Parker VK2NFF/ZBK. The positions of JOTA and VK2 Contest Publicity Officer remain unfilled — perhaps you may care to volunteer. Council resolved to purchase additional copies of various amateur radio publications to improve the service to members using the Divisional Library.

For the fireworks night, Council approved an expenditure of \$1,800, to be paid for from ticket sales. To provide added safety on the night, the Dural Committee was authorised to purchase and install four extra floodlights. Dural Officer Jeff Pages presented a report for May. Approval was given to construct a 160 metre receiver to further improve broadcast facilities. The length of and delay in conducting call-backs was discussed and ways of improving this situation will be investigated.

POLICY STATEMENT, FUTURE REQUIREMENTS OF THE NSW DIVISION

A. A CENTRALLY LOCATED OFFICE ABLE TO PROVIDE MEMBERSHIP SERVICES, E.G.:—

- (i) Correspondence to and from members, Federal WIA, affiliated clubs, AOCIP correspondence courses, etc.
- (ii) Storage and accessibility for a Divisional Library, including an archival section.
- (iii) Sales of publications, small disposal items and sundries.
- (iv) Meeting room (combined with library area) for up to 30 people.
- (v) Meeting room to double as a lounge/reading area for members visiting during weekdays and evenings.
- (vi) Possible future storage area for Education Service publications.

B. A TRANSMITTING STATION CAPABLE OF THE FOLLOWING:—

- (i) Weekly broadcasts on multiple frequencies.
 - (ii) Occasional WICEN emergency or training use, including the weekly WICEN net.
 - (iii) Occasional outdoor functions.
- C. QSL BUREAU PREMISES. (These are at present provided free by Westlakes.)
- D. LARGE MEETINGS, such as AGMs, EGMs, WICEN Co-ordinators' Conferences, Conferences of Clubs, etc., can be catered for by hiring (often at no cost) suitable large convention rooms or halls.

6th CONFERENCE OF CLUBS

The 6th Conference of Clubs was held on Sunday, the 23rd of May at the Revesby Workers' Club, the host club being the Liverpool and Districts Amateur Radio Club. Bob Demkin VK2KAN was Chairman and Kevin Kenny VK2YPZ acted as Secretary. Twelve clubs affiliated with the NSW Division were represented at the Conference by the following delegates (the number of votes allocated to each club appears in brackets):

Bathurst ARC, Neville Wilde VK2DR (1); Central Coast ARC, Stan Dogger VK2KSD (5); Goulburn ARS, Marshall Emm VK2DXP (2); Hornsby ADARC, Barry White VK2AAB (2); Liverpool ADARC, John Duffield VK2KDJ (1); Illawarra ARS, Dennis McKay VK2DMR (8), Mid South Coast ARC, Stan Bourke VK2EL (4); Orange ARC, Wally Watkins VK2DEW (3); Parkes ADARC, Neville Wilde VK2DR (1); South West ARS, Greg Weis VK2VVM (3); Wagga ARC, Jeff Brill VK2KKB (3); Westlakes ARC, Keith Howard VK2AKX (11).

A total of 27 persons were present, including five members of the NSW Divisional Council. The meeting adopted the minutes of the 4th Conference of Clubs and of the meeting of Clubs held at Wollongong in 1981.

Agenda items carried by the meeting included: (1) That a general calling frequency of 28.49 MHz be adopted on a State-wide basis. (2) That all items for future Conferences of Clubs should be accompanied by a brief explanation of intent. (3) That the John Moyle National Field Day be afforded a lot more publicity by the WIA during the three months prior to the contest. (4) That the DOC be asked to hold all exams quarterly. Other agenda items were either lost, referred to the next Conference or withdrawn. All motions carried at this Conference will now be considered by Divisional Council.

A presentation was made to the affiliated Club achieving the greatest percentage increase in WIA membership since the last Conference. A merit certificate and a UHF SC9 transceiver were awarded to the Orange Amateur Radio Club in recognition of its achievement of a 40 per cent in-



Delegates, observers and council representatives at the 6th Conference of Clubs.

(Left to right, top to bottom: VK2s DBA, EL, BYY, ZTM, PJ, DEW, ZMZ, DXP, YWR/VTD, VVM, KDJ, KBK, KAN, YPZ, ATR, AKX, DPY, BSB, DR, DMR, ZTB, AAB, KSD, PNK.)

crease. Divisional President Susan Brown VK2BSB commended the Westlakes Amateur Radio Club on its achievement of an 18 per cent increase as this meant 31 club members had joined the WIA. Merit Certificates were presented for participation in the John Moyle National Field Day VK2 inter-club contest to the winning clubs: Griffith Amateur Radio Club in the 24 hour open section with 7,767 points and the Liverpool and Districts Amateur Radio Club in the 6 hour phone section with 1,360 points.



Presentation to winning VK2 clubs in the John Moyle Field Day — left to right: Greg VK2VVM, Griffith ARC; John VK2KDJ, Liverpool ADARC; Sue VK2BSB, Divisional President.

The next Conference of Clubs will be hosted by the Westlakes Amateur Radio Club at a date and venue to be advised.

DETAILS OF TWO CLUBS AFFILIATED WITH THE NSW DIVISION
MID SOUTH COAST ARC
PO Box 7 Milton, NSW 2548.

NET: Wednesdays at 2030 EST on VK2RMU repeater channel 6700.



Wally VK2DEW receiving certificate and SC9 transceiver on behalf of Orange ARC, for highest percentage increase in WIA membership.

MEETINGS: As and when announced, quarterly.

PRESIDENT: John Telfer VK2BTQ. Vice-President: Hal Knott VK2ZEN. Secretary: Jim Yalden VK2YGY.

MAGAZINE: Lyrebird, quarterly, Editor Hal Knott.

GUNNEDAH ADARC
C/- 7 Marcia Street, Gunnedah, NSW 2380.

MEETINGS: 1st Thursday of month at 8 p.m. at Scout Hall, South Street, Gunnedah.

PRESIDENT: Simon Lister VK2AIS. Vice-President: Barry Harwood VK2KAY. Secretary: Russell Parker VK2PNJ.

REPEATER: VK2RAB, channel 6850.

VISIT BY U.S. AMATEURS

A group of USA amateurs have notified this Division that they will be visiting Aus-

tralia in October. They will be in Sydney on October 10th to 13th and would like to meet local radio club members and interested amateurs during this visit. If you can assist you can write to Gary Pickard WB7VIW at PO Box 10187, Phoenix, Arizona 85064, USA. A reminder will be given on the broadcast just before their proposed visit.

COMING EVENTS

Tamworth Field Day, September 4/5.

NSW members and clubs are invited to submit news for inclusion in this column to PO Box 123, St. Leonards, NSW 2065. News for August AR should reach us by June 20.

Photos by Athol Tilley VK2BAD



RTTY Scheds

VK2TTY is the official station of the Australian National Amateur Radio Teleprinter Society (ANARTS) based in Sydney.

VK2 Broadcast for radio amateurs every Sunday on the following frequencies and times:—

- 7.045 MHz at 0030 UTC.
- 14.090 MHz at 0030 UTC.
- 3.545 MHz at 0930 UTC.
- 146.600 MHz at 0930 UTC.

W1AW is the news service station of the ARRL. They have daily predictions as well as ARRL and CRRL bulletins.

Immediately following their broadcast they re-transmit it using 710 baud ASCII and standard RTTY tones of 2125/2295 Hz.

W1AW recently changed to their summer transmission schedule, simultaneous transmission on 14.090, 21.890 and 28.090 MHz.

Times: 2200 UTC, but Monday to Fridays only, also at 1500 UTC.

GB2ATG is the news service station of the RSGB and the Amateur Group (BARTG). They are currently using their summer transmission schedule broadcast every Sunday at 0730 UTC.

VK3RTY, the new RTTY repeater, will be operating from a temporary suburban location under test conditions on some evenings during the next few weeks between 1000 UTC and 1200 UTC.

The frequencies required to access the repeater are: Input 147.950 MHz; output 147.350 MHz.

NOTE: A space character from the space bar must be sent to open the repeater. After this you may type normally.

More RTTY news is welcome.

"Doctor, I have come to see you because I have the feeling that no one understands me."

"Oh, nonsense. What makes you think someone is persecuting you?"



VK4 WIA NOTES

THE SUNSHINE STATE "JACK FILES MEMORIAL CONTEST"

The annual Queensland contest is on again this month. The aims of the contest are to remember the late Jack Files and to give amateurs the opportunity to work VK4 stations to obtain the Worked All Queensland Award. The rules for this year's contest will be found at the end of these notes. We would like to see a lot of activity and receive a good many logs. All stations participating are especially requested to heed the upper frequency limitations on each band.

THE AMATEUR ADVISORY COMMITTEE

Recently two members of the Queensland Council of the Institute attended a meeting of the Queensland Amateur Advisory Committee. They were able to report that the committee is alive and well and active in VK4.

The role of the AAC is to advise amateurs who breach the regulations that they are in fact operating contrary to the rules as laid down by the Department of Communications and to guide offenders. The AAC is most certainly not there to act as a policeman for the Department. It is there to advise you and me when we do wrong so as not to incur the wrath of the Department.

It is in our own interest when called by a station owned by a committee member to listen to his advice and accept it as help and not as an admonition. If the friendly advice is not heeded, you will be dealing with the Department, not a fellow amateur.

A member of the AAC addressed our Radio Club Workshop and judging by the attention he received and the questions asked, his attendance was much appreciated.

The Queensland Council recently passed a vote of thanks to the DOC Chairman and amateurs who serve on this committee and fully support the actions of the Queensland Amateur Advisory Committee.

OLD TIMERS' LUNCHEONS

In recent months two old-timers' luncheons have been held in Queensland, one at Southport on the Gold Coast and the other in Brisbane. To be eligible to join these senior amateurs, one must have been licensed prior to 1930. Peter VK4PJ was host at Southport and Harold VK4HB did the honours for the Institute in Brisbane. Peter is our Divisional Historian and Harold, of some three score years and ten, is the "JUNIOR" Vice-President on the 1982 Council. Of course, we have an ulterior motive in promoting these get-togethers, all the yarn spinning stimulates memories and that is just what our wily historian has in mind.

IPS COURSE

During May, Brisbane amateurs were indeed fortunate to be invited to attend a series of lectures given one evening by

K. B. Pounsett VK4QY
33 Lasseter Street, Kedron, Qld. 4031

Dr. Leo MacNamara, head of the Australian Ionospheric Prediction Service. Dr. MacNamara's lectures were very well presented and of very great interest. He shed a lot of light on how the radio waves that we transmit do or do not get to their destinations.

If you people in other States have the chance to hear Leo, don't miss the opportunity. ■

THE SUNSHINE STATE "JACK FILES MEMORIAL CONTEST"

All radio amateurs throughout the world are invited to participate in this contest, the aims of which are to perpetuate the memory of the late Jack Files and to enable amateurs to work stations for the Worked All Queensland Award and other awards issued by amateur radio clubs in Queensland.

DATE AND TIMES

Saturday, July 17, 0830-1300Z (1830-2300K).

DIVISIONS AND SECTIONS

- STATIONS WITHIN VK4:
 - TX ALL BANDS.
 - TX HF ONLY.
 - TX VHF UHF ONLY.
 - TX ALL BANDS CLUB STATIONS.
- STATIONS OUTSIDE VK4:
 - TX ALL BANDS.
- SWLS:
 - RX ALL BANDS.

RULES

- CONTACTS via repeaters or cross-band or cross-mode are NOT permitted for scoring purposes.
- STATIONS may be worked repeatedly on all bands and modes provided that one hour has elapsed since the previous contact on that band and mode.
- SCORING:—
 - Stations within VK4: HF/VHF/UHF contacts to Other City or Shire, 5 points; Same City or Shire, 3 points. Outside VK4: 1 point.
 - Stations outside VK4: HF, VHF, UHF contacts to VK stations, 1 point; no points for other call areas.
 - SWLS: HF, VHF, UHF stations logged as per rule 2, 1 point. In accordance with the aims, bonus points as follows apply: For the first contact to each Queensland City or Shire on each band, 10 points. For every contact with a VK4 club station, 10 points. These are additional to the points above.
- On the various HF bands, it is recommended that operation be below 1820, 3600, 7075, 14175, 21175, 28450 kHz.
- ALL LOGS shall show date, GMT, band, mode, call, n-sent, n-received and points. There must be a front sheet with the usual station, Division and

score details and declaration. Entrants in Division 1 (a) will also be considered entrants in 1 (b) and 1 (c) provided the score is shown separately on front sheet. Logs must reach the WIAQ Contest Manager, PO Box 964, Townsville, Qld. 4810, before 2nd August, 1982.

- AWARDS will be given to the highest score in each section. However, should a contestant receive an award in one section, he will not be eligible for an award in any other section.
- THE CONTEST MANAGER's decision will be final and no dispute will be entered into.

W. G. Sebbens VK4XZ,
VK4 Contest Manager. ■



VK3 WIA NOTES

David Johnson VK3YWZ
82 Naples Road, Mentone, Vic. 3194

OFFICE BEARERS

At the first meeting of Council for 1982/83 the following people were elected to office-bearer positions:—

President of Victorian Division and Federal Councillor: Alan Noble VK3BBM.

Vice-President and Membership Coordinator: Robert Campiciano VK3YMU.

Secretary, Alternate Federal Councillor and Outwards QSL Officer: Des Clark VK3DES.

Treasurer: Lindsay Rohrlach VK3VIR.

Chairman of the Broadcast and WICEN Committees: Peter Mitchell VK3ANX.

Chairman of Council: Alan Heath VK3KZ.

Vice-Chairman of Council: Keith Scott VK3SS.

Also elected were John Hogan VK3VQV as Zone and Club Liaison Officer, and Council Minute Secretary, Barbara Grey VK3BYK, continues to handle the Inwards QSL Bureau, John Adcock is the Library Officer, Philip Berchdolt organises the classes with Fred Swainston, Ron Cannon and Brian Waldron the instructors, Fred McConnell VK3BOU is the Properties and Equipment Officer as well as the Disposals Officer, and David Johnson VK3YWZ handles AR Liaison, Publicity and Council News.

The Public Relations Officer and Book Officer positions have not yet been filled and Council would be pleased to hear from any volunteers willing to undertake these duties.

INTERFERENCE ON AMATEUR BANDS

It is most important that Council remind all amateurs that it is counterproductive to comment on any deliberate interference observed while on air. This includes particularly interference on repeaters and during broadcasts. Any observations repeated on air serve only to caution the nuisance (and satisfy his unusual predilections) and make OF tracing more difficult. Any observations should be reported to the section handling interference in your nearest Department of Communications office. ■



LETTERS TO THE EDITOR



Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

5/17 Cooloongatta Road, Camberwell, Vic. 3124

The Editor,
Dear Sir,

I refer to page 17 of AR for May 1982, in particular to the story about, and the picture of, the "VK4 OLD-TIMERS' GET-TOGETHER". Some, if not all, of the amateurs concerned were early day stalwarts of the WIA, and I feel it only proper for me, as one who remembers, to make special references to Leo Feenaghty ex VK4LJ.

For the information of those who have forgotten, as well as those who don't know, "Leo J." was the work horse behind the production of the first solely amateur wireless magazine to show up in Australia. It was called "QTC", and comprised a monthly issue of 16 or so sheets of oneed (both sides) foolscap. In the four years and five months of its existence, 53 issues (a lull hand) were produced. All workers, including correspondents, gave their services for free throughout. The period concerned were the years 1927-1931, and it is interesting to note that some of the "activists" of that bygone era are still very prominent in amateur radio affairs in Australia today, while quite a few others are on the air daily.

("QTC", by the way, had a subscription rate of 70 cents per annum, post free, and had clients and subscribers in all corners of the globe!)

In late 1931 it would appear that the WIA saw a need for a printed Official Organ and, because of this proposal, Leo Feenaghty decided (to quote his own words) that "THE EXTINCTION" of "QTC" was the only possible course open to him, because he could not continue to publish a book which would be in opposition to the appointed Official Organ of the WIA, as this would be in direct opposition to our policy!

Thus VALE for "QTC" — and the emergence of a successor — both being forerunners of the present AR. For 4½ years pioneer (in the amateur radio [journalistic sense] Leo Feenaghty conceived, nourished, fed and nurtured "QTC" from the very vitals of his energy and loyalty to the causa of amateur radio. It is great to know that Leo is still around, mixing it with the gang socially, if not via the airwaves. His magazine is long dead, but its memory and the spirit it created will never die!

Yours faithfully,

Eric Trebilcock (L30042) (BCRS-195).

44 Wren Street, Altona 3018, Australia

The Editor,
Dear Sir,

NETS DON'T OWN FREQUENCIES

Being an ex novice who grew up on low power and the need for nets to have a chance against the high power boys with their 150 lt. high towers and stacked arrays and their kilowatt plus power out. Nets are one way for the little bloke to work some of these short-stay DX expeditions where the QRM is a constant 20 dB over 9 for the duration of their stay. What hope the QRP operator who sometimes spends up to 14 hours per day for days and still not get through to the rare one? A lot of sleepless nights and QRM from the old girl all for nothing. How much easier to work the rare station on a well controlled net where neither the rare station or the calling station has to put up with the rest of the world creating up to 20 kHz

of what sounds like to me, the babble of barn-yard chooks.

These well controlled nets therefore save band space of up to 30 kHz. Particularly when the station is transmitting on 195, listening 200-220, you have frequency policemen shifting anyone who goes within 5 kHz of his transmitting frequency, that is 30 kHz down the drain for one station alone. What happened to the "Thou shalt not be more than 3 kHz wide"? You will notice I mentioned well controlled nets, that is the crux of the matter. We, as novices, had a net on 21.183 MHz that had around 200 countries check in and not once, to my knowledge, was there any hassles or rubbish or bad feelings created by this net. I was therefore very much surprised at what happened after I obtained my full call and was able to operate on the larger range of nets available with this licence. I was at first pleased with the extra rare stations available to me, however, it became apparent that there was something creeping into the amateur bands that was prevalent in the CB bands, and was the reason that a lot of us upgraded to novice then full call to get away from, which, if continued, will give us the "Ugly Australian" image in amateur radio with a large group of overseas amateurs.

As I often listen to and also check into several overseas nets when time permits, I have never heard the same deliberate QRM or derogatory remarks made about their nets; I can only assume that we must be at fault. After listening and operating on the local nets, I must agree with some of the remarks made by some of the overseas amateurs, "DX nets do not own frequencies". There is, however, a tacit agreement that if you are asked politely could the frequency you are now using be taken over by a long established DX net, nobody minds shifting.

However, the latest practice of deliberate (?) bad manners leaves a lot to be desired. One of the latest methods is to start transmitting 1 or 2 kHz up from the net frequency and, when the ORM of stations calling in shift the station on the DX net frequency, then they slide down. That (gentlemen?) is dirty pool. They could ask one station to please QSX, but how do they ask 100 stations calling into a DX net to shift? This is, however, only minor to outright jumping on top of some station who has had use of the frequency and, by the rules and regulations, is allowed to keep it. As the regulations state, if you have forgotten, gentlemen, first listen on frequency, then if you think the frequency is clear, then it is only polite to ask if it is clear, if no reply, then transmit.

Not like one of our local net controllers who jumped right on top of an EA station, who had, to my knowledge, been using the so-called exclusive DX frequency for at least 30 minutes before net time. He was 5.9 +20 into VK3 and could not be missed even on a dummy load. When up comes local VK3 net controller and starts taking check-ins spot on his frequency. Quite naturally, the EA station was quite upset. As the EA station was a well known DXer, with many friends around the world, he was most insistent in asking what was going on, however all he got from the local net controller was "There is an EA station causing QRM, please QSX as this is a DX net frequency".

When the EA station was at last acknowledged, due to the insistence of other overseas amateurs.

The reply from the net controller was "You are 5.9 +20 dB, OM. What can we do for you?"

Question: If he was 5.9 +20 to the net controller, as he had been to me for at least 30 minutes before the net, why jump on him in the first place?

As it turned out, all he wanted was the internationally accepted polite request, could the net use the frequency. He half-heartedly got that request. His reply was "Thank you for asking. I will now QSX." He left the frequency as a gentleman, which

is more than I could say for our net controller. I could go on listing offence after offence, but suffice to say, anybody who has listened to the continuing ZL affair, where I have heard the net controller trying to explain to overseas amateurs for up to half an hour at one time, why certain actions were taken to get this amateur rapped over the knuckles; enough said. I do not believe two wrongs make a right, and am not going to enter into the argument as to who is right or wrong, all I am trying to point out is that it should not have happened in the first place.

As you always have a group of hotheads in any collective group, I only hope that it does not degenerate to the situation that arose a few years ago that was much publicised in a local national magazine, where a group of CBers got it into their heads that a local amateur was causing deliberate QRM on 27 MHz. They descended on his house in a convoy of cars, cut his coax for HF, UHF and VHF, some of it costing \$3.50 per foot, and threatened him with physical harm. After the police had arrived and sorted things out, it turned out that the interference was located half a mile away from the amateur's QTH. You might say this doesn't happen in amateur ranks, but how often lately have you heard the deliberate QRM by some ratbags?

A lot is also created by fellow amateurs who have some grievances against the net, or the accusations real or imagined, slanted at one particular station, that he is causing QRM, with the net controller saying, "We know where it is coming from, all point your beams to ZL". Only to find that the QRM is coming from VK, or the States, or Europe, but not ZL. Talk about give a dog a bad name. How come nets like the Caribbean or Seonet, or the Round Table, etc., just to name a few, don't get the same recurring problems we get down here. Maybe we have upset more people than we think. Perhaps it is time we stepped back and had a good look at our operating methods, as we don't want the majority of hard-working, conscientious net controllers, who do a thankless task just to help out his fellow amateurs get that rare one, being bypassed by those rare stations because of the image created by a couple of inconsiderate acts of VK net controllers who should know better.

Let's face it, we as net operators are only a small minority group compared to the number of amateurs operating around the world on many modes, all trying to help one another. Why should we be one of the few areas in amateur radio where ill feelings are created? Who cares if the net is plus or minus 5 kHz? If they want to join the net they will find you.

CONCLUSION:

Before you shout see who's about.
Nets don't own frequencies.

Jim Joyce VK3DFD.

10 Colchester Drive, East Doncaster 3109
The Editor,

Dear Sir,

THE "SILENTS", THE "TALKIES" AND THE HAMS THAT MADE THEM GO!

For posterity I am moved to ask those who may have something to say of hams they know, once knew, or be it themselves, engaged in the film projectionists' industry.

This profession and amateur radio seem to have endured a very close affinity with each other since both were invented — or so I have noticed!

Now in the fullness of time there is quite a tale to be told.

Many humorous overtones go with such stories which I hope "Amateur Radio" may publish with appropriate acknowledgement to any who contribute such interesting information in this arena.

VK3CD, QTHR.

73. Alan Campbell-Drury VK3CO.

The Editor,
Dear Sir,
In reply to Leslie Arnold VK7AM may I tell briefly of how the new badge (International Diamond) does offer immediate recognition.

I was in USA during March-April and wearing the new badge in my lapel. I was stopped on a number of occasions by people who recognised the badge and symbols and were interested to hear of AR in Australia. I showed them the original badge and other than indicating Australia they said they would not have stopped me, as with all badges details are too fine to see at a distance, whereas the diamond had a characteristic style.

There is no reason why both badges cannot be worn (after all we do have two National Anthems now), the choice of which is determined by the particular occasion.

Yours faithfully,
Geoff Atkinson VK3YFA.

30 Somerville Road, Hornsby Heights, NSW 2077
The Editor,
Dear Sir,

Could we please draw attention to a misconception that exists regarding the CW "Gentlemen's agreement" and with which, surprisingly, a great number of amateurs are apparently unfamiliar.

The "Gentlemen's agreement" refers to voice contacts not being made in the CW segment of the various bands, BUT DOES NOT imply that CW contacts cannot be made in the phone section of the bands. It has been my experience that a lot of people are not sure of the interpretation of this agreement and, in fact, some amateurs have been heard to castigate others for operating CW in the phone section of the bands.

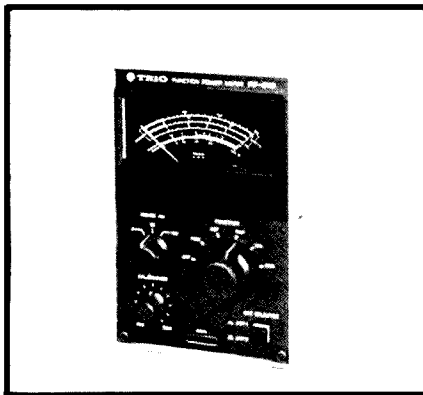
Perhaps some reference to "Band Plans" might steer these misinformed people on to the correct path.

Perhaps, hopefully, this reminder might also nudge the conscience of those who habitually frequent the CW section of 15 metres, and possibly might allow the "brass-pounders" to enjoy their OSO without the benefit of two or three SSB contacts infringing. I have specifically the novice calls in mind, who don't have much room to move on the CW section of 15 metres, and two or three SSB transmissions make things very difficult indeed. In short, gentlemen, please abide by the "Gentlemen's agreement".

73. Bill Martin VK2EBM.



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WIA INSERTS INTO AR



NOTICE TO WIA ZONES, CLUBS AND GROUPS

WIA Zone, Club and other Group Secretaries are hereby notified that inserts into AR henceforward will be accepted **ONLY** direct from a Division and then only by prior arrangement with the Secretary.

All inserts must comply with Postal Regulations and must be received not later than the 26th of the month preceding publication date.

DE-LIGHTED!

Overheard in electrical shop:—

Customer: "Have you any four-volt, two-watt globes?"

Shopkeeper: "For what?"

Customer: "No, two!"

Shopkeeper: "Two what?"

Customer: "Yes."

Shopkeeper: "No."

SILENT KEYS

It is with deep regret that we record the passing of —

Mr. H. E. HANCOCK	VK2BIC
Mr. A. F. MARSHALL	VK4AF
Mrs. F. V. MCKENZIE (OBE)	VK2FV
Mr. W. PURDY	VK2AOP
Mr. T. TOLLAND	VK4TT

OBITUARIES

IAN NICHOLS VK7ZZ
Tasmania lost one of its best known amateurs when Ian Nichols passed away on May 3rd, at the early age of 58. When he was five Ian was accidentally blinded, but he made a remarkable adaption to this infirmity, his activities ranging from house-painting to cricket.

His memory was so remarkable and his perception so acute that, amongst other achievements he obtained the degrees of Bachelor of Arts and Bachelor of Law. The latter part of his working life was spent at the Zinc Works at Risdon, near Hobart.

In 1958 he passed the full examination for the AOCF, and after that the world became his oyster. He was active on all bands from 160 metres to 70 cm and by 1979 he had worked 271 countries and had WAS on 14, 21 and 28 MHz. His numerous contacts were shown by the piles of QSL cards which were handled for him. The outwards ones he typed himself.

Although he used phone when appropriate, his true love was CW, very often in the early hours of the morning. His CW art was also used in helping many candidates pass their CW test. However, his main delight in radio was the personalities with whom he communicated.

Despite his "on air" activities he was deeply engaged in Institute affairs. For many years he was a member of the Executive Council and its legal advisor. Amongst other offices he was for some time a Federal Councillor, and was Vice-President for three terms. Finally he served two terms as President, and was elected a Life Member in 1991.

Although it is hard to imagine how he found the time, Ian had quite a few other interests besides amateur radio. He was an active church member and a busy worker for the welfare of other blind people.

Still relatively young when he died, he had certainly lived a full life. He is survived by his widow, Valerie, and a family of five.

Vale, Ian — a true friend to all who were privileged to know you.

Joe Brown VK7BJ. ■

TERENCE CONNOR VK7CT
Our mate Terry passed away April 3rd, 1982, just one week after a severe heart attack, aged 86 years.

He was educated at Rokeby State School and St. Virgil's, later doing a course at "Marconi School of Wireless" in Sydney, worked in auto electrics pre-war — joined the Reserve of the Royal Corps of Signals became involved in WIA, VK7 Division affairs, filling various positions (Council in 1937 to President 1968/1969), as well as running classes for aspiring AOCF students, many of whom were successful. He gained his AOCF No. 1643 on 31/3/36, the call VK7CT on 17/6/36, and was made a WIA Life Member in 1966. His first transmitter was a single 201A self-excited

rig on CW, also experimenting on phone by loop modulation. The receiver was a single 0.V1. At Rokeby there was no commercial power, water, sewerage and no transport, so battery operation was used. The batteries were charged from a car generator driven from a "Douglas" motor cycle engine with one cylinder blocked off. Genemotor operation came next. His OTH boasted one advantage — "NO NOISE".

He was called up by the Army as Sergeant and married before serving overseas in the Middle East and New Guinea with the 9th Australian Division of Signals, attaining the rank of Captain. On demob he resumed his pre-war occupation and was promoted to Manager in 1949. A move to Huonville made him the southern-most VK7 till 1961, when he moved to Hobart as sales representative with an electrical and engineering firm, from which he retired in 1977. Terry and his wife then toured Europe and England, calling on RSGB Headquarters and being entertained by them and meeting the faces of the voices he knew. He was given the honour of entering his name and call in their visitors' book, finding he was apparently only the second VK7 to do so.

He was one of the original members of the VK7 sewing circle, 3.590 MHz, 1700/1800 daily, which started after the war and was a regular on that net till a few days before taking ill.

He is survived by his wife, Adeline, a son, Brian, and three daughters, Judy, Katy and Jill.

Bill Tanner VK7TE. ■

ERIC HANCOCK VK2BIC
It is with regret I announce the passing of Eric Hancock VK2BIC, of Broken Hill, at his home on April 6th, 1982, after a long illness.

Eric gained his novice licence late in life with the call sign VK2NCL, and operated late into the night on many occasions, before gaining his full call, VK2BIC. Eric then became interested in radio teletype, which took up much of his time, as he was a telegraphist for many years with the PMG before becoming Postmaster at Broken Hill.

His presence will be sadly missed here, and I have no doubt also on the air, by all who knew him. Our deepest sympathy is extended to his wife, Edith, and his two daughters, Lurlene and Lorraine.

Randall Lawrence VK2KKL. ■

Mrs. F. V. MCKENZIE (nee Wallace), O.B.E. VK2FV

Mrs. Mac, as she was known to her multitude of friends, passed away on Sunday, May 23rd, 1982, in her 90th year.

In the 1920s, Mrs. Mac became Australia's first qualified female electrical engineer, the first licensed woman radio amateur, and the first woman member of the WIA.

Born in Melbourne on September 28th, 1892, and subsequently moving to Sydney with her parents, she was educated at Sydney Girls' High School.

Always fascinated by all things electrical, at a very early age she was able to fix lights, repair fuses, and even rewired the family home. On finishing school, Mrs. Mac enrolled in the diploma course of electrical engineering at Sydney University, and graduated in 1923. Just five feet tall and usually wearing blue overalls, she proudly admitted to being treated as an equal by the men she worked with.

After meeting, and eventually marrying, Cecil McKenzie, another electrical engineer, they opened an electrical shop in No. 6 Royal Arcade, supplying goods to electrical contractors. Realising the increasing demand for "wireless bits and pieces",

she and her husband began stocking more radio parts and less electrical contractors' supplies.

She was a very skilled telegraphist, amazing people with her skill, and she also developed into a natural teacher. Around this time Mrs. Mac, together with three others, started a magazine — "Wireless Weekly" — eventually bowing out when the financial pressure became too great. The "Wireless Weekly" went on to become Australia's well known electronics monthly, "Electronics Australia."

She wrote a cookery book and, at the request of the Education Department, also wrote an electrical safety book for children, as well as forming the Electrical Association for Women.

In 1939, realising that war was looming in Europe, she started teaching more than 50 enthusiastic girls the art of signalling techniques and the Morse Code, and as the number of trainees escalated, the Women's Emergency Signalling Corps was formed. It was a group of girls from this corps who eventually became the nucleus of the WRANS, formed in 1941.

Many of the girls of the WESC helped Mrs. Mac by acting as tutors in her training school, opened in an old warehouse in Clarence Street, Sydney.

Mrs. Mac received many requests for help, and up to 12,000 men passed through her training school during World War II, including American service personnel from the USAF and USMC, all receiving instruction from Mrs. Mac and her girls. No fees were ever charged, the girls helping with the rent, etc., by donating a shilling a week each.

After World War II, Mrs. Mac was awarded the OBE in recognition of her services, and continued her work, training pilots in Morse Code, to enable them to get work with Qantas, and also trained members of the Police Force, keeping her school operating for nine years after World War II.

A friend of Albert Einstein, she corresponded with him regularly until his death in 1955.

By 1954 the services all had sufficient training establishments for their needs, and the commercial airlines had also set up their own schools, so after training some Torres Straits pilots, Mrs. Mac closed her school and retired.

About 1977 Mrs. Mac suffered a stroke which left her paralysed in one side. Still mentally agile, she went to live in a nursing home at Greenwich. She was still in residence there when she passed away.

In recognition of her outstanding work training the WRANS in World War II, the Royal Navy Amateur Radio Society asked her to become a member of their organization, and were honoured by her acceptance.

Mrs. Mac was elected a Life Member of the Wireless Institute in recognition of her outstanding work, and there are many members of the amateur fraternity who will long retain affectionate memories of Mrs. Mac, from whom they received their training in wireless telegraphy. I am one of them.

Ken Matthews VK2WE. ■

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HAMADS

PLEASE NOTE: If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.

- Eight lines free to all WIA members \$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- OTHR means address is correct as set out in the WIA current Call Book.

TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is \$10 for 4 lines, plus \$2 per line (or part thereof) minimum charge \$10 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

Amidon Ferromagnetic Cores: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R.J. & U.S. Imports, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken St., Oakley, 2223).

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Unemployed with very little finance would like to swap a Realistic DX100 in exc. cond., 520 kHz to 30 MHz in 4 bands with orig. box and manual, and small cash outlay for a full coverage Rx with a LED readout. Write to Peter Kenyon L30037, PO Box 658, Ballarat 3350, Victoria.

WANTED

Yaesu Linear Amp. FL2100B and external VFO FV101B. Details to VK3ZY, OTHR. Ph. (03) 630 5468 Bus., or 277 4748 AH.

R390A R392/URR Comm. Rx, also Barlow Wadley XCR30 Mk. II rx and port. oscilloscope, Trio CO-1303D or similar. VK5QQ, OTHR. Ph. (08) 263 6377.

Copy of Hand Book and Circuit for Yaesu FL-50 transmitter and FV-50 VFO. VK2DJS, PO Box 150, Panania, NSW 2213.

Crystals for AWA Carphone Mods. — 4.0611 MHz, 4.0667 MHz, 4.0688 MHz, 10.3729 MHz, 10.400 MHz, 10.4166 MHz, also 36.4775 MHz overtone. Contact VK2DWF, 3/157 Brook Street, Coogee, NSW 2034. Ph. (02) 664 1306.

Old 78 Gramophone Records, also 16 in. transcription discs. VK3NJ, OTHR. Ph. (03) 546 4924.

Invalid Pensioner wants Pye Cambridge FM hi-band. Please write to David Stevens, C/o Cannon Hill PO, 4170 Cannon Hill.

FOR SALE

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Comms. Rx, R-1000 Kenwood, Mizuho ant. tuner KX-3, \$300, ONO. R. A. Duncan L50355, Flat G4-4, Flinders Drive, Bedford Park 5042.

Comp. Mem. Boards for S100 Bus. 8k static Ram, 2 boards, \$80 each; 16k Eprom board, Incl. 4 Eproms (2708), \$60. Andrew VK7AW, OTHR. Ph. (002) 20 8705 Bus., (002) 28 5807 AH.

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Deceased Estate (VK2BIC): Uriden 2020 80-10m Txcvr., \$500; Argonaut 509 80-10m ORP Txcvr., \$300; Barlow Wadley XCR-30 ptbl. Rx, \$160; Lunar HF3 100L2 HF linear, \$180; Fanlare 182 18 channel AM CB, \$50; Hustler HF mobile ant., 80, 40, 20, 10m plus base and spring, \$100; 2 x 7 el. 2m beams, \$25 ea.; Trio AG-202A audio freq. generator, \$145; Icom 22S 2m FM Txcvr., \$220; Xitec SCT-100 single card vido terminal plus 756 keyboard, \$165; Micro Modules, 2m 100W linear, \$250; 2 Oaker Block power SWR meters, \$50 ea.; Archer double range multimeter, \$20; oscilloscope, \$20; 5 position coax switch, \$20; headset with boom mike, \$20; 24-hour digital clock, \$25; 50 ohm dummy load, \$10; extension speaker, \$6; 50 uA meter, \$5; 100 mA meter, \$5; Apollo variable PS, \$30; variable PS, 1A, \$15; OP-80A paper tape reader kit, \$45; 12 hr. clock, \$10; vacuum base vice, \$8; KW Atlanta, 80-10m spare finals Txcvr., \$200; FT75B, 3 xta's each band, DC and AC PS, \$280; Trio 9R-59D Rx, \$90; all prices negotiable. Randall Lawrence VK2KKL. Ph. (080) 5285.

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Kyokuto 10SX R2 144 MHz FM dig. PLL synthesised Txcvr., 800 chan., very good order, with mike and instr. book, \$200, ONO. VK3PR, OTHR. Ph. (056) 62 2711 all hours.

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Yaesu FT101E, orig. packing, manual, all cords, mike, \$550. Ken VK3KGX, St. Kilda, Vic. Ph. (03) 658 3869 Bus., (03) 528 4229 AH.

Complete Station: Yaesu FT-107M Txcvr. (new), no WARC, \$750; FC-707 ant. coupler, \$120; Oakerblock PWR/SWR, \$40; home-brew 5A supply, \$30; much more. VK3VSM, 8 Taylor Avenue, Reservoir, Vic.

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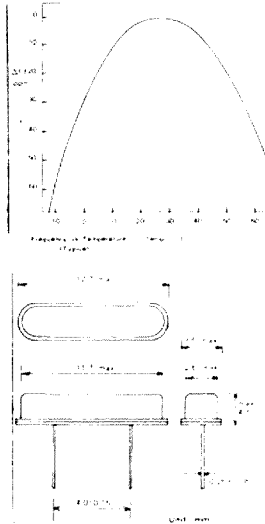
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| 1 Nominal Frequency | 32 768 KHz |
| 2 Frequency Tolerance | +30 ppm/28° +1°C |
| 3 Drive Level | 1uW max |
| 4 Series Resistance | 31 0 kOhms max |
| 5 Q Factor | 40 000 min |
| 6 Parabolic Curvature Constant | Less than -0.04 ppm/°C
(Refer Fig 1) |
| 7 Turnover Temperature | 28 0°C +5°C |
| 8 Capacitance Ratio | 700 max |
| 9 Storage Temperature Range | -30°C +80°C |
| 10 Operating Temperature Range | -10°C +60°C |
| 11 Aging rate | Less than +5 ppm/year |
| 12 Shock | Less than 5 ppm for 50 cm
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OR

Contact your local WIA Division or local book dealer.

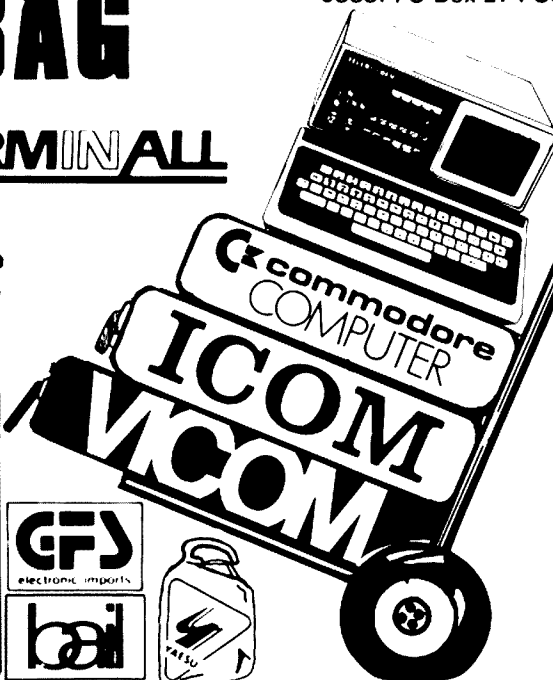
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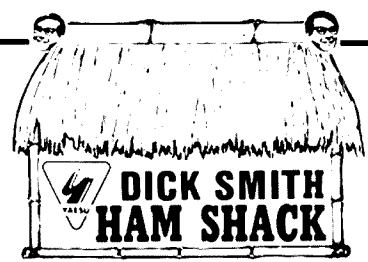


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Amateur Radio

VOL. 50, No. 8 AUGUST 1982

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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



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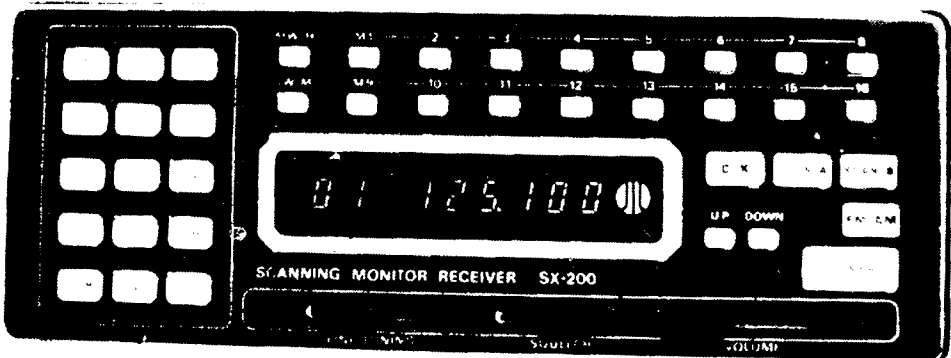
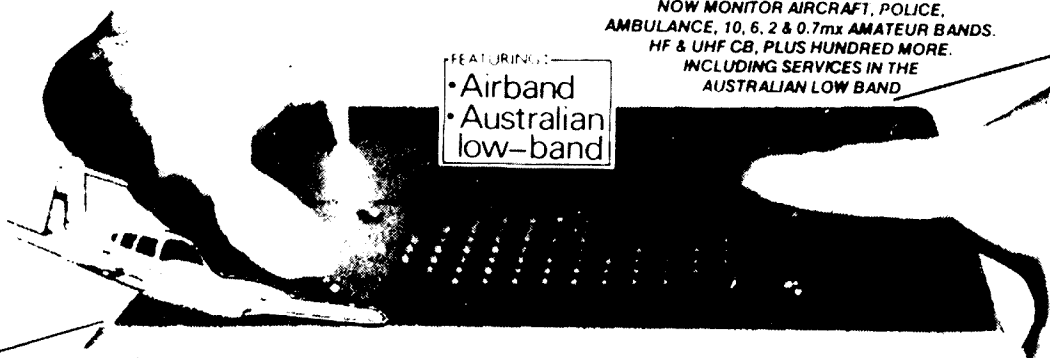
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 - d) 380-514 MHz Space: 12.5 kHz
- Sensitivity:
 - FM a) 26-180 MHz 0.4µV S/N 12 dB
 - b) 380-514 MHz 1.0µV S/N 12 dB
 - AM a) 26-180 MHz 1.0µV S/N 12 dB
 - b) 380-514 MHz 2.0µV S/N 12 dB
- Selectivity:
 - FM: More than 60 dB at -25 kHz
 - AM: More than 60 dB at -10 kHz
- Dimensions: 210 (W) x 75 (H) x 235 (D) mm / 8.14 (W) x 3.14 (H) x 9.18 (D) in.
- Weight: 2.8 Kgs
- Clock Error: Within 10 sec./month
- Memory Channel: 16 Channels
- Scan Rate:
 - Fast: 8 Channels/sec
 - Slow: 4 Channels/sec
- Seek Rate:
 - Fast: 10 Channels/sec
 - Slow: 5 Channels/sec
- Scan Delay Time: 0 or 4 sec.
- Audio Output: 2 Watts
- Ant Impedance: 50-75 ohms / Whip or External Antenna with 1.0/DX Control (20 dB ATT.)
- Freq. Stability:
 - 26-180 MHz: Within 300 Hz
 - 380-514 MHz: Within 1 KHz

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amateur radio

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COVER PHOTO



One of the Victorian Police's Kayak C30s on Port Phillip Bay — see page 6 for details.

Photo: Courtesy Police Life

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NEXT MONTH ...

**WILLIS ISLAND —  
A DXer's Paradise**





# WIA NEWS

## PARLIAMENT DEBATES RADIOCOMMUNICATIONS LICENCE FEES BILL

The debate in the Senate on 27th May reported in Hansard contains a number of interesting statements.

The Minister introducing the second reading of the Bills commented that the intent of the Bills is to allow for radiocommunications licence fees to be determined on a basis other than solely the recovery of the costs administering the radio spectrum. The fees would be set out in regulations made under the new Licence Fee Bill instead of under the W/T Act of 1905.

The Bill also includes a provision to ensure that all Commonwealth and Territory authorities are required to pay fees. The licence fees legislation would apply to the transmission and reception of private and business radiocommunications conducted via two-way radio and microwave links. These fees would not apply (a) to commercial television and radio stations which are licensed under separate legislation and (b) to normal television and broadcasting receivers.

The Bills were supported by all parties. In replying to the debate Senator Peter Baume said it established that the fees were taxes to put them beyond any question of legal challenge and provided for the fees to be phased in.

He also said that a complete review of the W/T Act is approaching completion, having been under way for some time: Fees are to be a separate matter.

The Minister said the principle factors which are taken into account for determining the licence fees were:—

- The effective power radiating into the spectrum;
- The band width actually occupied by the signal or reserved for the signal if it is not used continuously;
- The space over which the signal is effectively radiated and detectable;
- The time the spectrum is occupied by the signal, and that may be continuous;
- The potential for interference to other users; and
- The sensitivity to interference from other users.

He went on to say that it is necessary to divide spectrum users into a number of classes to minimise administrative costs and to facilitate the prescription of licence fees. It was not feasible to prescribe a fee for individual cases, he said. The Government opined it was impractical to relate the payment of fees to a precise formula which can be reflected in legislation as, to do so, would involve administrative procedures and costs out of all proportion to the revenue collected or the benefits to be gained. The net effect might therefore be an overall further increase in fees. Major users would be consulted before the final form of the regulations is reached and before any changes to the form of those regulations are made in the future. Regulations imposing licence fees will, of course, be subject to parliamentary scrutiny and disallowance by either House and are reviewed on an annual basis. Present fees are currently under review but it was not the intention of Government to increase fees immediately and substantially.

Consultations between DOC and the WIA took place on 23rd June, resulting from a DOC written request for comment on the Bills. The Institute has replied in writing to the Minister that, notwithstanding the Constitutional desirability of enacting a separate Tax Act, an assurance is required that there should be no element of taxation as such in any licence fee required to be paid by amateur licensees, there should be no immediate increase and that any future increases should not exceed the CPI increase. The Institute also commented that, unlike commercial users of the spectrum, licence fee increases could not be passed on and,

additionally, the amateur service should not be brought into any cross-subsidisation schemes with other services — the fees should reflect only a reasonable and proper cost recovery.

## EXAMINATION FEES ALSO UNDER REVIEW

Here is the text of a letter received from DOC.

*"You will be aware that Section 42 of the Wireless Telegraphy Regulations sets out fees to be paid by candidates sitting for various certificate of proficiency examinations. The Department is now planning to institute a new fees scale on a cost recovery basis.*

*Before the final form of the regulation is reached, the Department wishes to consult with your organisation. The Department considers that proposals for substantial fee rises are understandable in view of the effort it expends in conducting the examinations, and the fact that the current level of fees has applied for many years.*

*As far as amateur certificates are concerned it is planned to preserve the present categories and increase the relevant fees. However it is proposed that for such a certificate involving both a theory (including regulations) and a manipulative examination (i.e. code), two separate fees should be charged, one for the theory examination and another for the manipulative examination. This would mean for example that a person resitting a manipulative examination would only be required to pay the manipulative fee, rather than, as is presently the case, the composite examination fee.*

*"A further proposal applying to all categories is the introduction of a fee to cover the cost of issuing a certificate."*

Consultations between the Executive and DOC have taken place. The WIA raised strong objections to the introduction of a fee to cover the cost of issuing a certificate in a letter to the Minister. The Institute is of the view that the exam fees should be fixed at such a level as to deter frivolous applications but not so high as to deter serious applications. Adequate notice of any increase is seen as desirable for potential candidates, along with the possibility of a phasing-in period. Coupled with these suggestions the Institute submitted that Novice licence candidates should retain a longer term credit for passes if they fail in other sections, and for other licence grades all passes should be permanent and not subjected to any time lapse.

## THIRD PARTY — USA

From 25th June, 1982, a third party arrangement between the USA and Australia came into effect by the mutual exchange of letters.

The conditions relating to this arrangement are understood to be as follows:—

*"No compensation may be directly or indirectly paid on such messages or communications.*

*Such communications will be limited to conversations or messages of a technical or personal nature for which, by reason of their unimportance, recourse to the public telecommunications service is not justified. To the extent that in the event of disaster, the public telecommunications service is not readily available for expeditious handling of communications relating directly to safety of life or property, such communications may be handled by amateur stations of the respective countries.*

*This arrangement will be applicable with respect to all amateur radio stations duly licensed by appropriate authorities of either the United States or Australia."*

Amateurs are reminded of the conditions set out in the Handbook, particularly in chapter 6.





# QSP



## IREE – 50 Years

Fifty years ago, in 1932, the Institute of Radio Engineers — IRE (Australia) was formed by splitting off, "by mutual consent" from the NSW Division of the Wireless Institute of Australia.

During the 1920s, a number of members professionally involved in the new science of Wireless Telegraphy and associated activities, felt there was a need for a more professionally (and in some cases, commercially) orientated body to which similarly inclined colleagues could associate. Amongst them was Ernest Fisk — later to become Sir Ernest Fisk of AWA and the man destined to be the first president of the IRE.

By 1932 the WIA was well established in all States and it took about twelve months for the IRE likewise to set up a division in each Australia State.

There were, of course, many individuals who belonged to both organisations. Perhaps a notable example is a past President of the WIA, H. K. Love of Kingsley Radio, whose QSL card proclaimed him as MWIA and MIRE. Dual membership still exists today.

During 1964 the IRE became the Institute of Radio and Electronic Engineers — IREE when "it was concluded that Radio Engineering was really a branch of the broader field of electronics".

Today, with the greater influence of digital electronics, computers and fibre optics, perhaps the Radio Engineer is becoming a rarer member of the Engineering profession.

Indeed there are so many disciplines within the Communications/Electronics/Electrical Engineering fields that it is very difficult to deline just where one starts and the other stops!

So it is with amateur radio, but whatever the mode or technique, it is still communications, and amateur "wireless" communications is the very reason for our Institute's continued existence.

To the President of the IREE, Professor J. Hillman, the Institution's Office Bearers and Members of the IREE, we send our heartiest congratulations on a successful first fifty years.

**PETER WOLFENDEN VK3KAU**  
Federal President

### WIA NEWS (cont.)

#### ITU RESOLUTION 640 — (BN)

One of the resolutions adopted at WARC 79 concerns INTERNATIONAL disaster communications. Strictly for the duration of any international disaster communication the Administration in the disaster country may authorise any of its non-amateur stations to use, under specified conditions, amateur bands as permitted, for the conduct of disaster communications. Such relief communications provided outside the disaster country shall not replace existing national or international amateur emergency networks.

The Resolution invites Administrations to provide for the needs of (a) international disaster communications and (b) emergency communications within their national regulations.

The DOC has sought the views of the WIA on this matter and discussions are expected to take place in the near future.

#### AUSTRALIAN TABLE OF FREQUENCY ALLOCATIONS

The publication of this Table is still awaited early in July.

#### IREE DINNER

The Federal President attended the IREE's 50th Anniversary

Dinner held in Canberra on 28th May, on invitation by the IREE's President, to address the august company in response to the keynote address by Mr. Jack Curtis. Mr. P. A. Wolfenden duly attended and addressed the assembled members and guests on subjects including historical background and the present diversification of amateur radio activities.

#### RTTY FREQUENCIES

As the result of Federal Conventions on the subject, the Executive have been attempting to co-ordinate RTTY frequencies without much response. Two Divisional groups now suggest that the time has arrived when specific "Gentlemen's Agreements" should be prepared concerning this mode. The matter is in the hands of the Federal Technical Advisory Committee. Allied problems relate to the interference to RTTY transmissions by amateurs believing those that they hear on the bands are commercials. Similar problems appear to be surfacing in relation to other amateur digital-type transmissions. No doubt the operators concerned abide by the terms of paragraph 5.27 in the Handbook.

# From 1920 to

# **D24**

# A NEW

# CONCEPT IN

# COMMUNICATION

# TECHNOLOGY

Bett McLachlan  
Box 39, Mooroolbark, 3138

Emergencies and disasters are unfortunately a common day occurrence, whether it is a hazardous condition arising from a fault in a petro-chemical complex, a lost child in rugged bush country or a bushfire that may be burning out of control. To assist and co-ordinate such eventualities and also provide a service for day-to-day law enforcement communication that is second to none, the Victorian Police commissioned a complex to be built at a cost of \$4.6 million which is Part One of a three stage plan that will adequately service their needs into the twenty-first century.

This complex also becomes their communications network for the whole State, being equipped with the most technologically advanced equipment available, built into a nerve centre which is known to all as "D24" and has the allocated call sign "VKC".

Some major disasters and emergencies that have been handled and co-ordinated in the last twenty years by D24 include bush fires in the Dandenong Mountains, the search for Prime Minister Holt at Portsea, the West Gate Bridge collapse and Cyclone Tracy. There have been many other search and rescue exercises, too.

Participation and co-operation by amateurs acting as individuals and also in group efforts with WICEN in two of these misadventures was called for by the authorities, and considerable traffic and essential information was passed on both HF and VHF frequencies.



Police members involved in the first Wireless Patrol, including the Commissioner.

Probably one of the first invitations by the Victorian Police for assistance by amateurs would have been on the 9th July, 1948, when the Maffra Police requested communications for assistance in the search for a lost boy in the Tinamba area.

## HISTORY

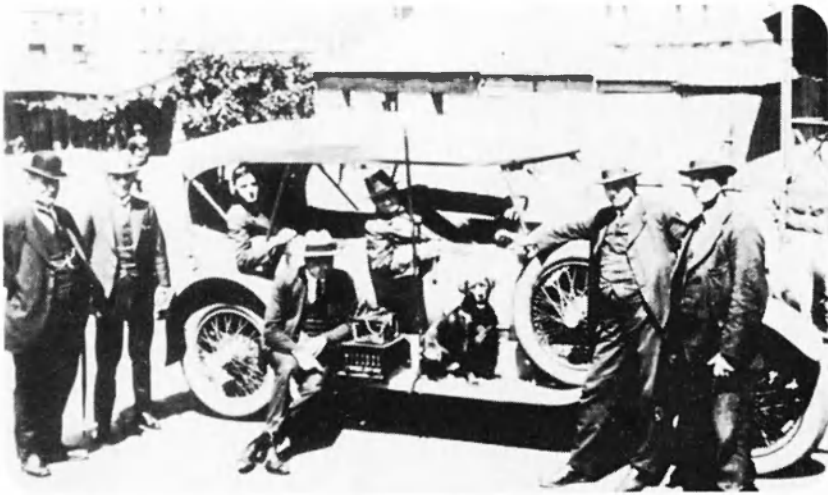
To fully understand the development of D24, a brief history of the Victorian Police Force's communications and development since the inception of the first mobile installation is outlined here, including some actual photographs to illustrate the major updates from the 1920s to the present new equipment which was officially opened in May this year, so that readers may judge the progress that has been made.

## BRIEF DIARY OF EVENTS

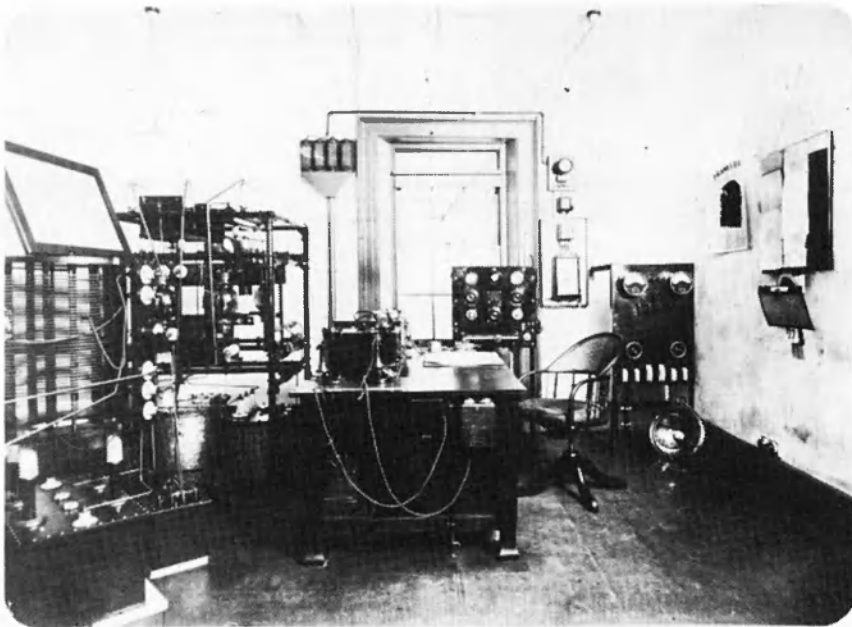
1921 Constable Downie examined the possibility of wireless communication in police cars.



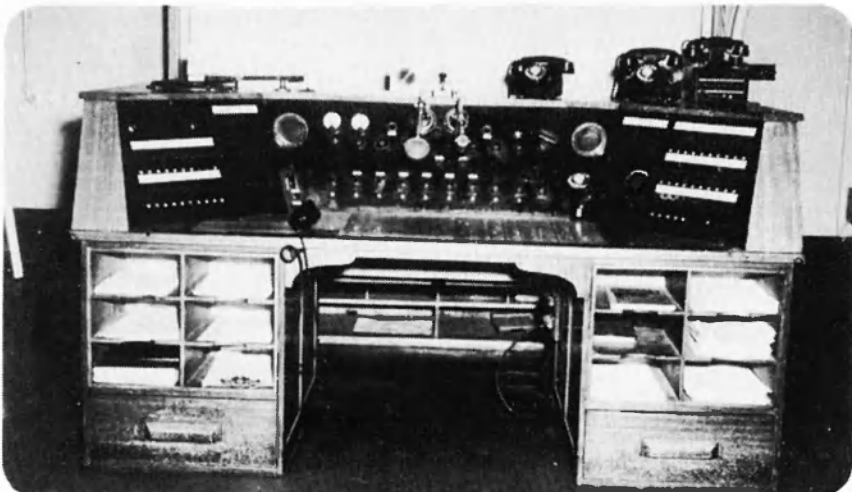
One of the communication vehicles.



A police car in early 1929. The transmitter and antenna are mounted on the "running board".



1926... The first 2 kW police radio transmitter. Note: The final tank coil on the LH side for 160 metres.



The control room console as it was in 1939.

- 1922 First voice transmission to a patrol vehicle over a distance of 15 miles.
- 1923 CW was introduced as telephony was found to be inadequate. One way transmission to the car only.  
One of the first operators was a radio amateur, the late Dick Dowling VK3XD, who in the late 1950s happily recalled on air that he had been promoted from a "Footpath Engineer" to working with Morse code in a car to receive directions in his early days with the Police Force.
- 1926 One 2 kW transmitter installed at headquarters.  
**THE LISTENER IN** on September 4th, 1926, headed an article "Police officials proudly boast that the new receiving and transmitting wireless set installed at police headquarters recently at a cost of 1,200 pounds, comprises the finest police radio section in the southern hemisphere".
- 1928 First cars fitted with two-way radios.
- 1939 D24 first set up. It is interesting that D24 came from the communications centre which was planned and was to be located in Room 24, Corridor D, at police headquarters. However, fate intervened during construction, Room 24 was partly demolished and the equipment was located in Room 23; however D24 stuck and it has been known by that name ever since.
- 1940 CW superseded by telephony.
- 1941-1950 Communications set up with other States.
- 1953 Development of radio communications with country areas.
- 1957 1630 kHz AM superseded by VHF.
- 1967 Telex communication introduced.
- 1970 SSB operation introduced.
- 1972 Four UHF channels for portable and mobile networks available.
- 1974 Single channelling upgraded to three channels and a general upgrading of D24.
- 1982 Official opening of the \$4.6 million D24 Communications Complex.

#### VERSATILITY

In an air-conditioned completely self-contained and high security protected environment, where entry and exit is only possible by presentation of an electronically coded card, and all areas are scanned by variable rate security cameras, is housed the most sophisticated and modern electronic wizardry available today.

The heart of the system is a MASCOT 1000 Radio Control System which is distributed and serviced in Australia by Philips-TMC. MASCOT is derived from the description multi-access control operator terminal, which this system truly is.

Up to fourteen operators who have the choice of using a normal handset or an ultra light headset (which appears to be the most popular) can handle incoming calls from the public that require police



Updated as in 1959.



One operator as seen prior to 1982.



Phone control operators operating position with tape recorder in background.

however this configuration can be altered to suit conditions by five thumb wheel switches which give unlimited flexibility allowing access to any assigned frequencies up to a maximum of 99.

Generally the operator only uses the one assigned to the district he is controlling. He or she has all the mobile units at their disposal, their availability being indicated by an optically driven status card system that has not moving mechanical parts, together with all of the other equipment which is placed in easy reach of the operator to minimize fatigue.



Assistant controller in foreground operating the main computer VDU and keyboard. Radio controller in background.

A matrix of high contrast low brilliance LED indicators backed up by audio alarms instantly indicate calling units, frequencies in use and other pertinent details for efficient operation of such a system and all control switches for dependability have a guaranteed life expectancy in excess of 1,000,000 operations. Fail-safe circuits are incorporated throughout the entire system, ensuring round-the-clock dependability.

As the suburban, outer suburban and country areas are divided into areas which are serviced by strategically placed repeaters and to ensure signals being received by the control centre are always of the best quality obtainable, a voting and steering system has been incorporated, which monitors the incoming VHF signal from the mobile and transmits telemetry signals on the UHF link which are above the received audio. This coding is then compared with the adjacent repeater's reception and the strongest path is chosen. This is constantly updated and a visual indication is available to the controller on the console where, if he so desires, he can override the automatic management and manually control on certain applications.

assistance or action with an average waiting time for the caller on the new system to be answered of FIVE SECONDS. Some 26,039 calls were averaged weekly to D24 in 1981, and the growth figure is in excess of 4 per cent per month on the latest figures available. All calls are recorded on banks of 40 channel tape recorders with facilities being available for instant playback if required.

Details of the information are documented by the operator on cards which are date and time stamped then despatched

to any of up to 16 controllers, who can man the communication consoles at any one time, in a matter of seconds from the initial request by an endless segmented communication belt which runs down the centre of the area and is shared by all controllers.

The radio consoles, which are of a modular design fabricated from aluminium extrusions, are a sight to behold, and each controller generally has five channels at his disposal (transmit/receive on any one channel and monitor any of the other four),

Country area operators have access to SSB transmission frequencies as well as VHF facilities and these are controlled in a similar area on identical consoles which are located at the rear of the main control room.

With the accent on operator comfort, the designers ensured that on the transmit path a change of plus or minus fifteen dB would only result in a change of plus or minus three dB to the recipient station, whilst the controller would only incur a plus or minus 1.5 dB change for a 7.5 dB change to the repeater receiver. Signal/noise ratio would be better than 55 dB and the maximum audio distortion would not exceed 5 per cent.

Each of the 16 controller positions (that comprise an operator and an assistant) also have, at their disposal, an illuminated slide screen street directory which is identical to those carried by the mobile units and can be changed page by page by a sequencing call up code. The assistant operator sitting alongside the controller has the control of a computer from which pertinent information can be retrieved in a matter of seconds.

Special circumstances require expertise, and the two duty supervisors who are located between the telephone operator and radio controller positions, aside from having instant communications with any operator and outside services, also have at their disposal a Micro Image display, which can contain up to 2,000 procedures which are to be adopted in case of specific incidents. The desired requirements are typed in, within seconds the files are searched, found, displayed and hard copies are made if desired for the operator's convenience.

All operators, to avoid fatigue, rotate duties every two hours, and the centre is organised so that minimum briefing is required to the replacement crew for a flowing continuity of ongoing operations.

Every operation is monitored by the duty officer, in an adjoining area, who has visual and audible status indicators that give indications as to the workload at that time. This is complemented by a small computer that has the capability of monitoring 640 points that analyse and detail the overall picture on a VDU.

This computer can be programmed to detail such items as the time taken to answer an incoming phone call, the time spent on the assistance given, the workload of an operator over any given period, and a hard copy read-out is generated which is segmented into half hour periods for each 24 hours of operation.

The same computer also analyses the telemetry signals from the repeater sites with such indications as transmitter or receiver malfunctions, low supply voltage or other variables, and this information is brought up on a visual/audio alarm, where a further analysis can be displayed on to the VDU and a print-out can be generated for necessary action.

#### TRANSMITTERS

All control wiring from the consoles, which contain only the minimum of electronic equipment, is terminated in an adjacent area which is ideal because the activities of the control room are not disrupted for routine maintenance or planned future additions to the system.

The VHF repeaters in various areas of the State are fed from UHF links which are, as all the other equipment, solid state, using a 24 volt rail, compact in design



Partial view of the UHF transmitter rack.

and feature extensive shielding. These units are housed in standard racks for ease of regular maintenance, serviceability and future additions.



Close-up view of some of the transmitters.

#### DISASTER SITUATIONS

Further forward thinking by the designers of the complex included in the design provision to co-ordinate up to three major disasters at any one time which would be under the control of a Commander or officer of high rank.



Disaster Room showing consoles.

This separate room is divided into a Master Control/Observation area, which overlooks consoles which are similar to



Duty officer's control and monitoring area. Computer and VDU on RH corner of console.

those in the communications area and several telephones which are for the use of essential services that may be called in to assist, such as the Country Fire Authority, State Emergency Service, WICEN and others that can contribute pertinent expertise and assistance to the special emergency or disaster that is being handled.



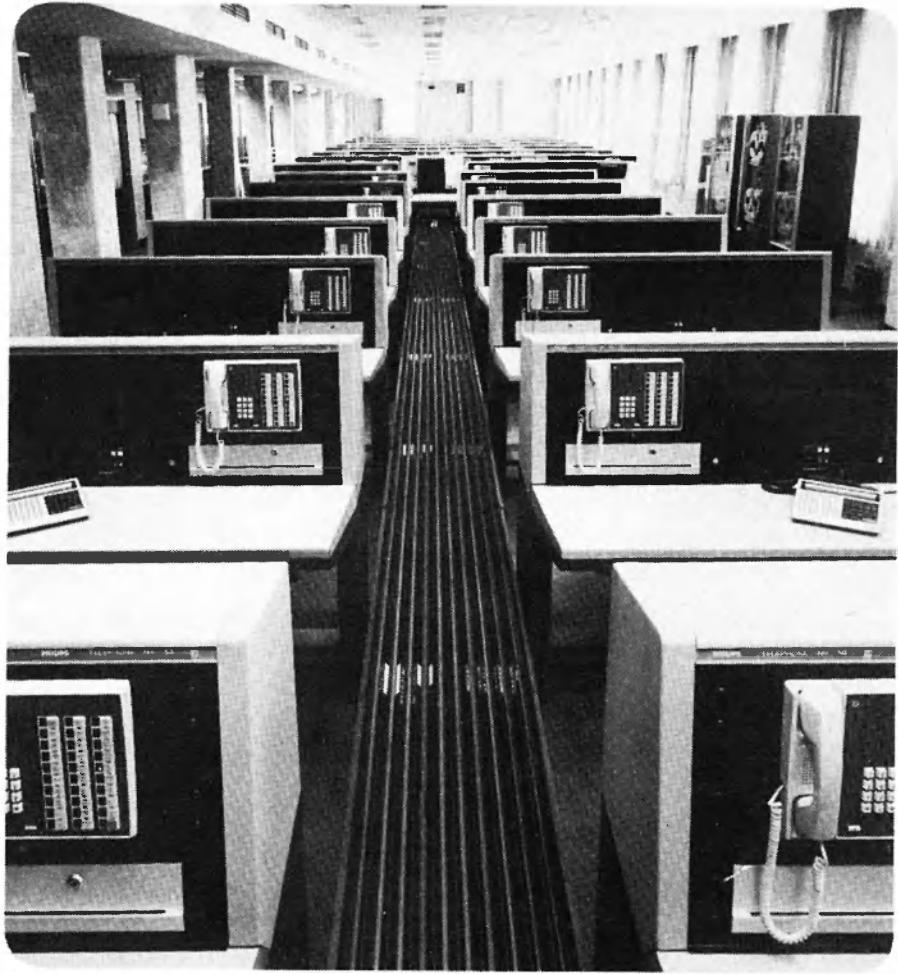
Telephone operator at the console and the OIC of D24.

The OIC has four colour TV monitors that would be tuned to television stations transmissions which would give on site pictures of developments. Other facilities include video recorders that can be patched for instant or later retrieval of information for evaluation of the situation.

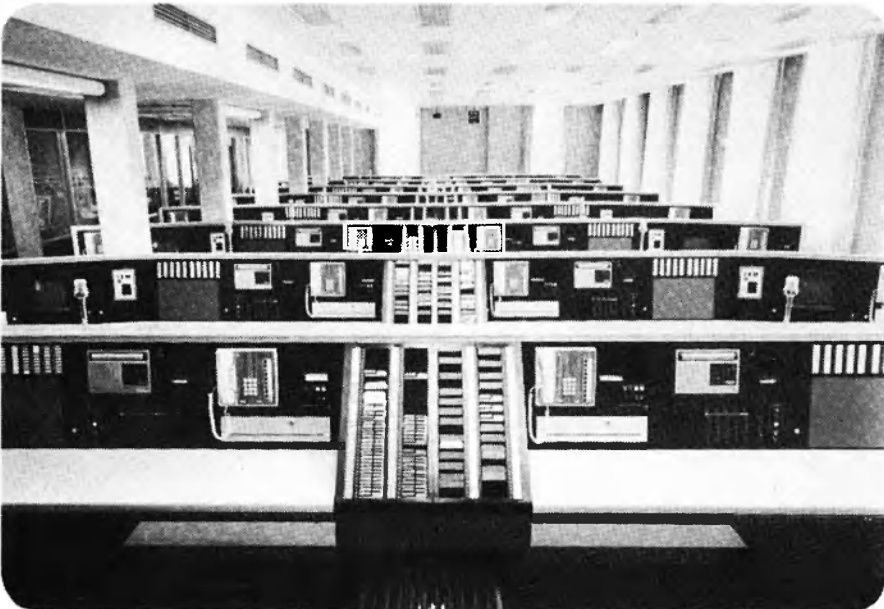
Conveniences that are on hand include monitoring of any of the channels in use back to the Master Control area, inter-communications to each operator, outgoing communication lines and provision is made that a rest area can be made up in an adjoining area for the OIC if the emergency is of a prolonged nature.

#### PORTABILITY

Disasters and emergencies never occur at a convenient time or place. With this in



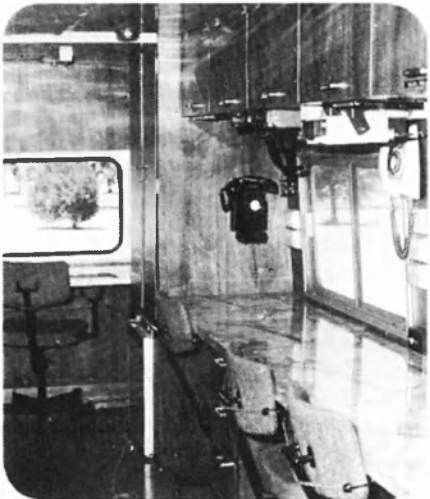
A general view of the NEW main control room at D24. In the foreground are the telephone operators desks, to the right are the multi-channel tape recorders, centre is the continuous communication belt which carries cards from the telephone operators to the radio controllers.



Radio controllers console area. The card system (centre), radio controls, visual street map directory screen and main computer VDU are shown on each side of centre.

mind it was necessary to obtain vehicles which could handle any terrain in all weathers that would be inaccessible to conventional transport. It was also necessary for them to be completely self-contained. Any deviation from obtainable production models meant that units had to be custom built to rigid requirements and specifications.

The units designed for the Victorian Police are four-wheel drive, air-conditioned communication units that are control centres on wheels. Built into these vehicles are the main attributes that are described for the master centre. These units, known as VKC4 and VKC5, can be placed in strategic positions so that the two hydraulic telescopic masts which can fully extend to some 80 feet with antennae fitted would allow communication from the remotest area, even to the extent if necessary of using one at the command post which could be located in a valley and out of communications with D24 and another on a hilltop acting as a repeater, having all the refinements of telemetry control via a UHF link, thus giving the command post complete access to the State network.



Partial interior of communication vehicle.

Teleprinter and facsimile facilities, a 5 x 12 Telecom switchboard, aeronautical, marine and HF bands are available to the control operators. This modern equipment also allows uninterrupted contacts with UHF hand-helds, the Air Wing, Boat Squad and other services that are being coordinated in the area.

**AIR WING**

Another proud possession which is under the control of the Air Wing and is invaluable to search and rescue duties and general law enforcement is the Aero-spatiale DAUPHIN Helicopter, which is powered by two Turbomeca Arriel turbine engines.

The DAUPHIN has seating capacity for 14 persons, including the pilot and a usual crew of two observers/winchemen, who have control of the electrical winch that can be used for various tasks. The winch cable is usable to 90 metres (295 feet). The seating area can be re-arranged to an ambulance configuration if necessary.

This unit has a round the clock standby crew that can have it on its way to an emergency situation in minutes and it is not restricted to daylight operation. Also, it is equipped with essential frequencies and navigational aids and a solid state audio amplifier that drives two 400 watt speakers.

Another feature of the DAUPHIN is its searchlight. This Zenon NITESUN light is rated at 30,000,000 candlepower and has no difficulty in lighting a large playing area such as the Melbourne Cricket Ground.

**WATER POLICE**

An article on the importance of communications and some of the Search and Rescue facilities that are available would be incomplete without mentioning another group of men who are seldom heard of but play an essential role in enforcing law and order on a coastline of 1,100 km and numerous inland lakes and reservoirs, including Lake Eildon, which is the second largest lake in Australia.

Law and order is only a small part of the duties performed by the Water Police. Search and Rescue operations, activities of liaison with volunteer Coastal Patrols (which assist in many rescue operations), the Commonwealth Coastal Surveillance



On patrol with the Kayfa craft.

are equipped with compatible communication equipment that allows access to the D24 Control Centre on VHF. They also have at their disposal, radio equipment with suitable frequencies for liaison with Volunteer Coastal Services, Marine Services and some aircraft.

The flagship of this small but important group is a 17 metre steel hull vessel named the "REGINALD JACKSON", after a former Police Commissioner, and is powered by twin Ford 6 cylinder 150 h.p. diesels. This vessel is self-sufficient in all aspects, including cooking, refrigeration and sleeping facilities for a complement of ten. Radar and Sonar navigational aids are included in the equipment, as is a 5 metre aluminium "runabout" with a 55 h.p. engine.

One recognised advantage in the search and rescue arena is the recent acquisition of two new vessels for use in the Port Phillip Bay and surrounding waters. These nine metre aluminium craft, known as the KAYFA C30 Class, carry all the most commonly used radio and electronic equipment, included in which is a FURUNO RADAR system that has a scanning potential of 48 nautical miles.

These modern vessels are powered by twin Volvo 155 h.p. diesel engines and have a range of 650 nautical miles at a cruising speed of 18 knots. Accommodation allows for the normal crew of two to spend unlimited periods at sea insofar as ordinary operations will allow.

Inspector Ray Applebee, the OIC of the Water Police, is disturbed that volunteer coastal patrol organizations cannot operate efficiently and, in some cases, cannot operate at all, because of the lack of trained personnel, particularly radio operators. In Inspector Applebee's own words, "The population of trained radio amateurs throughout Australia should be able to become involved and participate in assisting the already established Volunteer Coastal groups that patrol our coastline and waterways and cater for some 98,000 registered motor vessels and an estimated thirty to forty thousand miscellaneous other vessels in Victoria alone. Assist in preventing a disaster and maybe saving a LIFE by contacting a Volunteer Group close to you . . . NOW! There are many in need of the expertise developed from your hobby."



The Dauphin in flight.

This graceful and versatile machine, which is often seen around Victoria, has a range of 310 nautical miles, a cruising speed of 125 knots (230 km) per hour and a maximum speed of 170 knots (315 km). It is able to travel from Melbourne to Wagga (NSW) in under the hour if necessary at maximum speed. For the aviation-minded, the fuel capacity is 920 litres of Avtur Jet A1. To the layman this means 202 gallons of aviation kerosene.

Centre (which is situated in Canberra), assisting the RAAF in the training of Orion crews in the dropping of emergency equipment and supplies, education of prospective boat owners, advice to authorities on the proclamation of safety areas are some of the other many and varied duties they perform.

Fully trained marine crews are on standby, being in readiness for any emergency anywhere in the State. All coastal vessels

**THE FUTURE**

Throughout the communications equipment described, ample provision has been made for growth with the communities' needs, extra channels when they are made available, the installation and commissioning of more repeaters, all vehicles to be updated to UHF equipment as finance is available and the further development and installation of Telephone Automatic Repeater Access (TARA). TARA allows access to and from a mobile unit back to an unmanned police station base unit, then by land-line to the nearest continuously manned station, which allows instant communication for assistance or advice as required.

This innovative plan, which is accomplished by coding of the signal from either source, will be invaluable for officers on duty in outlying areas of Victoria, not being in range of a repeater and particularly those who patrol a vast "one man" territory.

Over half a century later, THE LISTENER IN's remarks, "comprises the finest police radio system in the Southern Hemisphere", are endorsed. Congratulations to all engineers, technicians and operators, past and present, on such a fine achievement.

**ACKNOWLEDGEMENTS:**

- Mr. S. I. Miller, MBO, OSTJ, QPM, Chief Commissioner of Police and Staff.
- Chief Inspector A. Campbell, OIC D24.
- Inspector J. E. Knight, OIC Air Wing.
- Inspector R. Applebee, OIC Water Police.
- Technical Officers attached to D24.
- Staff of POLICE LIFE for photographs and assistance.
- Mrs. Anne Pavey, Public Relations Officer, Phillips TMC.
- Peter Dodd VK3CIF, copy of THE LISTENER IN.
- Dave Shaw VK3DHF, for photography and processing.
- Herald Archives.

For the technically oriented reader, a description of the equipment that was first installed is reproduced as described in THE LISTENER IN:

"The set has an input power of 2 kW. Four Marconi valves are employed, two as oscillators and two as rectifiers. ICW is obtained by means of a motor-driven chopper. The transmitter operates from 230 volt single phase current, which is stepped up to 10,000 volts, and rectified before being fed to the oscillator plates. The filament consumption of each valve is ten amperes at 16 volts. The set is inductively coupled and employs a "reversed feedback" circuit. The closed circuit is coupled to the aerial by two coils acting normally in opposition, and the chopper alternately connects and disconnects one of these coils when signalling, thus producing an Interrupted Continuous Wave. The range will cover any place in the Commonwealth, and a secret code will be used so that messages cannot be intercepted by criminals, who may attempt to frustrate the efforts of the police by carrying wireless sets themselves." ■

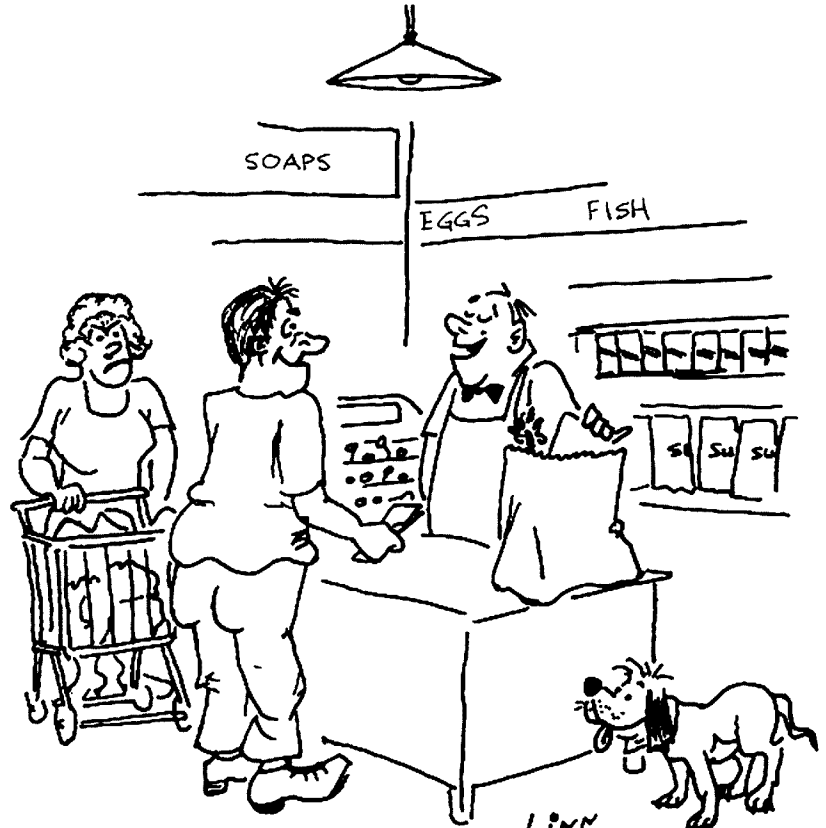
# THE WIRELESS INSTITUTE OF AUSTRALIA

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**WELL . . . I CAN DREAM, CAN'T I?**

by Bandel Linn K4PP



"We recognise your service to the community as an amateur! Therefore, your bill is cut in half!"

From 73, March 1982



# Crackerjack Antenna

Daphne Fenton VK2KDX  
10 22nd Avenue, West Hoxton, NSW 2171

With so many amateurs now operating on 70 cm, it was thought a description of an economical and easy to construct 70 cm antenna might be appreciated. Sid. VK2NQ, an engineer, modified, constructed and tuned up this aerial, and handed it over to Nev. VK2ZBQ for field testing. We often take this aerial operating S/Mobile and Mobile and found it performs very well. Nev. VK2ZBQ named it "The Crackerjack".

This is a 70 cm high gain omnidirectional base/mobile coax colinear antenna designed in response to requests by several 70 cm operators.

The details of this low cost efficient base station aerial are given.

FEED POINT: 50 ohms impedance.

SWR: Between 1.1 and 1.25 from 433.025 MHz to 439.00 MHz.

GAIN: Claimed to be 6 dB.

LENGTH: 8 ft. 8 in.

MATERIAL: Cable type RG-8/U; pawsey stub, 2 x 6 3/8 in. of 3/8 in. OD copper tubing; plug type, PL259; light timber pole.

The aerial was operated at this QTH and portable at Rossmore, Hilltop, Thirlmere, Richmond, and Macquarie Fields, competing

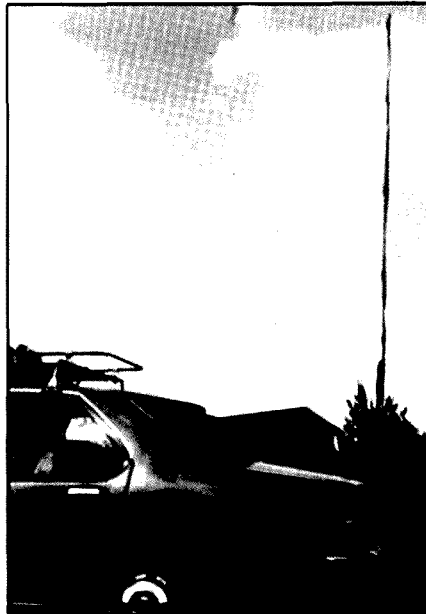
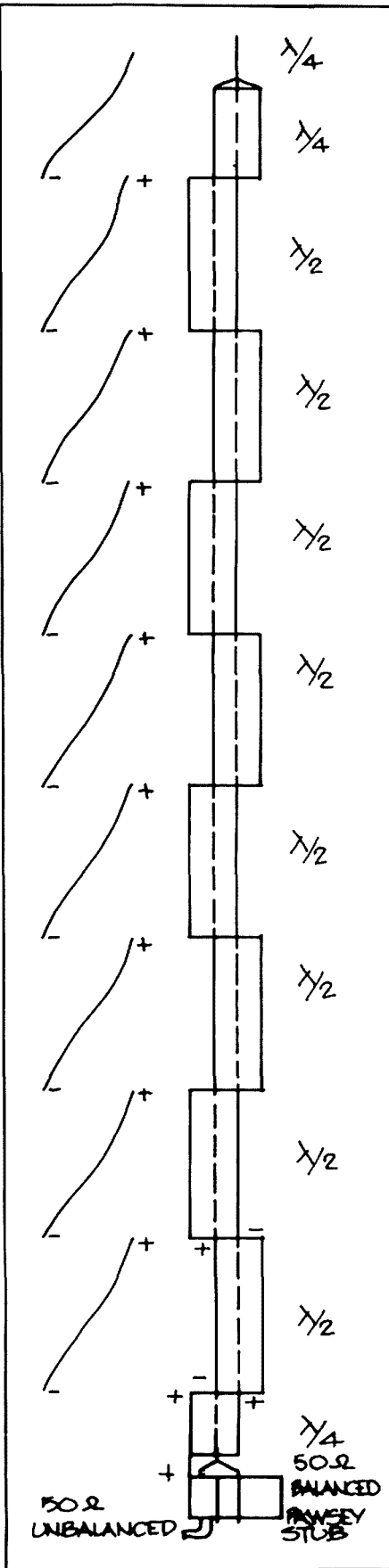
against a commercial mobile array.

The signal was approximately 2S points up on the commercial.

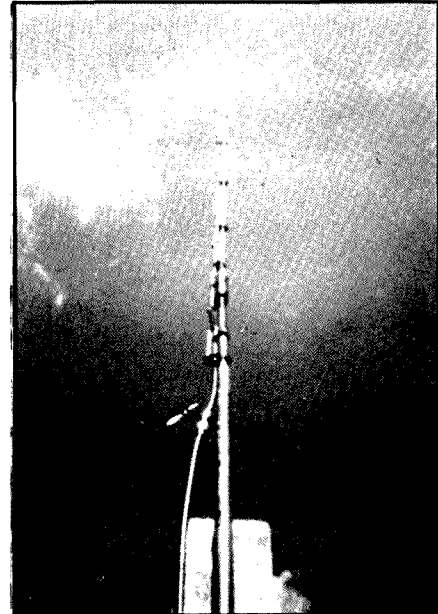
The aerial is a scaled down version of a 2 metre aerial described in the ARRL 1976 Antenna Handbook (13th edition) pages 248 and 249. A modification (several additional half-wave elements) was worked out by Sid VK2NQ, who also did all the construction and tuning-up.

This aerial was partly described in the Liverpool and District ARC Bulletin sheet for March 1981, and also in the January 1982 ALARA Newsletter.

For any further information contact Daphne VK2KDX by arrangement on air or by letter. Demonstrations can be given.



Crackerjack mounted on Car

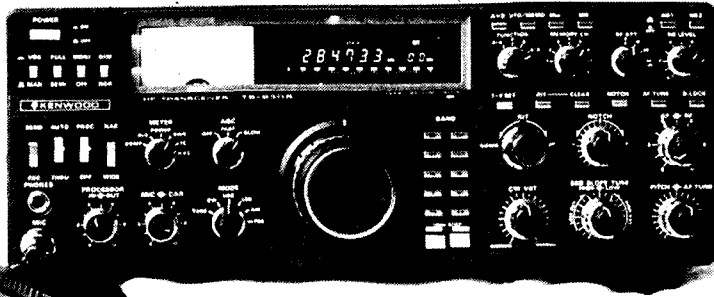


Crackerjack as a Base Station Aerial

# EQUIPMENT REVIEW

## KENWOOD TS 930S TRANSCEIVER

Dave Shaw, VK3DHF,  
9 Milton Street, Heathmont. 3135.



On removing the unit from the well packaged shipping container, one is impressed with the dazzling array of controls and indicators that confront them, but with a top market rig such as this, you would probably feel cheated with anything less. All the features you would expect to find in any modern transceiver are incorporated in this aesthetically designed package although the controls may be labelled differently and it has many further exclusive features to offer.

In line with modern transceivers of this type, the unit is capable of continuous reception from 150 kHz to 30 MHz. The next adjacent MHz section being selected automatically as soon as the dial reaches 0 or 1000 kHz respectively, or the unit may be stepped in 1 MHz segments to reach the required reception frequency with a minimum of fuss.

On transmit, each of the amateur bands, 160 through to 10 metres including the WARC 30, 17 and 12 metre bands is catered for with its own momentarily actuated press selection switch which is located on the right hand sided of the front panel. Only the present amateur bands are enabled, 10 MHz was not available as lockout circuitry was still installed on the test rig.

The operating frequency is now set via the main tuning dial, which is a finely and accurately machined heavy metal casting, that gives a nice feel reminiscent of the tuning on an old valve console radio. Although the main tuning is initially in 10 Hz steps it is no problem to scan from one end of the dial to the other. This is because the main tuning automatically increases its scan rate if a speed of faster than 5 to 6 revolutions per second is used, so with a couple of spins one can easily move from one end of the band to the other. A dial lock facility is also incorporated.

The display is a delight to behold with its bright white numerals which can be dimmed, as with the other red status indicators clearly visible on the fluorescent display. As well as the main digital readout, which indicates to the nearest 100 Hz, there is also a digitized analogue display which indicates the 20 kHz segment being operated. This is done via an extra scale under the main digital readout, the particular 20 kHz segment being indicated by a red fluorescent pointer. This feature functions well with the main tuning as, without it, tuning quickly across the band would not be as easy as the fast changing digits would be extremely difficult to follow.

The display also indicates the RIT operation and offset by a red ON and separate digit indicator. The RIT allows offsets of up to  $\pm 9.99$  kHz. This RIT offset can be cancelled as it, as well as the main tuning, use photo choppers with suitable memories.

Another method of tuning the receiver is by the scan buttons on the microphone. Upon pressing either the UP or DWN button, after a short delay, the transceiver will count in five 100 Hz steps, initially at a slow rate then increasing to approximately 5 kHz per second. This was found to be a dubious advantage for SSB signals as it is not possible, without a certain amount of manual dexterity, to easily tune to a particular frequency, although on the SW broadcast bands with AM reception it was extremely handy. To allow for varying AGO requirements, fast and slow rates may be selected or the AGC may be disabled completely for the reception of very weak signals.

Dual VFOs are incorporated to allow split frequency operation with either VFO available for transmission or reception. The operating

VFO is indicated in red on the main display module. When in the receive mode, the transmit and receive frequencies may be momentarily interchanged and altered if necessary by a front panel push button. Another button sets both VFO's to the same frequency.

There is a total of eight memories available which contain frequency and band information, these being expediently set by the MIN button. Battery backup is provided for retention of the memory contents in the event of mains failure. If the batteries are not installed, memory and VFO frequencies are retained when the transceiver is left connected to the mains.

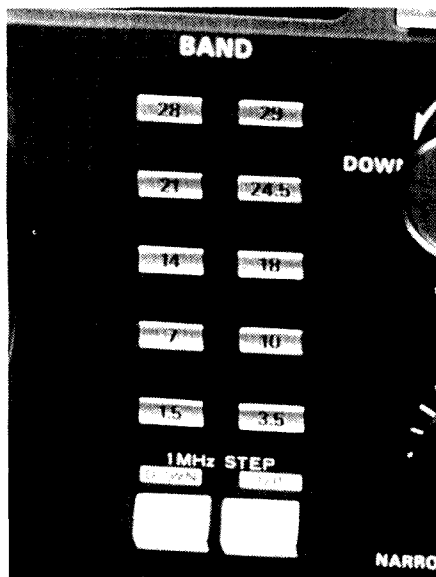
The memories may be recalled by either the VFO/MEM switch, which will put the transceiver onto the selected memory frequency, with the two VFO frequencies being retained, or by the MR push button which will replace the frequency set in the VFO with that from the selected memory. This is handy for net frequencies that Murphy will ensure are at least a couple of kHz away from that which is in memory.

In receive the transceiver has the most comprehensive range of adjacent channel, noise, "Woodpecker" and tone rejection facilities that I have had the pleasure to use.

There are two noise blankers available. One is for pulse type noise with the level of blanking being set to requirements by the front panel control, and it is most effective. As a vertical antenna was used for the tests and the QTH's proximity to a major highway in a Melbourne suburb, plenty of opportunities were available to check this inbuilt feature. The other blanker is especially for the "Woodpecker", unfortunately, during the on air testing, the "Woodpecker" was not to be found, which goes to prove that it can be annoying even when it is not there!!

Another source of interference prevalent on our crowded bands, carriers, are efficiently nulled via the notch filter when activated. Its operation is indicated by a LED located below the readout. The effective range is centred around 1.5 kHz and covers the pass band of the receiver.

With interference from other SSB signals the slope tune controls are used. These allow narrowing or adjusting of the apparent IF bandwidth. Two controls are incorporated, high cut which moves the edge of the response



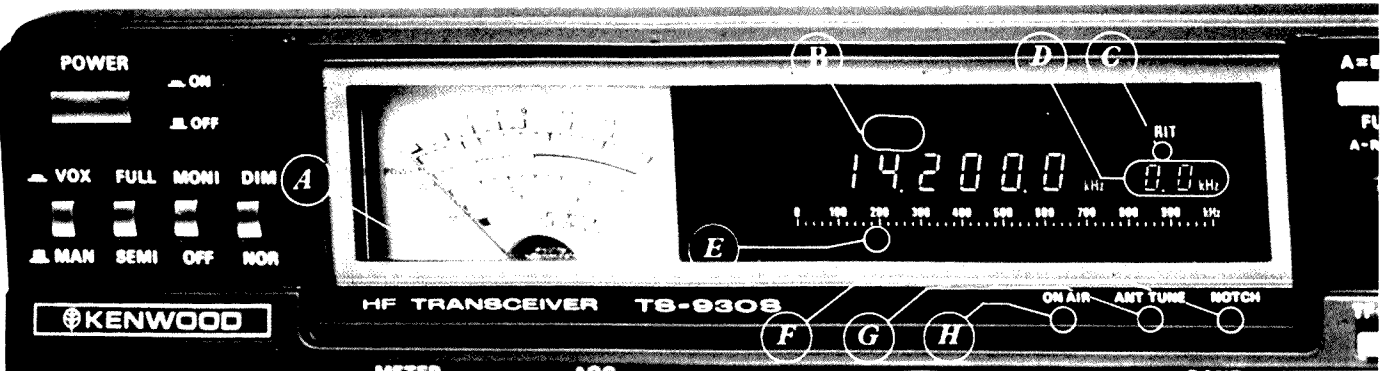


Photo showing (A) 7 function "S" Meter, (B) Enabled VFO, (C) RIT indicator, (D) RIT ± Frequency offset readout, (E) Band area indicator, Indicators — (F) ON AIR, (G) ANT TUNE matching load to finals and (H) NOTCH filter enabled.

on the high frequency side of the passband whilst the low cut operates on the low frequency side.

During CW reception the bandwidth as a whole may be adjusted with the CW Variable Bandwidth Tuning (VBT) control. This control has variable filtering effects dependant upon whether or not the optional filters are installed.

With the standard 2.4 kHz filter the VBT's range is 2.4 kHz to 600 Hz, with the optional YK-88C-1 filter the range is 500 Hz to 150 Hz.

Further selectivity can be achieved by the use of the Wide and Narrow Bandwidth filter selector facility. Additional rejection of signals outside the audio pass band on CW is provided by an audio filter, centred on 800 Hz, adjustable to ± 400 Hz. When engaged, it is then peaked for the desired signal.

The transceiver will operate in SSB, CW, AM and FSK without fuss, however no FM option is available. Reception of any signals

in the various modes was no problem, be it a Shortwave AM station or attempting to read an SSB transmission in the crowded amateur bands, as the slope tuning gives the operator more than a fighting chance.

In transmission no compromises appear to have been made either. The output stage employs two MRF422s in push pull which are operated from a regulated 28 volt supply to limit inter-mod distortion.

Transmission tests received good reports, with the audio being crisp, clear and clean. A monitor facility is available to personally check, with the aid of a pair of head phones, the transmitted audio quality. In this function, a portion of the transmitted signal is fed into the receiver circuitry.

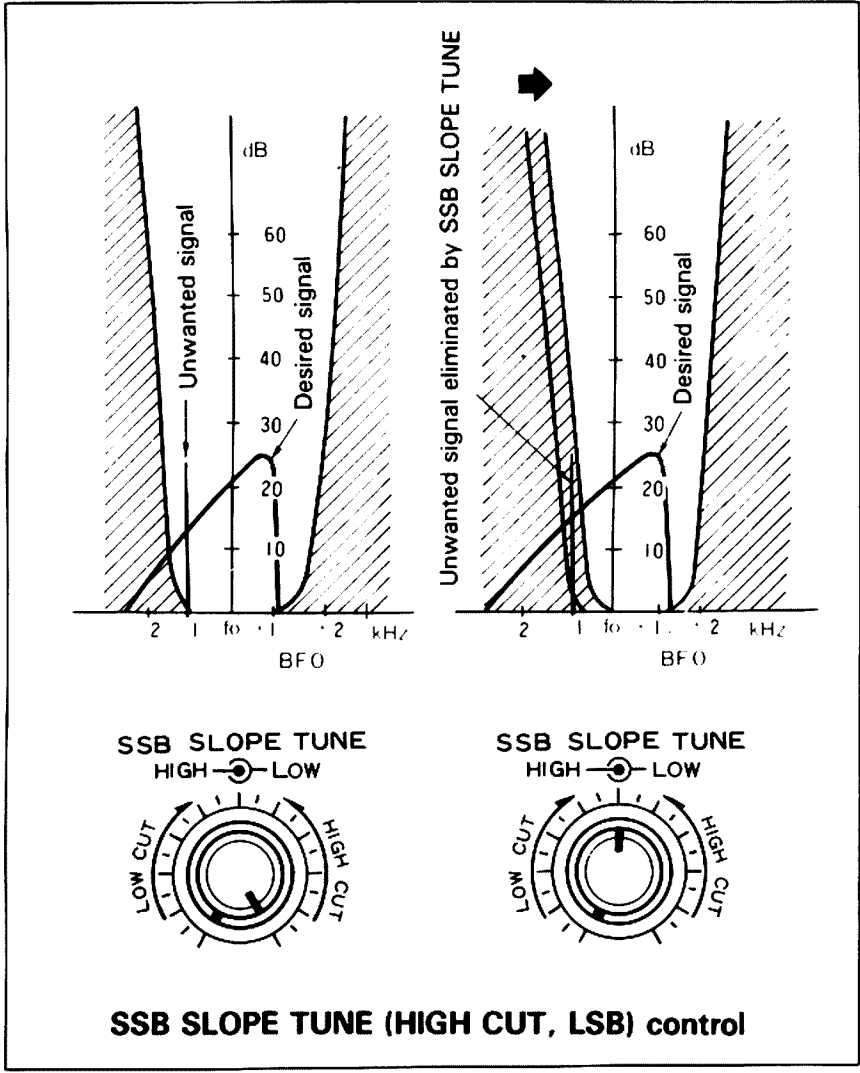
The speech processor, when switched in, has dual controls. Processor IN adjusts the compression level as set with the meter indicating compression or by the monitor facility. Processor OUT, which varies the output level, is set by the meter in the ALC. This control also sets the carrier level in FSK. If the processor is out the microphone level is set with the MIC control.

This processor is almost worth a linear, with it in operation similar reports were received to those given when working DX, not all the stations worked were using a linear, however most were. The compressors effect was noticeable only on its increase in signal readability with little or no perceptible distortion when correctly adjusted.

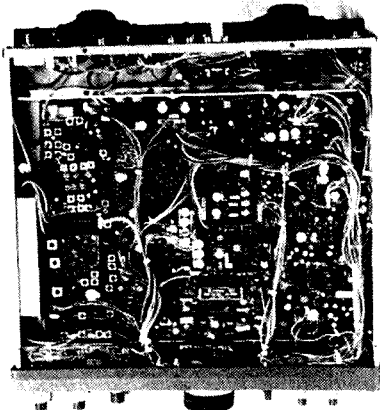
With CW, the carrier level is set by a front panel control and once transmitting, the output can be monitored and its tone set via the pitch control. When in the FSK mode, the only requirement is a keyed input as a frequency shifting oscillator is incorporated.

Full VOX facilities are provided, the controls being accessible under a panel on top of the transceiver, located alongside these are the memory backup batteries and the crystal calibrator. The VOX, with full or semi break facility may be selected from the front panel. The full break in VOX allows the transceiver to switch to receive between keyed characters. Reed relays are used in this circuit to provide smooth and quiet operation.

One of the best features of this new rig is the incorporation of an optional antenna tuning unit (ATU). The operation of this unit is automatic when the transceiver is placed in the TUNE mode and the transmitter is keyed. When switching bands the ATU will adjust itself so that a minimum amount of matching is required. The maximum matching time



required when using a random length of wire was approximately 5 seconds. The ATU, when operating, seeks a point of acceptable SWR and upon nearing this point the tuning decreases in speed, stopping when a SWR of close to 1:1 is reached. When selected, the ATU is capable of handling mismatches of between 20-150 ohms. Outside this range, with the meter in SWR, a point of best match can be obtained by stopping the ATU manually.

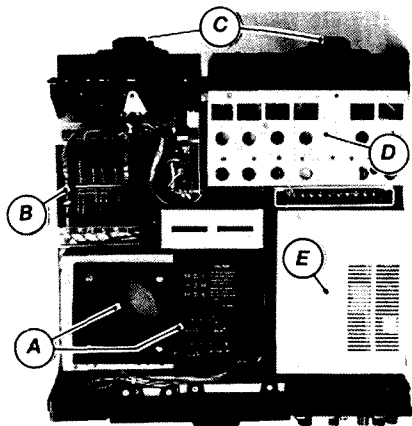


Underneath view of Transceiver.

Using the transceiver on the amateur bands was an enjoyable experience as all the controls are easily accessible, although it took some time to learn the panel layout as there are so many functions incorporated in the set. Fortunately, the ON/OFF switch is a large push button and easy to find.

Monitoring the transceivers operation is facilitated by a large "S" meter which in the transmit mode indicates either compression, ALC, power output, SWR and the output stages collector current and voltage.

The receiver is sensitive with a good immunity to overload, a three step attenuator, 10dB per step, can be switched on if distortion occurs. With the variety of "QRM removers" incorporated, it is doubtful if many other receivers would be able to reproduce as good a signal in adverse conditions.



Cover of transceiver removed showing (A) Speaker and VOX controls, (B) Transformer and Power Supply, (C) Fans, (D) PA and Final Filter, (E) ATU.

On transmit, various protection circuitry is provided for the output transistors. These are for SWR and heat protection. Two fans are included, one for each the regulated supply and output transistors. The transceiver will automatically shut down if the temperature of the output stage exceeds safe limits. It was found that only the power supply fan came on during SSB transmissions after a long QSO. However the output stage fan was induced to operate after a period of FSK operation.

#### BENCH TESTING

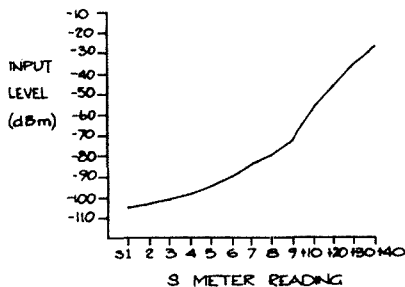
Having test equipment available, bench tests were carried out to determine some of the transceivers more important criteria. Only spot tests were conducted on various bands but these are indicative of the transceivers performance as a whole.

Test equipment at our disposal included a SIGNALOCK 925 RF Signal Generator, Digital Voltmeter, Power Meter and a Cantenna.

The first test conducted was for S+N/N Ratio, this was with a 1  $\mu$ -volt input signal and the receiver off zero beat to obtain a tone output. The receivers output was terminated into a 7.5 ohm load, the results were: 10 Metres-8dB S+N/N, 20 Metres-9dB S+N/N, and 40 Metres-9dB S+N/N.

The noise floor\* of the receiver was claimed to be -140dBm (0.023  $\mu$ V), this was not measurable with the equipment available, which only went to -120dBm (0.225  $\mu$ V). (Figures in the dBm range are related to 0 dBm which is 1 mW or 0.225 volts across 50 ohms).

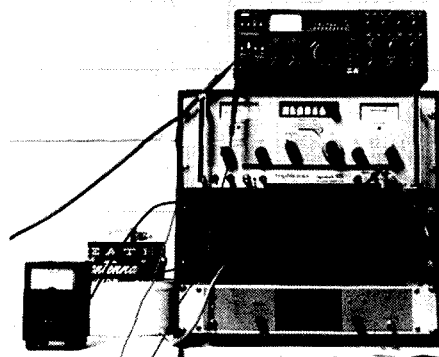
The "S" meter was checked next, full readings were not taken for every band the initial tests being done with a 28MHz input. Spot tests on other bands indicated there was little error between bands. S1 required an input of -105dBm (1.26  $\mu$ V) while S9 was at -73dBm (50 $\mu$ V). A table of the relationships between S points is set out below.



The attenuator was also checked and proved to be accurate in its 10 dB steps. Next the output power was examined, this was only done on CW, there being no two tone test generator available for SSB. The tests were done both with and without the internal ATU and the results compared with the inbuilt meter. SWR indication was less than 1.005 on the internal SWR meter throughout the tests.

| Band | Power with ATU | Without ATU |
|------|----------------|-------------|
| 160  | *              | 120         |
| 80   | 115            | 112.5       |
| 40   | 110            | 115         |
| 20   | 110            | 110         |
| 15   | 90             | 90          |
| 10   | 90             | 90          |

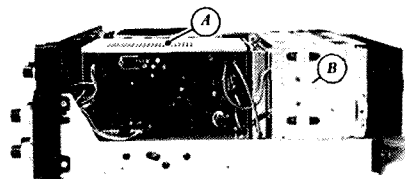
\* ATU not operative on 160 m



Test Setup

The internal power meter was within 10% of these readings for each band.

The increase in noise floor with adjacent signals was next investigated. With an adjacent signal 3 kHz away at -50 dBm the increase was 40 dB while at 5 kHz it was 1 dB. These tests were on the 40 m band on LSB, on USB the 5 kHz figure was 4 dB.



Exposed view of side showing (A) ATU and (B) PA and Final Filter enclosure.

#### SUMMARY

The transceiver as a whole, is large and heavy. Its size is 374 mm x 141 mm x 350 mm and weighs 18.5 kg with ATU fitted. But it was never designed to be mobile. Inside this package you get just about everything you could want. Matching accessories that are available are a linear amplifier, station monitor, a choice of two pairs of headphones, base station microphone, phone patch unit and digital world clock.

Additional facilities that could have been included in the transceiver would have been an FM option and some form of scanning system for the memories.

Accessibility for servicing for all the units as seen from the photographs is quite good, but as with the main board, (Photo 6), you would have to be fairly certain what was wrong before pulling it out to make replacements. The transceiver comes with a twelve months warranty.

The review unit was supplied by the courtesy of Sandy Bruce-Smith, VK2AD, from Trio Kenwood (Australia) Pty Ltd through Eastern Communication Centre, Box Hill South, Victoria.

\* Noise floor: This is the level required to produce a 3dB increase in output from 0 input. It indicates the minimum discernible signal which could be detected by the receiver.

JOIN A NEW MEMBER  
NOW

# EVALUATION AND ON AIR TEST OF THE KENWOOD TS930 S

## QUICK COMPARISON LIST:

KENWOOD TS 930S including Auto Tune facility fitted. Serial No. 2100216

| CATEGORY                         | RATING | COMMENTS                                                                                      |
|----------------------------------|--------|-----------------------------------------------------------------------------------------------|
| <b>APPEARANCE</b>                |        |                                                                                               |
| Packaging                        | ****   | Transceiver plastic covered, held between foam inserts in a double carton.                    |
| Size                             | ***    | Large, as it includes ATU and PS.                                                             |
| Weight                           | **     | Heavy, as above.                                                                              |
| External Finish                  | ****   | Light grey with dark grey facia and white lettering.                                          |
| Construction Quality             | ****   | Strong.                                                                                       |
| <b>FRONT PANEL</b>               |        |                                                                                               |
| Location of Controls             | ****   | All easily accessible.                                                                        |
| Size of knobs                    | ***    | No trouble actuating.                                                                         |
| Labelling                        | ***    | Frequency select controls could have larger numerals. All others very good.                   |
| Meter                            | ****   | Large size, clear with many indications available.                                            |
| VFO Knob action                  | *****  | Large, good spin action.                                                                      |
| Dial readout (Analogue)          | ****   | An advantage over just a digital dial.                                                        |
| Dial readout (Digital)           | ****   | Bright, large and clear.                                                                      |
| <b>REAR PANEL</b>                |        |                                                                                               |
| Sockets etc.                     | **     | All below heatsinks.                                                                          |
| <b>RECEIVER OPERATION</b>        |        |                                                                                               |
| VFO stability                    | ****   | VNG did not vary.                                                                             |
| Digital Dial                     | ****   | Clean and accurate.                                                                           |
| Analogue Dial                    | ****   | Handy feature.                                                                                |
| Memories                         | *****  | Very handy and effective with two recall modes.                                               |
| Sensitivity                      | *****  | See text.                                                                                     |
| RF attenuator                    | ****   | Three calibrated 10 dB steps.                                                                 |
| RF gain                          | ***    | Smooth action.                                                                                |
| Selectivity                      | *****  | With facilities available very good.                                                          |
| SSB Slope tune                   | *****  | Very good feature.                                                                            |
| Notch                            | *****  | Effective.                                                                                    |
| Nar/Wide Control                 | ****   | Good for CW reception.                                                                        |
| Optional filters                 | *****  | Greatly increases CW capability.                                                              |
| Spurious responses               | *****  | None noticed.                                                                                 |
| "S" Meter                        | ****   | See test.                                                                                     |
| AGC performance                  | ****   | Three ranges plus off.                                                                        |
| Signal handling                  | ****   | Large dynamic range plus RF attenuator.                                                       |
| Status Indicators                | *****  | Combination of LED's and red lettering on flourescent display.                                |
| RIT operation                    | *****  | Separate digital off-set indication. Photo chopper control.                                   |
| <b>NOISE BLANKER</b>             |        |                                                                                               |
| Line noise                       | ****   | Effective for domestic noise suppression.                                                     |
| Auto ignition                    | ****   | Effective.                                                                                    |
| "Woodpecker"                     | ***    | Separate blanker function for this "beastie".                                                 |
| Effect on signal                 | ****   | When used with attenuator, no problems.                                                       |
| <b>QUALITY OF RECEIVED AUDIO</b> |        |                                                                                               |
| Internal speaker                 | **     | Mounted on top. An external speaker is a worthwhile investment.                               |
| External speaker                 |        | External speaker offered as an optional extra. Not available for test.                        |
| Headphones                       | *****  | Output level good. Used to monitor O/P.                                                       |
| Cooling fan noise                | ****   | Two fans fitted. Both quiet in operation.                                                     |
| <b>TRANSMIT</b>                  |        |                                                                                               |
| Operation CW output              |        | See text.                                                                                     |
| Operation PEP output             |        | N/A.                                                                                          |
| Audio response                   | ****   | On air reports very good.                                                                     |
| Compressor                       | ****   | Compressor action is infinitely variable so clarity to talk power can be set to requirements. |
| Audio sensitivity                | ***    | Separate for normal or compressor.                                                            |
| ALC action                       | ****   | Always clean.                                                                                 |
| Metering                         | *****  | Power, SWR, Ic, Vc, Comp., ALC, all accurate.                                                 |
| Cooling                          | ****   | See text.                                                                                     |
| Relay noise                      | *****  | Unobtrusive.                                                                                  |
| VOX operation                    | *****  | Controls under top panel. Smooth, set and forget.                                             |

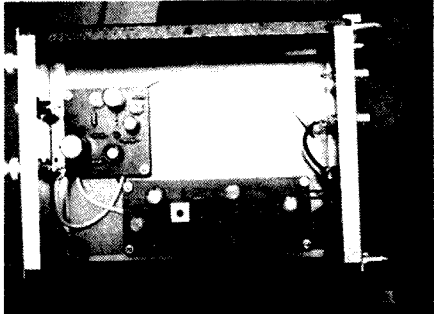
## RATING CODE:

POOR★ SATISFACTORY ★★ GOOD ★★★ VERY GOOD ★★★★ EXCELLENT ★★★★★





and provides a very low output impedance to cater for the capacitive loading of the 6/40 grid circuit. Note the very low values of anode load resistors in the two voltage amp. stages. This gives little gain but a very high F2 point. Note also that both the negative and the positive rails are NOT earthed, and that the 10k 50W pot provides a means of making the output of the modulator either negative (which is required for the 6/40 grid bias), or positive with respect to earth.. Both this modulator and the transistorised one will handle colour OK.



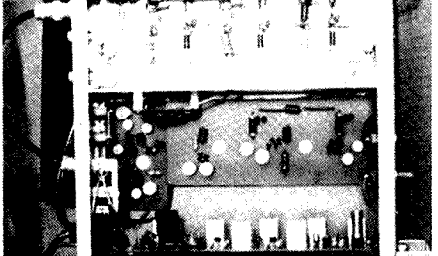
**ALIGNMENT**

I won't go into details of how this should be done, as the constructor should be experienced enough to work that out for himself. I do suggest the use of a wavemeter or analyser in tuning the exciter and tripler up.

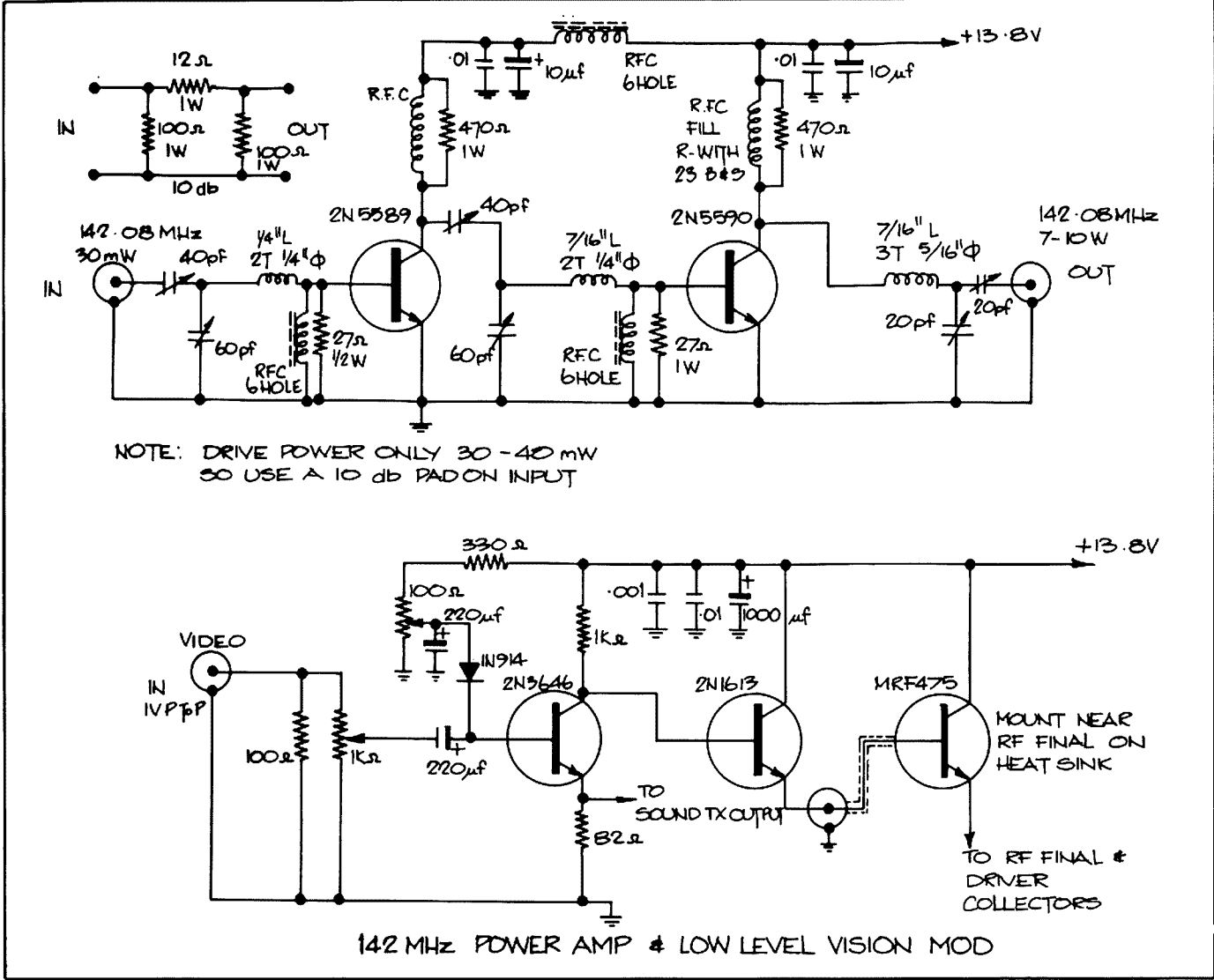
**CONCLUSION**

I owe thanks to Peter VK4ZWP for providing assistance in the design of the exciter and tripler boards. I will provide PCBs only, and for three months ONLY, after this article is published.

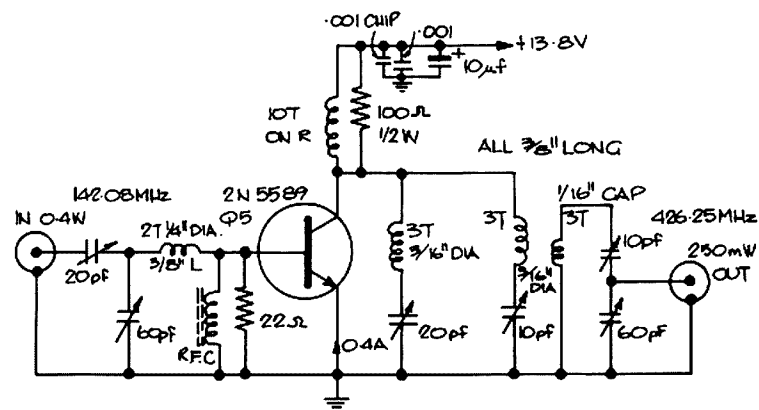
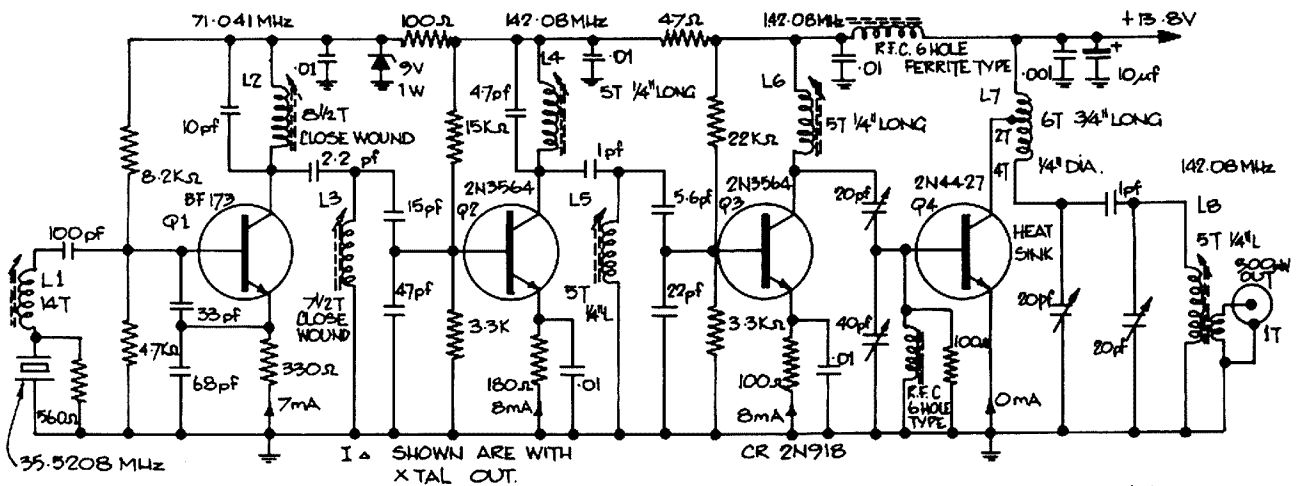
Exciter board, \$8; tripler, \$4; 142 MHz power amp., \$8; sound board, \$8; vision mod. board, \$4.



**EDITOR'S NOTE:** Care should be taken with the power supply in the vision modulator as both the negative and positive voltage rails must be isolated from earth. A design is not included so normal designs (with negative tied to earth) could not be used without modification.







ALL COILS EXCEPT L7 ARE WOUND ON 5mm NEOSID'S

ATV. EXCITER AND TRIPLER

# Ten Commandments of Electronic Safety

# Famous Amateur — Now Inactive

Bill Martin VK2EBM

An oldie from about 1985

1. Beware of the lightning that lurks in an undischarged capacitor lest it cause thee to be bounded upon thy backside in a most ungentlemanly manner.
2. Cause thou the switch that supplies large quantities of juice to be open and tagged, so that thy days may be long on earth.
3. Prove to thyself that all circuits that radiate and upon which thou workest are grounded, lest they lift thee into a high frequency potential and causeth thee to radiate also.
4. Take care that thou usest the proper method when thou takest the measure of high voltage, that it not incinerate both thee and the meter for verity, though thou hast no account number and can't easily be replaced, the meter doth have such and shall bring great woe upon the supply department.
5. Tarry amongst those who engage in international shocks, for they are surely non-believers and not long for this world.

6. Take care thou tamper not with interlocks and safety devices, for this shall incur the wrath of thy seniors, and unleash the fury of the safety officer down upon thy head and shoulders.
7. Work not with energised equipment for if thou doest thy buddies will surely be buying beers without thee, and thy space at the bar will be filled by another.
8. Verily, verily, I say unto thee: never service high voltage equipment alone; for electric shocking is a slothful process, and thou mightest sizzle in thine own fat for hours before thy Maker seeth fit to end thy misery, and draw thee unto His fold.
9. Trifle not with radioactive tubes and substances, lest thou commence to glow in the darkness like a lightning bug.
10. Commit thou to memory the work of the prophets, which are writing the Instruction Books; they give thee straight dope and steer thee away from error.

from "ARNS Bulletin", Sept. '81

33 Somerville Road, Hornsby Heights, NSW 2077  
 With great regret we announce the inactivity of one of amateur radio's most valuable amateurs.

Mr. Someone Else has closed down. The vacancy he has left will be hard to fill. Mr. Else has been an active amateur for many years. He did more than his fair share of work insofar as the hobby was concerned. Whenever there was a WICEN job to do, an Intruder to report, a working bee, or a Club activity, his name was on everyone's list.

"LET SOMEONE ELSE DO IT."

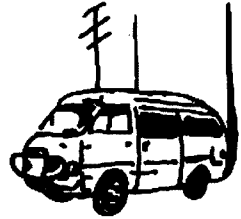
Whenever a Club or Divisional project was mentioned, this man was looked to for inspiration, as well as results.

Mr. Someone Else was a wonderful man, but he was only human.

He could spread himself only so far. He did the best he could, but people expected too much from him.

Mr. Someone Else has gone; he left a good example, but who will follow it? Who is going to do the things that Mr. Someone Else did?

# WICEN NEWS



## WICEN Use of Amateur Frequencies

R. G. Henderson VK1RH  
171 Kingsford Smith Drive, Melba, ACT 2615

I recently heard of some on-air unpleasantness arising from a lack of understanding of the use of amateur frequencies by WICEN operators, coupled with a less than courteous explanation.

Unlike some nations, the Australian amateur supports self regulation; as a consequence the regulatory authority, the Department of Communications, has not been requested to specify fixed frequency allocations, rather the amateurs themselves have democratically prepared and agreed band plans. One part of this is the oft heard (but not always respected) gentleman's agreement.

A consequence of the above is there are no dedicated WICEN frequencies, not any need seen for any except in emergency or disaster operations. And in these circumstances the authorised emergency network operations are accorded a clear frequency by regulation (see Amateur Operators' Handbook, paragraph 6.32).

There are dedicated emergency communications frequencies both internationally and Australia-wide. The coastal radio shipping stations, aeronautical mobile service and SES frequencies spring to mind as examples. Remember too, ITU Resolution 640 "Relating to the international use of radio communications, in the event of natural disasters, in frequency bands allocated to the amateur service".

**HF**  
WICEN has, through the WIA policy generating process, nominated specific calling frequencies in the HF bands. These are:—

3.600, 7.050, 14.100, 21.190, 28.450 MHz.  
Secondary frequencies are +25 kHz for SSB, -25 kHz for CW.

Having established communications, nets may QSY to a clear frequency, and because of long standing interference (often from intruders) some Divisional networks may operate on slightly different frequencies from the above on a routine basis. Nevertheless the calling frequency is a starting point to listen for or on which to initiate an emergency call.

A bad practice, which has been observed from time to time, is for a well meaning but misguided operator to camp on the calling frequency and adopt a policeman-like attitude to keep it clear despite the fact that WICEN has not been activated and no traffic is being passed.

### VHF

The frequency situation differs a little on VHF; there are nominated WICEN channels but not all crystal locked equipment is set up for them so by default the common user channels are often employed. Some Divisions also have WICEN repeaters but it is not uncommon for the local repeater to be employed. In an activation situation this is no problem, remember Regulation 6.32, but for training exercises it calls for tolerance and mutual acceptance by WICEN and local operator alike. Few exercises are so busy as to demand the exclusive use of a repeater for very long periods. Remember that good repeater operating procedure directs that you leave a break to allow stations with urgent messages to break into the network. Also simplex operation is preferable where possible.

### BAND SHARING

In "training exercise situations" frequency sharing may be necessary, particularly on VHF, with WICEN messages interleaved with other routine amateur communications. The key to good operating is courtesy, tolerance and consideration on both sides. A short identified request along the lines of, "Gulargambone WICEN is conducting a training exercise in support of the local SES, a clear channel would be appreciated, this is VK—", should be adequate to inform amateurs on the air of the activity. Spot frequency policemen are NOT wanted, but on the other side a responsible adult response is expected.

Should you be offended on-air by a WICEN exercise activity don't bottle it up, or become an alligator (all mouth and no ears) and whinge on-air to all about it; take it up with the Divisional WICEN co-ordinator or Divisional Council, but make your complaint in a factual manner to facilitate investigations.

Remember that there are many facets to the hobby of amateur radio, WICEN is but one of them. Keep it a happy sport. ■

## A Communications Package — Orange Style

The long weekend in June 1982 saw the Orange Amateur Radio Club supply a communications package (safety and scoring) for the Orange Sports Motorcycle Club. This was the fifth year that the Club had provided communications for the annual two-day motorcycle trial, an event of national significance. This trial is one that is used to determine which riders will represent Australia at overseas meetings.

Personnel came from the amateur ranks as well as from the Mitchell Division of the State Emergency Services. The task was to man each checkpoint (14) and the special tests (3) on each of two days and radio back the rider's number and time to a safety computer at communications headquarters. The scoring information was then to be sent to race headquarters for entry into the scoring computer.

Provision had been made for 256 riders in the safety computer system, so the 170 riders that took part were well within the system capacity. As well, the two clerks of the course required constant mobile communications back to both headquarters.

### WICEN COMMUNICATIONS

| CHECKPOINT NUMBER | MESSAGE NUMBER |
|-------------------|----------------|
|                   |                |
|                   |                |
|                   |                |
|                   |                |
|                   |                |
|                   |                |
|                   |                |
|                   |                |
|                   |                |
|                   |                |
|                   |                |

SENT TO \_\_\_\_\_ TIME \_\_\_\_\_

SENT BY \_\_\_\_\_ FREQ/MODE \_\_\_\_\_

LOCATION \_\_\_\_\_

FIG. 1: Special message form

A special message form was printed (Fig. 1). This was filled in by the checkpoint captain and handed to the radio operator for transmission. A maximum of ten riders can be shown on each form and it is considered, from past experience, to be a reasonable length of message. Each year 3,000 forms are used. This year a different course was used each day, which involved much rapid movement of equipment on the Saturday night.

For the Saturday a field headquarters was set up on Mt. Towac, which is near Mt. Canobolas, but far enough away not to interfere with the repeater and other commercial users.

Two VHF frequencies were used, one amateur and the other SES, one HF (SES) and a UHF link for use back to race headquarters. Two caravans were used, one for



The de-briefing

radio operators and the other for the safety and communications computer. Power was obtained from an SES 3.7 kW trailer/generator. On the Sunday the same frequencies were used but operations were from the SES headquarters with the UHF data link to race headquarters.



At Orange SES Headquarters — Robyn (SES), Jan (Orange RC) and Peter VK2TK

Race headquarters is unsuitable for a communications headquarters due to ignition interference from the motorcycles, particularly during the start and finish. With bikes starting at the rate of four per minute interference can be expected over a long period. On both days the clerks of the course used "Fred", the Orange repeater, for linking back to both headquarters.



Kim VK2ASY and Ian VK2NYU operating the VDUs

This year the information was fed into the safety computer (2 x 2650) through two memory mapped VDUs (2650s). The VDUs had a replica of the message form on the screen and the operators filled in the information as received and used full edit facilities for correcting any errors. The next 2650 maintained and updated a file on each rider so that the rider's location and time of entry into a section could be recalled immediately. Also the total number

of riders in any section could be found. These items were necessary for the smooth running of the event as well as keeping track of stragglers. The "raw" information (checkpoint, rider and time) was then passed to the fourth 2650 as a storage buffer before being sent as RTTY on the UHF link. This data was hard copied at race headquarters. Any requests for rider information such as location, etc., was sent automatically, in turn, to race headquarters over the same system.

The organisation was again this year carried out by Kim Stevens VK2ASY and Wally Watkins VK2DEW. Kim was responsible for the software and hardware of the computer system, while Wally looked after the logistics of liaison, personnel, equipment and the thousand and one other necessary matters.

As is the case, usually due to inclement weather, the course was not finalised until three hours before the starting time, so a very flexible approach was maintained. The usual teething troubles surfaced, but very soon traffic was flowing in the usual efficient manner.

Amateurs are normally used at the field stations and SES personnel operate at headquarters. This year, as there were plenty of people available, some checkpoints had two operators (amateur and SES), which made things easier, especially when the checkpoint was being used more than once.



Kim VK2ASY checking data output

The "software" for the input VDUs was considered to be foolproof! During the weekend it was put to the ultimate test, as some of the keyboard operators were inexperienced. After only five minutes tuition they were able to handle the data entry and edit facilities with ease.

In all, an average of 28 people were used each day for the communications package which, in itself, is one of the main events of the year for amateurs around the Orange area. Planning is already under way for next year. Direct linking with the scoring computer (Apple) is contemplated in order to save double entry.

Wally Watkins VK2DEW. ■

# Spare a Thought

from "Propagator", March '82

I have held an Amateur Licence now for approximately four years and have been a member of the Committee of the Illawarra Amateur Radio Society for 3 of those 4 years. On a number of occasions I have taken to an internal discourse about what the functions of a radio society or Club is or should be. For the record I have set out below my own thoughts on this. The reasons for doing this are manifold, but I guess the main reasons are:—

- a) Maybe you have never even asked yourself why you joined a radio club. (It's a question worth asking.)
- b) Maybe you could get more out of your membership.
- c) Maybe the club could gain something in this process.
- d) Maybe my own analysis could be wrong (if you don't agree—let the Editor know—in a letter, not by a brick through his front window).

1. A Radio Club or Society should be a source of both fellowship and a means of encouraging growth (both to individual amateur and to the fraternity of amateurs. Those aims should include:
2. Effective leadership which should include all sections of the society membership.
3. Participation by as many members as possible in the Society's activities.
4. Good Public Relations both in terms of positive action to promote Amateur Radio and in countering poor reporting when it appears in the local press.
5. An on-going programme of training of members by means of Nets, technical discussions and guest lecturers at Society meetings.
6. An on-going programme of recruitment of new amateurs and of sponsoring training/education programmes and licensing classes.
7. Close co-operation with emergency communications organisations, e.g., WICEN, SES, Volunteer Coast Guard, etc.
8. Sponsorship of Technical and Working Groups in technical activities.
9. Training in self-regulation of the service, e.g., fox hunts, direction finding groups.

In summary, this is your radio club. Are you getting what you thought you would get? What did you expect? What can the Club do to meet your expectations? What can you do to help?

— Denis VK2DMR

**BUYING OR SELLING —  
CHECK HAMADS FIRST!**

# St. Paul Island DX-pedition

Jack Williams VK3LG

3 St. Johns Wood Road, Mount Waverley 3149

A DXpedition to St. Paul Island was mounted from 8th July to 13th July, 1981. The party consisted of Pete Anderson VE1BL and Jim Dean VE3IQ/1 and operations took place on all bands using Pete's call VE1BL/1.



Jim VE3IQ/1

Fifteen and 20 metres were very good, but only one opening of the 10 metre band occurred during the four days of operation.

The 160, 80 and 40 metre bands were generally noisy and not up to expectations, although 40 metres did improve at times.

## MORALE BOOSTER

Jim tells a tale of Pete keeping up his morale by constantly drinking a mixture of a half cup of tea, quarter cup of Rum, one teaspoonful of honey and one teaspoonful of sugar. Never heard of that one before, but it could be good.

The party returned to Halifax during the morning of 13th July.

All participants of the Caribbean net thank Pete and Jim for mounting the DXpedition and especially for coming up on the net each day of their stay. St. Paul Island was a new contact for most.

All those who required confirmation should have this by now, with special thanks to QSL Manager Joe Arcure W3HNK for his promptness and efficiency in managing the QSL situation. ■



The shack and beam (Note: the rocky terrain)

## FIRST QSOs

The following morning the first contacts of the DXpedition were made with VK3LG and VK3DFD at 0926Z on 9th July, and this was followed by a total of 3,700 contacts on all bands.

The team operated for approximately 22 hours each day using two rigs with the station coming up on the Caribbean net and Round Table each day.

## CONDITIONS

Weather during the period was cold, windy and generally unpleasant, and band conditions left something to be desired.



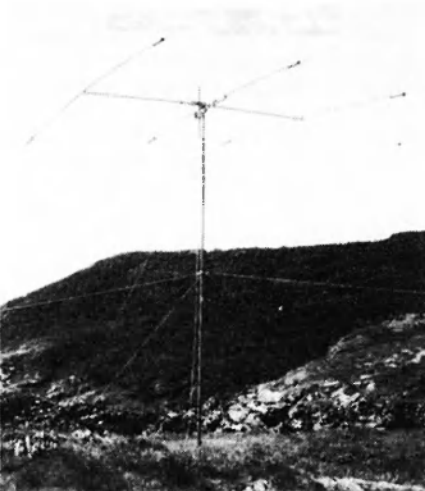
Pete VE1BL/1

St. Paul Island is situated off the east coast of Canada at 47° 13 mins. 35 seconds north and 60° 08 mins. 26 seconds west and approximately 1½ hours flying time by helicopter from Sydney in Nova Scotia. Sydney is a further two hours from Halifax.

## TRANSPORTATION

Two flights from the mainland were necessary to move the equipment and provisions required for the five days planned operation.

Pete and Jim, together with most of the equipment, arrived on the first flight at 1100 hours local time. The helicopter returned to the mainland for the remainder of the provisions, including fuel for the generators and drinking water, then returned to the island at 1700 hours, after having been delayed for several hours by gale force winds and fog.



Tri-Band Beam

## INSTALLATION

Work proceeded during the remainder of the first day to establish the base in a disused house, and install antennas and equipment.

The antennas consisted of a triband beam for 10, 16 and 20 metres and dipoles for 40, 80 and 160 metres. The 40 and 80 metre dipoles were not very high and were attached to a disused workshop whilst the 160 metre antenna was attached to and near the top of the lighthouse.



St. Paul Island as seen from the air. The shack building is on the right.

# COMPETITION No 3

## Answer this Problem to win a Fluke 8022B Digital Multimeter

It is appropriate to consider a practical problem related to electrical measurement. Fig. 1 shows a single stage class A transistor amplifier. The transistor T has a  $V_{be}$  of 0.600V and the base current  $I_b$  is 1/100 of the emitter current  $I_e$ .

We want to measure the voltage between the base of T and ground by connecting a voltmeter across R2. As the resistance values are given we can calculate the anticipated voltmeter reading of the voltmeter characteristics are known.

Q.1: If the voltmeter has a 20k ohm per

volt sensitivity and is used on the 10 volt range, what will the voltmeter read?

Q.2: If a Digital Multimeter with a 10M ohm input resistance is used instead what would the meter read?

Assume both meters to be without calibration error and round your calculated answer to the nearest three decimal places.

The problem, which is one of calculating voltmeter loading, has one complication. But then it is a magnificent prize worth a little effort. ■

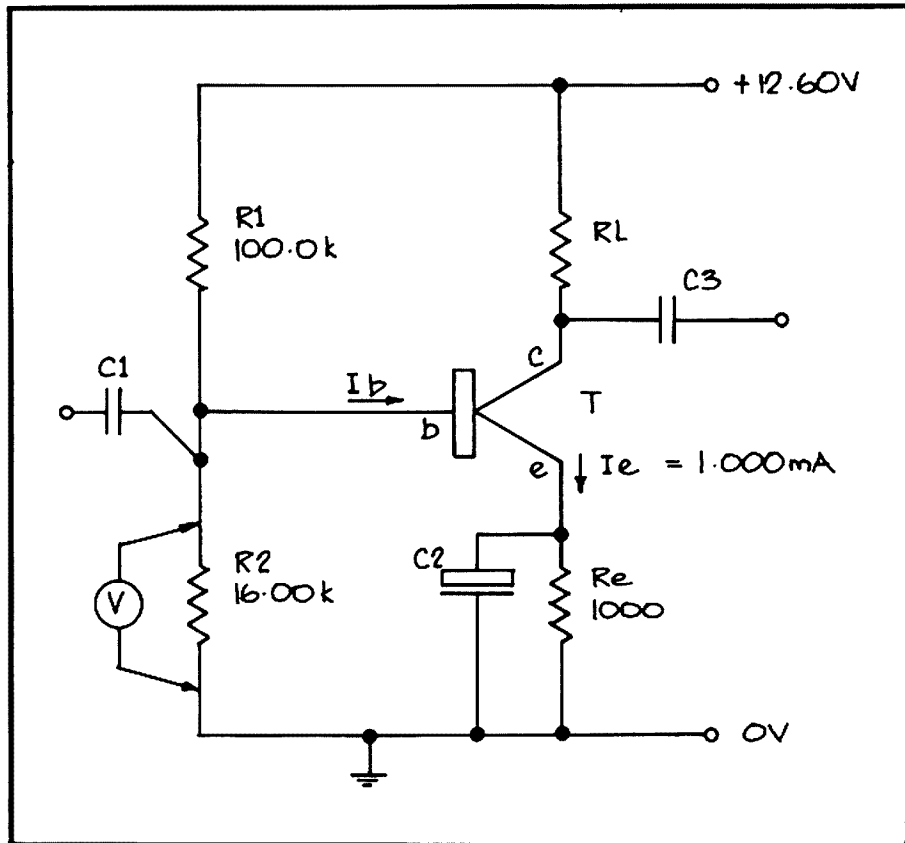


FIG. 1: Circuit of a simple amplifier  
 $V_{be} = 0.600V$   
 $I_b = I_e/100$



Due to the overwhelming response to the previous competitions, the Publications Committee, with the assistance of Elmeasco Instruments Pty. Ltd., have decided to conduct another competition.

The magnificent prize for this competition is a FLUKE 8022B Digital Multimeter, which would be an adjunct to any experimenter's test equipment. This Digital Multimeter retails at \$190.35, including sales tax, and it has been kindly donated by the Australian Distributors of FLUKE products, Elmeasco Instruments Pty. Ltd.

This instrument has been reviewed by Ron VK3AFW, Technical Editor of AR, and to read of the rigorous tests that the test unit has been subjected to and the reviewer's comments turn to page 26 of this issue.

### RULES

The contest is open to all financial members of the WIA with the exception of all people and their immediate families associated with the production of Amateur Radio and employees of Elmeasco Instruments Pty. Ltd. ONE entry per member (all multiple entries will be disqualified prior to drawing), each entry to be handwritten on the back of a standard Australia Post small envelope.

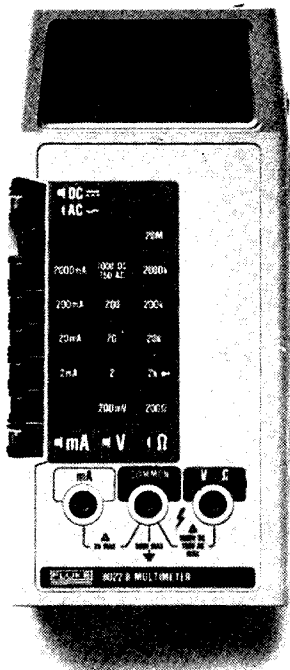
Entries must be received no later than the last mail, 1st October, 1982, and the winning entry will be the first entry with the correct answer drawn by the Victorian Manager of Elmeasco Instruments Pty. Ltd., Maurice Johnson VK3ADJ, on the 4th October.

The Editor's decision will be final and no correspondence will be entered into regarding the competition. The winner and the correct answer will be published in November AR.

All entries to: AR Competition No. 3, Box 150, Toorak, Victoria 3142. On the back of the envelope your name, address, call sign and the answer to the problem.

Only entries in the above format will be accepted. All others will be disqualified.

# TEST REVIEW EQUIPMENT



## The Fluke 8022 B Digital Multimeter

By Ron Cook VK3AFW  
Technical Editor

Why review a digital multimeter? The most common test instrument in any radio enthusiast's "shack" is a multimeter! Traditionally a moving coil instrument with a sensitivity of 20,000 ohms per volt has been sought preferably with the capability to measure DC and AC volts, DC current and resistance. Digital instruments are now well within the reach of the hobbyist so it is reasonable to look at an example made by the world's largest manufacturer of digital multimeters. The John Fluke Manufacturing Company, founded of course by John Fluke, produce an extensive range of digital readout test equipment. Their hand-held 8020 series of digital multimeters (DMMs) is so popular that there are (at last count) 25 other companies producing imitations. Obviously Fluke have something going for them.

### APPEARANCE

The 8022B is built into a tough plastic case that fits neatly into the hand. The 3½ digit display is clear and large enough to be read right across the room. (Try that with a conventional analogue meter.) The functions are selected by two push button switches, six other buttons give range selection.

On the back are four non-skid rubber feet and a tilt bail with locking detent. Change-over between volts/ohms and mA is effected by placing the "hot" lead in the appropriate socket.

The display is tilted and is easily read when the meter is lying flat, although the display is readable over a wide range of viewing angles the slight tilt ensures a crisp readout.

Overall the appearance is that of a modern attractive and functional DMM.

### SPECIFICATION

The 8022B is the most inexpensive of the 8020 range and consequently has a lesser performance than the top-of-the-range 8024B. Nevertheless the specification is better than claimed by most of the imitations. Part of the specification is reproduced here.

### PRINCIPLES OF OPERATION

All the parameters measured are analogue so the heart of the instrument is the analogue-to-digital (A/D) converter. The well established dual-slope integration technique is used. In brief, the voltage to be measured charges a capacitor via a resistor for a fixed period of time. Then a reference voltage of opposite polarity is applied to discharge the capacitor to zero. If the discharge time is equal to the charging time then the unknown voltage is equal to the internal reference. A greater time represents a greater voltage, and so on.

In this instrument the timing is derived from a quartz crystal oscillator to ensure accuracy. The actual operation is more complex than outlined of course. For example, in each measurement cycle there is an automatic zeroing phase to overcome any offset drift in the A/D.

Voltage range change is accomplished by changing taps on a precise resistive divider of 10 M ohms resistance. For current measurement the voltage across a small value resistor is measured.

In the ohms mode the instrument compares the volt drop across an internal resistor with that of the unknown. That is, a two wire technique is used, so for low resistances the connecting lead resistance must be allowed for. Three ranges (2k, 200k and 20 M ohms) have a high enough voltage to turn on a silicon junction. The other 3 ranges (200, 20k, 2000k ohm) have a voltage too low to turn on a silicon junction. This allows diodes and transistors to be tested and resistances in parallel with diodes to be measured all by selecting the appropriate range.

AC operation is achieved by converting AC voltages to DC by means of a precision rectifier in which an operational amplifier is used with diodes to provide the equivalent

### 8022B SPECIFICATIONS

The following specifications assume a 2-year calibration cycle and an operating temperature of 18°C to 28°C (64°F to 82°F) at a relative humidity up to 90%, unless otherwise noted.

**FUNCTIONS** ..... DC Volts, AC Volts, DC Current, Resistance

#### DC VOLTS

| Range    | Resolution | Accuracy for 2 Years          |
|----------|------------|-------------------------------|
| ± 200 mV | 100 µV     | ± (.25% of reading + 1 digit) |
| ± 2V     | 1 mV       |                               |
| ± 20V    | 10 mV      |                               |
| ± 200V   | 100 mV     |                               |
| ± 1000V  | 1V         |                               |

**Overvoltage Protection** ..... 1000V DC or peak AC on all ranges

**Input Impedance** ..... 10 MΩ, all ranges

**Normal Mode Rejection**

**Ratio** ..... > 60 dB at 50 Hz and 60 Hz

**Common Mode Rejection**

**Ratio (1kΩ unbalance)** ..... > 100 dB at DC, 50 Hz and 60 Hz

## AC VOLTS

| Range  | Resolution  | Accuracy — 45 Hz to 450 Hz       |
|--------|-------------|----------------------------------|
| 200 mV | 100 $\mu$ V |                                  |
| 2V     | 1 mV        |                                  |
| 20V    | 10 mV       | $\pm$ (1% of reading + 3 digits) |
| 200V   | 0.1V        |                                  |
| 750V   | 1V          |                                  |

|                                                                                   |                                                                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Overload Protection</b> .....                                                  | 750V rms or 1000V peak continuous, except 200 mV AC ranges (15 seconds maximum above 300V rms AC) |
| <b>Common Mode Noise Rejection Ratio (1 k<math>\Omega</math> unbalance)</b> ..... | >60 dB at 50 Hz and 60 Hz                                                                         |
| <b>Volt-Hz Product</b> .....                                                      | 10 <sup>7</sup> max. (200V @ 50 kHz)                                                              |
| <b>Input Impedance</b> .....                                                      | 10 M $\Omega$ in parallel with < 100 pF                                                           |

## DC CURRENT

| Range   | Resolution  | Accuracy for 2 Years              | Burden Voltage |
|---------|-------------|-----------------------------------|----------------|
| 2 mA    | 1 $\mu$ A   |                                   | 0.25V rms      |
| 20 mA   | 10 $\mu$ A  | $\pm$ (.75% of reading + 1 digit) | max.           |
| 200 mA  | 100 $\mu$ A |                                   |                |
| 2000 mA | 1 mA        |                                   | 0.9V rms max.  |

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| <b>Overload Protection</b> ..... | 2A/250V fuse, in series with a 3A/600V fuse |
|----------------------------------|---------------------------------------------|

## RESISTANCE

| Range           | Resolution    | Accuracy for 2 Years               | Full-Scale Voltage | Maximum Test Current |
|-----------------|---------------|------------------------------------|--------------------|----------------------|
| 200 $\Omega$    | 0.1 $\Omega$  | $\pm$ (0.3% of reading + 3 digits) | < 0.25V            | .35 mA               |
| 2 k $\Omega$    | 1 $\Omega$    |                                    | > 1.0V             | 1.1 mA               |
| 20 k $\Omega$   | 10 $\Omega$   | $\pm$ (0.2% of reading + 1 digit)  | < 0.25V            | 13 $\mu$ A           |
| 200 k $\Omega$  | 100 $\Omega$  |                                    | > 0.7V             | 13 $\mu$ A           |
| 2000 k $\Omega$ | 1 k $\Omega$  | $\pm$ (2% of reading + 1 digit)    | < 0.25V            | 0.13 $\mu$ A         |
| 20 M $\Omega$   | 10 k $\Omega$ |                                    | > 0.7V             | 0.13 $\mu$ A         |

## 8022B SPECIFICATIONS (cont.)

|                                   |                                                                                                                                                                                                                                                               |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Overload Protection</b> .....  | 500V DC/AC rms on all ranges. 15 seconds max. above 300 volts.                                                                                                                                                                                                |
| <b>Open Circuit Voltage</b> ..... | Less than 1.5V on all ranges except 2 k $\Omega$ range is less than 3.5V.                                                                                                                                                                                     |
| <b>Diode Test</b> .....           | 2 k $\Omega$ , 200 k $\Omega$ , and 20 M $\Omega$ ranges supply enough voltage to turn on junctions allowing a "Diode Test". 200 $\Omega$ , 20 k $\Omega$ , and 2000 k $\Omega$ ranges can make in-circuit measurements without turning on silicon junctions. |

## AC CURRENT

| Range   | Resolution  | Accuracy for 2 Years<br>45 Hz to 450 Hz | Burden Voltage |
|---------|-------------|-----------------------------------------|----------------|
| 2 mA    | 1 $\mu$ A   | $\pm$ 3% of reading + 3 digits          | 0.25V rms      |
| 20 mA   | 10 $\mu$ A  |                                         | max.           |
| 200 mA  | 100 $\mu$ A | $\pm$ 2% of reading + 2 digits          | 0.9V rms       |
| 2000 mA | 1 mA        |                                         | max.           |

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| <b>Overload Protection</b> ..... | 2A/250V fuse, in series with a 3A/600V fuse. |
|----------------------------------|----------------------------------------------|

## ENVIRONMENTAL

|                                      |                                                                                                                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Temperature</b> .....             | 0 $^{\circ}$ C to 50 $^{\circ}$ C (32 $^{\circ}$ F to 122 $^{\circ}$ F) operating. —35 $^{\circ}$ C to +60 $^{\circ}$ C (—31 $^{\circ}$ F to 140 $^{\circ}$ F) storage.                                                           |
| <b>Relative Humidity</b> .....       | 0 to 80%, 0 $^{\circ}$ C to 35 $^{\circ}$ C (32-95 $^{\circ}$ F) on 2 M $\Omega$ and 20 M $\Omega$ ranges. 0-90%, 0-35 $^{\circ}$ C (32-95 $^{\circ}$ F) on all other ranges. 0 to 70%, 35-50 $^{\circ}$ C (95-122 $^{\circ}$ F). |
| <b>Temperature Coefficient</b> ..... | <0.1 times the applicable accuracy specification per $^{\circ}$ C for 0-18 $^{\circ}$ C and 28-50 $^{\circ}$ C (32-64.4 $^{\circ}$ F and 82.4-122 $^{\circ}$ F).                                                                  |

lent of a diode without forward voltage drop and negligible linearity error. The instrument is average reading and scaled to read RMS for sine wave input.

## ON THE TEST BENCH

### DC VOLTAGE

Ninety-five DV voltages in the range 1 mV to  $\pm$  1 kV were applied. The results were excellent.

Applying nominal voltages produced a reading of that voltage, e.g. —1.999V in gave —1.999V indicated, or within one least significant digit, e.g. 1.800V in gave 1.801V indicated, an error of 0.05 per cent.

After a little thinking and experimentation, a reading of 10.01 was obtained for an input of 10.003V, an error of 0.07 per cent. Admittedly, these tests were carried out in a temperature controlled laboratory, but as the maker specifies 0.25 per cent of reading plus 1 digit uncertainty, the measured error of only 1 digit was amazing, particularly as it was present only on positive voltages. The linearity could not be faulted.

### DC CURRENT

Nine test currents were used and the errors here were less than 0.3 per cent. (= 3 digits or less) except for the higher ranges, where the errors observed were 0.4 per cent, again much less than specified by the maker.

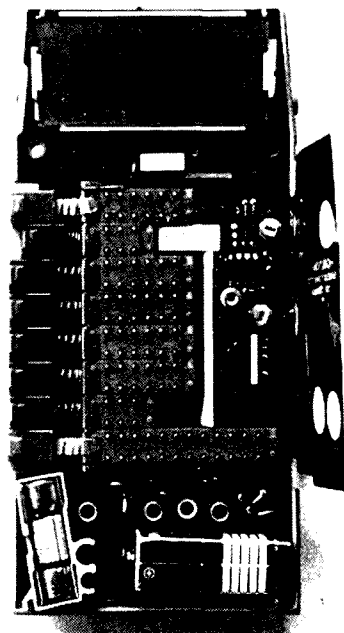
### RESISTANCE

A six dial decade resistance box and a range of standard resistors were used to measure the performance in the range 0.01 ohm to 11 M ohm at 29 points on the range. No error exceeding 1 digit was observed.

The open circuit voltages were all less than the maximum specified.

### AC VOLTAGE

Fifty-one 50 Hz voltages ranging from 1 mV to 500V were applied. The linearity



Interior of the Fluke 8022B

## GENERAL

|                                    |                                                                             |
|------------------------------------|-----------------------------------------------------------------------------|
| Protection Class 2                 | Relates solely to insulation or grounding properties defined in IEC 348.    |
| <b>Maximum Common Mode Voltage</b> | 500V DC/rms AC.                                                             |
| <b>BATTERY LIFE</b>                | Single 9V battery.                                                          |
| Alkaline                           | 200 hours typical.                                                          |
| Zinc Carbon                        | 100 hours typical.                                                          |
| <b>BATTERY INDICATOR</b>           | "BT" on display illuminates when approximately 20% of battery life remains. |
| Display                            | 3½ digit LCD (2,000 count), autozero, autopolarity.                         |
| Size                               | L x W x H: 18.0 cm x 8.6 cm x 4.5 cm<br>(7.1 in. x 3.4 in. x 1.8 in.)       |
| Weight                             | 0.37 kg (13 oz.)                                                            |

was tested on the 0.2V, 2V and 20V ranges. In all cases it was better than 1 digit. The maximum error found was 0.2 per cent (2 to 4 digits). Obviously the rectifier system works very well.

## AC CURRENT

Only a few test currents at 50 Hz were applied; because of test equipment availability the test currents were uncertain to 1½ per cent. All indications were within this range.

The DMM tested performed well within the maker's specification.

There is probably little difference between the different models except for the extra functions and AC network compensation to give wider AC frequency response. Perhaps some selection of components is made. It seems that many of the 8022B DMMs will be within 0.1 per cent under normal conditions even though this is much better than the maker's claims. Alternatively the instrument can be expected to maintain accuracy beyond the two years specified. Calibration is quite simple should it be required. (For best accuracy periodic checks should be made at intervals not exceeding two years. For moving pointer instruments the same applies, if they are not used daily. In this case six monthly tests would be advisable. This DMM is likely to meet its specification much longer than a conventional instrument even though its accuracy may be 20 times tighter than the conventional PMM instrument.)

## PROTECTION

Protection on current ranges is by back-to-back diodes across the current input terminals, together with a 2A glass cartridge fuse and a 3A sand-filled fuse. The 3A sand-filled fuse is used as a back-up to protect the printed circuit tracks on the meter if the 2A fuse "tracks" and maintains an arc under violent rupturing conditions.

On the voltage ranges three varistors rated at  $430V \pm 10$  per cent are connected in series across the voltage input terminals, together with a fusible resistor. Should the input voltage rating of the meter be exceeded the varistors will snap over drawing sufficient current from the source to blow the fusible resistor.

The plastic case and recessed terminals protect the operator from electric shock.

The instrument is safe to use as a hand-held device up to 500V DC/RMS AC between common and ground and/or 1 kV DC between common and high on the highest voltage ranges.

## ACCESSORIES

The DMM is supplied in an expanded foam container, complete with a calibration certificate, comprehensive instruction manual and two test leads.

A wide range of accessories is available.

These include:—

Carry case.

Temperature probes ( $-50^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$ ).

Current transformers (0-600A rms).

High voltage probes (0-40 kV, 0-60 kV).

High frequency probes (0.25-30V, useful up to 250 MHz or 700 MHz).

Battery eliminator.

AC/DC current probe (20/200A AC or DC).

Alternative test leads.

## CONCLUSION

The Fluke 8022B DMM is an attractive high performance instrument. The maker is justly proud of this product — a two-year warranty is given. For your money you get:—

- A 3½ digit 6 function DMM with high contrast LCD display (no more bent needles, no parallax).
- Full auto-polarity operation.
- Overload indication and protection.
- Dual slope integration for accuracy even when noise and mains hum is present.
- Light weight (369g/13oz.), tough, quality construction.
- Low consumption (200 hours from 9V alkaline battery).
- Wide range of accessories.
- Guaranteed accuracy for two years.

What's wrong with it you may ask? Well, as with all instruments of its class there is a penalty to pay for current measurement. The meter has a volt drop of 0.25V (max.) for currents up to 200 mA, but this can rise to 0.9V at 2A. Such a volt drop can give problems in some cases.

If you are in the market for a meter, give this one consideration.

The test instrument, which was selected at random from stock, was kindly supplied

by Mr. M. Johnson of Elmeasco Instruments, whose offices are listed below:—

## SYDNEY

PO Box 30, Concord, NSW 2137.

Telephone: (02) 736 2888. Cable: Calequip, Sydney. Telex: 25887.

## MELBOURNE

PO Box 107, Mt. Waverley, Vic. 3149.

Telephone: (03) 233 4044. Cable: Calequip, Melbourne. Telex: 36206.

## BRISBANE

GPO Box 2360, Brisbane, Qld. 4001.

Telephone: (07) 229 3161.

## ADELAIDE

GPO Box 1240, Adelaide, SA 5001.

Telephone: (08) 271 1839.

## PERTH

PO Box 95, Gosnells, WA 6110.

Telephone: (09) 398 3362.



# QSP

## BE PREPARED

October comes around every year, and every year we team up with the Scouting Movement around the world to bring Scouts, Cubs and Guides together in the Jamboree on the Air.

We all pat ourselves on the back and think how generous we are to provide such a service and rightly so. It is a very worthwhile weekend and truly reflects the amateur spirit.

How many of us stop to think about the phrase that is synonymous with Scouting—BE PREPARED? How prepared are we? We need to be well briefed in a number of aspects of amateur radio. Can you advise a non-member about how to join the Institute? Do you know what to do when an irate neighbour knocks on your door and yells "TVI"? Do you know your rights in this respect? Someone comes to you and asks about becoming an amateur, what do you tell him or her? These are only a few of the questions.

The ultimate test is the emergency. Emergencies have a habit of giving little or no warning. Can your station continue to operate without that vital 240 volt mains supply? Do you have any idea of how WICEN operates? Are you familiar with WICEN procedures? Who do you contact on receipt of emergency traffic?

Finally, if you get tangled up in a high voltage supply or with the mains, do members of your family know how to save your life?

Be a good Scout and be prepared!

—Editorial in OTC June 1982  
(VK4 Division AR Insert).



สมาคมวิทยุสมัครเล่นแห่งประเทศไทย  
RADIO AMATEUR SOCIETY OF THAILAND  
๕ ซ. ๓๓๖ ซ. ๑๑๖ พ. อ. ๒๐๐๖ กรุงเทพฯ, Thailand.



## SEANET CONVENTION

The 1982 12th Seanet Convention from 12th to 14th November will be hosted by the Radio Amateur Society of Thailand (RAST) and will be held at the Imperial Hotel, Bangkok. Because of customs and import licensing RAST warns visitors not to bring any amateur radio equipment with them. If you plan to attend the Convention (and maybe stay over for a week or so for the Loy Krathong Festival and the Elephant Round-up) write to the Secretary, RAST, Box 2008, Bangkok.

## "VACUUM TUBES"

A short note in April 1982 QST bemoans the unsealing (or unsocketing) of tubes by semi-conductors and that RCA will be discontinuing the manufacture of 2E26, 5563A, 828, 813, 7094, 810, 2X2A, 2E29, 811A, 829B, 8293 and, of all things, the illustrious 607.





# "Youth in the Electronic Age"

## 4th World-Wide Photo and Drawing Competition



### 1. PURPOSE

Youth—the engineers, scientists, managers and users in the telecommunication world of tomorrow—will again have a role to play in TELECOM 83 (Geneva, 26th October-1st November, 1983) through the 4th World-wide Photo and Drawing Competition "Youth in the Electronic Age".

The contest is for young people from 8 to 18 years of age in the 155 Member countries of the ITU to help them learn about:

- the intensive and ever-growing use of telecommunications in the world today;
- the role of such techniques in economic and social development;
- career opportunities in telecommunications.

### 2. CONDITIONS

The competition is open to young people who will have reached the age of 8 years by 1st January, 1982, and who will not yet have reached the age of 18 by that date.

### 3. CATEGORIES

Entrants will be divided into three age-groups:—

- Group A: 8 to 12 years.
- Group B: 13 to 15 years.
- Group C: 16 to 18 years.

### 4. THEME

The general theme of the competition will be:—

"Telecommunications for everyone."

Photographs, drawings, paintings and illustrations should develop the theme and show how young people imagine the role telecommunications play in making today's world shrink, what their effect will be on the family, on mass communications, on economic and social development of nations and on fostering understanding among peoples of the world.

### 5. MEDIA TO BE USED

Photographs, drawings, paintings or other illustrations (such as collages), excluding written texts.

### 6. INFORMATION ABOUT TELECOMMUNICATIONS

During the preparation of TELECOM 83, which has already started, information on this world-wide exhibition, as well as on the ITU and its activities, will be disseminated. Such documentation may be requested by participants from the ITU through the authority organizing the competition in the country concerned. This information may help young people to find ideas for photographs and drawings.

### 7. SELECTION OF ENTRIES

A national jury will have to be appointed in each country participating in the competition to select the 10 best entries in each age-group.

### 8. DATE FOR SUBMISSION OF ENTRIES SELECTED ON THE NATIONAL LEVEL

The entries selected must be sent by the national authority, before 31st May, 1983, to:—

International Telecommunication Union  
"Youth In the Electronic Age 83"  
Competition  
Public Relations Division  
Place des Nations  
CH-1211 Geneva 20 (Switzerland)

### 9. JURY

An international jury will be set up in Geneva, consisting of specialists in youth affairs, teachers, artists, diplomats and telecommunication experts.

### 10. PRIZES

The list of prizes will be published in Geneva, on 17th May, 1983, the 15th World Telecommunication Day.

### 11. ANNOUNCEMENT OF RESULTS

Results will be announced during the 4th World Telecommunication Exhibition, TELECOM 83 (Geneva, 26th October-1st November, 1983).

Entries submitted to the ITU will remain the property of the latter.

### TELECOMMUNICATIONS AND INTERNATIONAL CO-OPERATION

As one of the highlights of World Communications Year, the 1983 "Youth in the Electronic Age" competition is intended to stimulate the interest and participation of young people in the Year and in the development possibilities open to them in the expanding field of communications technology.

The theme of the competition is "Telecommunications for Everyone". Youth world-wide will have the opportunity to imagine and depict graphically, in drawings or photos, what "Telecommunications for Everyone" might mean for themselves and their respective countries. Directing the imagination of youth towards the possibilities and benefits of communications is an important step towards the development of future generations of scientists, engineers, managers, producers and consumers.

The 4th "Youth in the Electronic Age" competition was launched on the occasion of the 14th World Telecommunication Day, 17th May, 1982. The past three "Youth" competitions (in 1971, 1975 and 1979) wit-

nessed steadily increasing participation of young people in the 157 Member countries of the ITU. In 1979, 19 countries sponsored national contests, and out of some 200,000 entries, national juries selected 368 works for submission to the international jury.

Seventeen countries have already recognized the importance of the competition and have begun organizing it nationally. Their national juries will screen entries to be submitted to the international jury, which will meet in Geneva in September 1983. The countries which have already begun preparations are: Bahamas, Barbados, Canada, the Federal Republic of Germany, Fiji, Indonesia, Iran, Jamaica, Japan, Madagascar, Peru, Sri Lanka, Sweden, Tanzania, Thailand, Trinidad and Tobago, and Zimbabwe.

The entries considered by the international jury will be exhibited and awarded prizes during TELECOM 83, 4th World Telecommunication Exhibition, to be held in Geneva from 26th October to 1st November, 1983.

Important dates for the "Youth in the Electronic Age 83" competition are:—

17th May, 1983: Announcement of prizes to be awarded.

31st May, 1983: Closing date for receipt of entries from national juries.

26th October to 1st November, 1983: Exhibition of entries at TELECOM 83.

29th October, 1983: Prize-giving ceremony.

The general regulations giving complete details of the competition are listed above. The address of the national authority co-ordinating the competition in ITU Member countries may be obtained by writing to:—

International Telecommunication Union  
"Youth in the Electronic Age 83"  
Competition  
Public Relations Division  
Place des Nations  
CH-1211 Geneva 20 (Switzerland) ■



### PAGING SYSTEM

The ITU Telecommunications Journal for April 1982 contains a news item that a single individual can now be paged within a radius of from 1,000 to 2,000 km from a long wave transmitter HBG in Switzerland. This is known as VIP-LINE and a subscriber carries with him a special pocket-size receiver which is in fact a high precision clock capable of distinguishing the one call meant for it from all the other HBG outputs. Special batteries give a life of over 10 years so as to provide visual and aural signals. ■

# HOW'S DX



Ken J. McLachlan VK3AH  
PO Box 39, Mooroolbark 3138

With magnetic disturbances and solar flares that were felt across the universe and in some instances making communication virtually impossible we have probably the worst conditions upon us for many a year. These disturbances, according to media reports, were "the worst for six years (some reports said twenty-six) and the area of the sun's surface producing the solar flares was 1,400 times the size of Australia — and is the largest since 1957".

This is consistent with listening reports received covering the early to late part of June period and if a contact was made, dropout could and did occur over a matter of seconds.

Probably, with the solar cycle on the downward trend and propagation the way it is, it may be the proper time for us all to reflect on our operating skills. Personal opinion is that whether it be in VK or any other country, the modern operator has lost the art of calling CQ, particularly on a seemingly dead band. Calling CQ on a "dead" 10 and 15 metre band has netted many enjoyable QSOs and invariably many a new country on those particular bands at this QTH.

The modern operator, when he or she does call CO DX, tends to give long drawn out calls without a pause, and any interested listening DX operator gives up at not being able to return the call, now knowing the band is open he listens elsewhere or moves off and calls CQ himself. Ten to 15 second calls are more effective, with a five second listening break, repeated over a couple of minutes, then one drawn out call of the same duration.

When a station calls CQ DX that is what he or she generally means, not to have that rare country swamped by his friendly neighbour calling in to tell him that the temperature is below zero and he should be in bed. If he had called CQ, then he is fair game for a local contact.

Another observation from this QTH is that many operators from VK are reluctant to mention Australia in connection with their call sign. I use it and have found it as an advantage because a lot of DX stations do want to work VK and will give them a go against many other countries, particularly in a pile-up.

For an adventurous and positive approach that will create greater efficiency and give more QSOs per hour spent at the transceiver, listen often, if the band is quiet call CQ DX with frequent listening periods and don't be frightened to call CQ DX, CQ DX, AUSTRALIA VK . . . CALLING AND LISTENING. It is an effective way to make new friends, work new countries and fill the log.

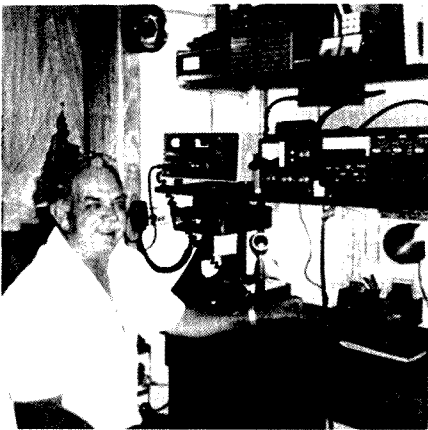
## ALBANIA

Maybe the breakthrough all DX orientated amateurs have been waiting for, particularly those wanting it for a new country.

Contacts from EA advise that operations will be permitted on both CW and SSB, this is probably due to the tests carried out a couple of months ago between ZA and EA on 80 metres which were regarded highly by the authorities. Unconfirmed reports also indicate that a DL could become active in the near future. Investigations of all "dog piles" and anyone signing /ZA would be definitely worth a call

## LARGE TOWER

Received a postcard from a constant contributor to AR and this column, ardent DXer and globe trotter Jim VK3DFD, and XYL Anne from Paris. Front of the card bears a stunning picture of the Eiffel Tower and the story line on the back is that Jim is working on how to convert it to a "tilt-over" type for amateur use. Jim, no more troubles with bent towers (refer page 8 April AR) with such a construction, but how do you get it past Customs?



Jim VK3DFD on the air

## WILLIS ISLAND

New operator Andy VK9ZA took over from Tony VK9ZH at the end of June. Tony, during his absence, won a new IC22S in a raffle conducted by the VK6 Tic Hill Repeater Group and it will be used well if the in excess of 10,000 QSOs in six months on Willis is any yardstick.

Gill VK6YL advises that the backlog of Bureau cards has been caught up with for VK9ZG since receiving the logs from the former Manager.

Tony VK9ZA has appointed VK6YL as his QSL Manager. Gill, you will just have to buy your "POSTIE" a big Christmas present for carrying all that mail to your door each day.

## VU IMPORTS

It is now permissible for amateurs in India to individually import up to ten thousand rupees of equipment annually (approximately A\$1,000). Although there have been many representations made over the years, it is believed that the assistance given by amateurs during a recent dam burst, in which many people lost their lives, was the deciding factor with the authorities. This now puts the amateur on an equal footing with scientists and professionals, as the latter have been allowed import privileges for a considerable period.

## SEA NET

The Annual South-East Asia Net Convention will be held this year in Bangkok on the weekend of the 13th/14th of November. SEA Net is a long standing net that can be heard at 1200 UTC daily on 14.320 MHz. Many famous DXers, including Father Moran 9N1MM and OM Tim BV2A, attend from time to time. Unfortunately, Kam HS1WR, one of the original members and a famous DXer and exponent of our hobby, will be sadly missed due to his untimely death recently.

## BY AGAIN

Three or four CW operators (including one YL, Jiao) are mainly working Europeans on CW, however the word is that it will not be too long before they will be using sideband. Their QSLing is second to none in efficiency and promptness in returns, also contrary to rumours IRCs ARE negotiable in China. QSL information as per JULY AR.

The first VK amateur to meet the officials of the China Radio Sports Association would be Kerry VK2BXT, who did so whilst on a holiday tour through the country. Kerry had the pleasure of meeting and talking at length with Cheng Ping, Secretary-General of the CRSA, the Vice Secretary-General Wang Sun, and Tong Xiaoyung, who is responsible for BY1PK's operation and the training of several thousand radio enthusiasts in Peking. On previous occasions these Officers of CRSA have enjoyed the company of amateurs from both Japan and America.

## PACIFIC DX

The SMOAGD's Pacific jaunt is going according to schedule. Calls to T30, T2, FW8, A35, ZL and VK are on the itinerary for the rest of this year, with hopes of VK9 Willis, VK9 Mellish, H44, C21 and even an attempt to put Spratly on the air before returning home in mid-1983. Included in their equipment is a TR7 and Linear. Antennas are a Triband beam and a vertical for the lower bands.

QSLs go to J. Svensson SM3CXS, Bergemsvangen 11, S-863 00 SUNDSBRUK, SWEDEN, and a separate envelope is requested for EACH operation NOT each QSO as some Managers demand.

# Heard Island Update

## FACTS

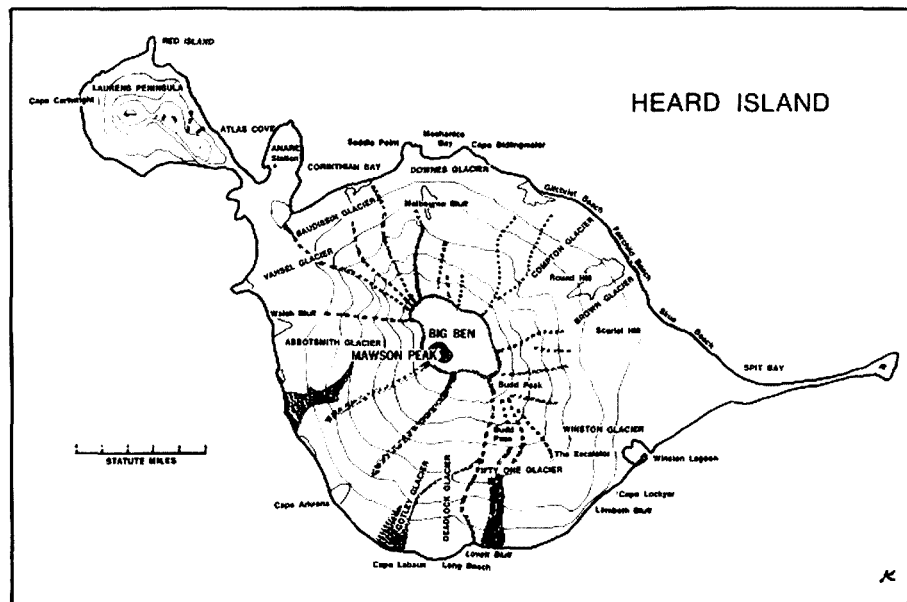
- ★ **HEARD ISLAND EXPEDITIONS** has been registered by the Corporate Affairs Commission in NSW.
- ★ **PROFESSIONAL ACCOUNTING and LEGAL EXPERTISE** has been engaged.
- ★ **SPONSORSHIP:** Excellent pledges by major DX Foundations has been forthcoming.
- ★ **BACKING** by the WIA Executive in their willingness to accept bulked donations for distribution.
- ★ **THREE OPERATORS** have been selected.
- ★ **VK0HI, CW and MD** call signs have been reserved.
- ★ **ANACONDA II** — A 10% deposit has been lodged on the charter of the vessel, for an estimated departure in January, 1983.
- ★ **MUCH MORE VK** funding and participation is required to allow **HEARD** to be **HEARD**.
- ★ **PARTICIPATE NOW**, this is a **VK PROJECT** that will be recognised **WORLD WIDE**.

Is it **FACT** or **FANTASY**? Which do I believe? Quite a problem for anyone, let alone an amateur who has numerous frequencies at his or her disposal to monitor, plus the whisperings of the well meaning DXer passing the "latest" on to his new-found friend or to the regular weekend "sched". Only the individual person can do this. However, this column has and is correlated on factual information. All Heard Island happenings are communicated and verified by written documentation. Written offers have been made to others who have been making overtures about expeditions, though no correspondence has been forthcoming.

The **VK6 DX CHASERS' CLUB (VK6-DXCC)** have supplied all correspondence that has transpired to this QTH since the inception of the idea and the salient points have and will be passed on. A licence, **VK0HI**, has been reserved by **DOC** for **Dave VK3DHF**, ex **VK9ZD**, and the Federal Minister for Science and Technology has advised that "there is no objection to the expedition proceeding, provided due standards of safety and environmental protection are observed". Further extracts of the letter which are pertinent include "The Government is anxious to ensure that, because of the severe climatic and ocean conditions likely to be encountered and because of the fragile and unspoilt nature of the Island's ecosystems, any expedition should be adequately manned and equipped and should take the necessary environmental precautions. Groups should be capable of dealing with emergencies themselves, and should not depend on obtaining assistance from the Government."

Formal landing approval will be forthcoming when charter, personnel and other relevant details are finalised, including the details of safety precautions and medical care arrangements that have been made.

As mentioned in previous updates, the **VK6-DXCC** has sought out and joined forces with a Mountaineering and Photographic Group who will assist in sharing the financial burden of such a venture, of



which the budget is in excess of A\$130,000 for the 12 man group. A large proportion of this expenditure is in vessel charter and fuel for 12 weeks made up of a travelling period of three weeks each way and the balance in laying offshore or sheltering at Kerguelen Island, some 200 nautical miles distant.

It is envisaged that an expedition base, including the radio party, will set up camp at Atlas Cove at or near the site of the old ANARE station. While the base camp is being established, a small group comprised of scientists and photographers will make a series of landings on adjacent Mac-Donald, Flat and Shag Islands (on which no previous landings have been made).

The landing at Atlas Cove and the other islands will be most treacherous owing to the high seas and heavy gusty winds that prevail in the area, although it is hoped to alleviate considerable problems by using inflatable rubber boats to transport personnel, supplies and equipment from the expedition yacht. The Surf Life Saving

Association of Australia is rendering valuable assistance with regards to advice on this problem.

The yacht will endeavour to land a second party in the area of Spit Bay. This party will establish a base camp, which will be in continuous radio contact with the amateurs working out of Atlas Cove, from here the mountaineers, supported by scientists and photographers, will attempt the ascent to Big Ben. The envisaged route will be via the Stephenson Glacier, Long Ridge, the Summit Plateau and Mawson Peak.

From Big Ben, the party will return to Atlas Cove to rejoin the radio group in preparation for departure back to the mainland.

### DATA

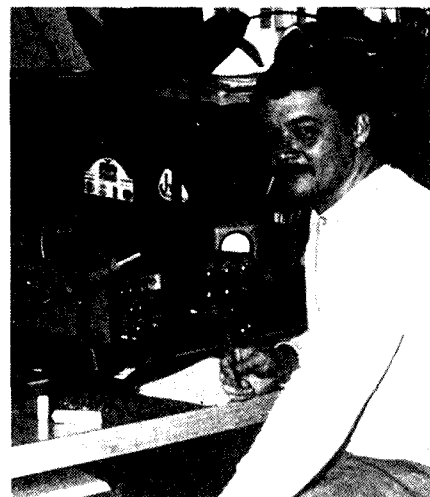
The accompanying table indicates some of the problems facing the expedition. The information reproduced has been gathered from meteorological data that was taken between 1948-54 and for one month in 1963.

All future updates on Heard Island in this column, due to my commitments, will be written by Nick VK6XI. Nick is

liaisoning with all facets of the operation on behalf of the VK6-DXCC and the radio group.

#### FB8WG

George FB8WG, who has given many a "new one", including a considerable number of VKs, stay on the Island is coming to an end. George's XYL must be congratulated for the way she has handled the QSLing, including the prompt return of cards and excess IRCs that were forwarded with the initial request.



George FB8WG

| CONDITION            | JAN.  | FEB   | MARCH |       |
|----------------------|-------|-------|-------|-------|
| CLOUD COVER          | 8/8   | 8/8   | 8/8   |       |
| MEAN DAILY SUNSHINE  | 1.7   | 1.6   | 3.2   | HRS   |
| HIGHEST TEMPERATURE  | 12.8  | 14.4  | 13.3  | °C    |
| LOWEST TEMPERATURE   | -1.1  | -1.1  | -1.7  | °C    |
| GROUND TEMPERATURE   | -0.4  | -1.1  | -0.4  | °C    |
| WIND GUSTS (HIGHEST) | 85    | 85    | 90    | KNOTS |
| AVERAGE WIND SPEED   | 25.5  | 25.9  | 27    | km/h  |
| CLEAR DAYS           | 0     | 1*    | 0     |       |
| RAINFALL             | 159.2 | 184.2 | 167.7 | mm    |

\*ONE CLEAR DAY IN ALL THE OBSERVATIONS TAKEN.

#### PROFILE OF JIM Z21BP

Jim was born in the town of Dalmuir, Scotland, one mile from Clydebank, where he attended high school. Jim left Clydebank high when he was fifteen to embark upon a motor trade.

His first position was in a service station during which time he taught himself to drive, having recently celebrated his 50 years of driving anniversary during which time he has driven everything from a lawn mower to heavy earth moving equipment (and probably driven everyone else crazy) and clocked up well over a million miles on the road.

Jim moved to Rhodesia (now Zimbabwe) in 1949 to work for the Government. Firstly working with heavy earth moving equipment then later to the Police workshops doing maintenance and repair work and also vehicle inspections.

Next stop for Jim was to the Postal Service, where he stayed until he retired. With the Postal Department Jim's work involved looking after six 500 watt motorcycle portable generators to supply standby power to stations throughout the whole country. By the time Jim left the department each station had at least a 3.5 KVA automatic mains fail unit and some even had a 12 or 25 KVA unit, whilst Salisbury boasted 220 KVA straight eight Rolls Royce diesels.

Jim's travelling to service these units caused him to sleep in the vehicle on many occasions and imagine his surprise one morning when he looked out to see evidence that a pride of lions had left their visiting card, and whilst driving on yet another occasion he had to apply the brakes in a hurry or else he was on a collision course with six elephants slowly crossing in front of him. (He felt they were too large to argue with as to who had right-of-way.)

Jim retired for three years with his feet up, but decided the leisurely life was not for him and for the past nine years he has been working with ZE1BJ in the radio and mechanical stores with the Army.

Jim became interested in radio in 1926, when he dabbled with crystal sets and cats whiskers, setting a pair of headphones

in a kitchen bowl to get more "noise" so more than one person could hear.

For many years, due to pressure of work, Jim allowed his interest in radio to slip, but in 1960, in Rhodesia, he started operating (and having a lot of fun) with a 38 set and an HRO using dipoles. Next he upgraded to a Panda Explorer and an AR88D and became engrossed in DX operation, attaining his DXCC on this ancient set of equipment. Also about this time Jim became intrigued in experimenting with antennas and has had great success with I/wires, dipoles of various types, quads of different types on HF and VHF, various yagis, inverted Veess, you name it, he has tried it.

Present equipment is a FTDX 150 and a FTDX 250 from Sommerkamp. With the 150 he uses a home-brew 813 passive grid linear. The current antenna is a Swiss quad, which is mounted atop a "home-brew" 50 foot by 9 inch triangular lattice mast made up of five 10 foot sections bolted together. In the centre is a 2 inch dural pipe extending 20 feet out the top on which all the antennas are mounted. The turning mechanism is a chain sprocket driven by a chain drive from a "hand wheel" inside the shack.

Jim has achieved 51 awards in 12 years and there are still more to come, so he is fast running out of space in the shack to display them all.

Anyone wishing to meet Z21BP can do so by joining the ANZA net on 21.204 MHz at 05.00 UTC daily, as he is a regular patron when conditions permit.

#### VATICAN CITY

Ever wondered where the three stations with the HV prefix are located? I have and now I know. According to RAD. COMM. June 1982, HV1CN, since coming on the air in 1957, is located on top of the building which houses the original studios of Vatican Radio. HV3SJ is located in the grounds of St. Peter's Basilica, and HV2VO at the Vatican Observatory, which is located in the grounds of the Pope's summer residence at Castel Gandolfo. All three calls have been active this year.

#### SU QSLing

All SU stations should be QSLed to the Call Book QTH. Many SU calls have and are still unfortunately being pirated and QTHs are correct in the 1982 Foreign Listings.

#### WRONG POST BAG?

John ZL2BHS was awaiting some important mail from WA1KVC which he knew was posted AIR MAIL on the 2nd April, 1982. John received it, after his fingernails were bitten off up to the elbows, on the 3rd June, 1982, complete with contents and stamps but with the addition of the stamp-mark "15000TP. HO CHI MINH 3 — Vietnam — 21/5/1982". So don't give up on that much promised card, it could be coming via the "long" path and you could end up with a collector's piece. It was posted on the 2nd of April not the 1st, John.

#### AFRICA

Ed W4MGN is tripping through Africa again. The last of his two month planned itinerary is August 3rd — W4MGN/3B8, August 8th — S79ARB, and the 12th — 5Z4CZ. QSLs to W4VDE. Last year Ed went on a similar trip and he actuated 9U5 land. Cards arrived promptly and correctly filled in, but the ARRL did and still will not recognise it for DXCC credits.

#### CISKEI

Maybe a new country? This area of Africa became independent late last year and operations have been planned under the prefix S42. Whether Don Search W3AZD, the ARRL DXCC administrator, will consider it only time will tell. Advice is, work the first one you hear, QSL and hope that it will not be too long before acceptance is granted.

## MAWSON BASE

Anyone requiring Mawson Base should monitor "Open House" 14.332 MHz each Thursday at 0930 UTC as Charles VK0LO joins the net and generally stays till 1200 UTC.

All QSLs for Charles go to VK6YL, either QTHR or via the Bureau.

## VP8

The Falklands are back on the air. Quite a number have been operating off batteries and passing essential traffic. Power is now being restored and, although it will take a long time to get back to normal, they are heading in the right direction.

## THE CONGO

Jorg TN8AJ has been giving many VKs a new one on 15 metres. Jorg is still running one kilowatt to his antenna system and for that QSL card send to Y25LO either direct or via the Bureau.

## UPDATE ON CLYDE VALLEY DX GROUP (See May AR p21)

As told in May the Clyde Valley Group are to operate from each of four extreme points (S, W, E, N) of Scotland. Each of the four locations will issue a distinctive QSL card exclusive to the location, and confirmed contact with each location entitles the station to claim a "MAIN EXPEDITION AWARD CERTIFICATE".

**DATES: MULL OF GALLOWAY (S) —** Operation from Sunday, 8th August, 12.00 UTC through to close down on Tuesday, 10th August, 12.00 UTC.

**ARDNAMURCHAN POINT (W) —** Thursday, 12th August, 12.00 UTC, to Saturday, 14th August, 12.00 UTC.

**DUNNETT HEAD (N) —** Monday, 16th August, 12.00 UTC, to Wednesday, 18th August, 12.00 UTC.

**BUCHAN NESS (E) —** Friday, 20th August, 12.00 UTC, to the final closure on Sunday, 22nd August, 12.00 UTC.

**TIMES:** Main frequencies for 20m are 14.210 and 14.190 with operating times around the clock with predicted coverage to VK on 14.190 MHz at 19.00-22.00 and 06.00-11.00.

15m will be operated 09.00-22.00 and VK will be looked for on 21.170 MHz 09.00-14.00.

40m worked 22.00 to 09.00 on 7.080 MHz as conditions allow.

All bands will be SSB operation with the special expedition call sign GB4GM and QSLs to the RSGB Bureau.

## THANKS

This segment has been compiled from information in magazines, including cq-DX, BREAK-IN, WORLD RADIO, RAD. COMM., DX Bulletin, QST, QTC, and the Geoff Watts News Sheet, also amateurs G3NBC, ON7EJ, ON7WW, JY3ZH and VKs 3UV, UX, YL, DKK, 4AIF, 6IH, NE, XI and YL, also SWL Eric L30042. Thanks to all contributors and good DXing. ■

## DX Heard and Worked

### CW WORKED ON THE WEST COAST

3.5: G13LFH, GM3YTS, PY1MAG, PY1ZAE, ZS6CK.  
7: FB8WG, HZ1AB, N6YK/V2A, OA4AWD, VP5JEX, ZL4PO/C.

### CW SWLing WITH ERIC L30042

10: FK8BU, FK8EH.  
15: 6Y5SG, FK0AD, FK8AL, FR7BP, HB9AEV, HK1QQ, N0ZO/DU2, TG9NX, W1DV/DU2, YC2BDJ, YU1VV, YV5EA.  
20: 4S7MX, 9M2CF, AM03CXC, CT4DX, ELOAP/MM, F6ATQ, FK0AF, FK8DP, FO0JD, FO8IR, N6YK/V2A, RK7JAA, T32AF, XE1LCH, XE2ACG, Y24Z, ZL4GF/C.  
30: C31YC, DK8SV, DL7AEA/EA6, F6ARC, G3JFF, GM3JDR, GW3AHN, HA7RY, HB9HQ, JA1MUZ, KM2DXU (EXP), OE9SLH, OH0BHA, QK2PFY, OZ9XD, VE1ASJ, YU3TZT.  
40: 4K1A 9J2BO, DL7AN, EA5CEN, FK8BU, G4CAO, HA6YH, LZ0GDL, OK3CSC, SM5CLE, T30AT UA2FCB, UF6FFX, UK5FAA, UP2BHC, UQ2GFM, WP4CEQ, Y51ZE, YU3TEY.  
80: UB5BAT, UQ2GDW, YB5AES, YU2RTW, ZK1DX

QSLers for June at Eric's QTH included: FK8CW, FK8EB, GB2RN, GD4BEG and OZ3LF (10 MHz), VK9YC, VS9HK (10m Beacon), XE2ACG, YV2BE, ZK1CQ, ZM7VU (18 MHz), 5Z4CM.

With no beams, rhombics, long wires or Vees Eric has now logged 39 countries from 459 CW stations heard on the 10 MHz band, also Eric could probably be the first VK to receive a card for the 18 MHz band. Your persistence has paid off, Eric, congratulations. (VK3AH.)

## QSL MANAGERS

4A2Q (XE2AQI), C31YC (DL0QI), CN8CY (G3GJQ), ELOAP/MM (JH4NPP), ET3PG (DJ9ZB), FK8CW (K21JL), H18XT (JA1XIQ), J28DP (F2GA), N6YK/V2A (N6NK), PA3BYI (DA6GW), TG9NX (WA4RZL), TZ0PP (F9KP), V3MS (W0CP), YB5AES (W4BBP), YU0ITU (YU1EXY), YZ9HDE (YU2HDE), ZL4GF/C (ZL4KI), ZS5SP (WD4HIV). MANAGER shown in brackets.

## QTHs YOU MAY NEED

CT2YG, Box 5, Lagoa 9560, St. Miguel, Azores  
FK8BBU, Box 2448, Noumea, NC.  
FK8EH, Box 6110, Noumea, NC.  
FO8IK, Box 4383, Papeete, Tahiti.  
FO8GM, Box 3835, Papeete, Tahiti.  
FO8IR, Box 6029, Papeete, FAAA, Tahiti.  
J28DM, Box 2414, Dibouti.  
S81WJJ, Box 821, Yumtato, Republic of Transkei.  
YC2BDJ, 95 Pandanaran St., Semerang, Indonesia.  
ZK1DX, Box 269, Raratonga, Cook Islands.  
ZS2DK, Box 10050, Port Elizabeth, Rep. of SA

## Faces Behind the Key and Microphone



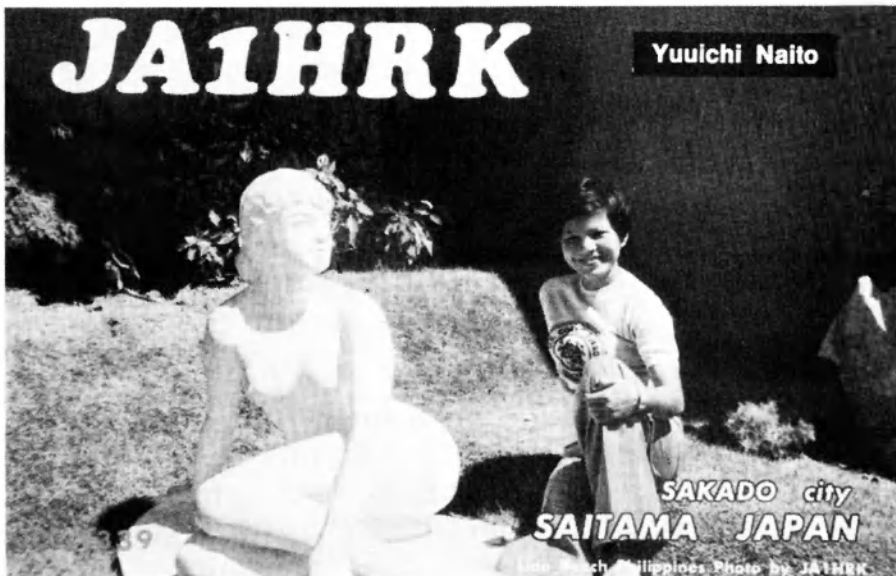
Kurt DL3RE



Wolf OE2VEL



Charles F6CVR



# EASTERN

## COMMUNICATION CENTRE

168 ELGAR ROAD, BOX HILL STH., VICTORIA 3128

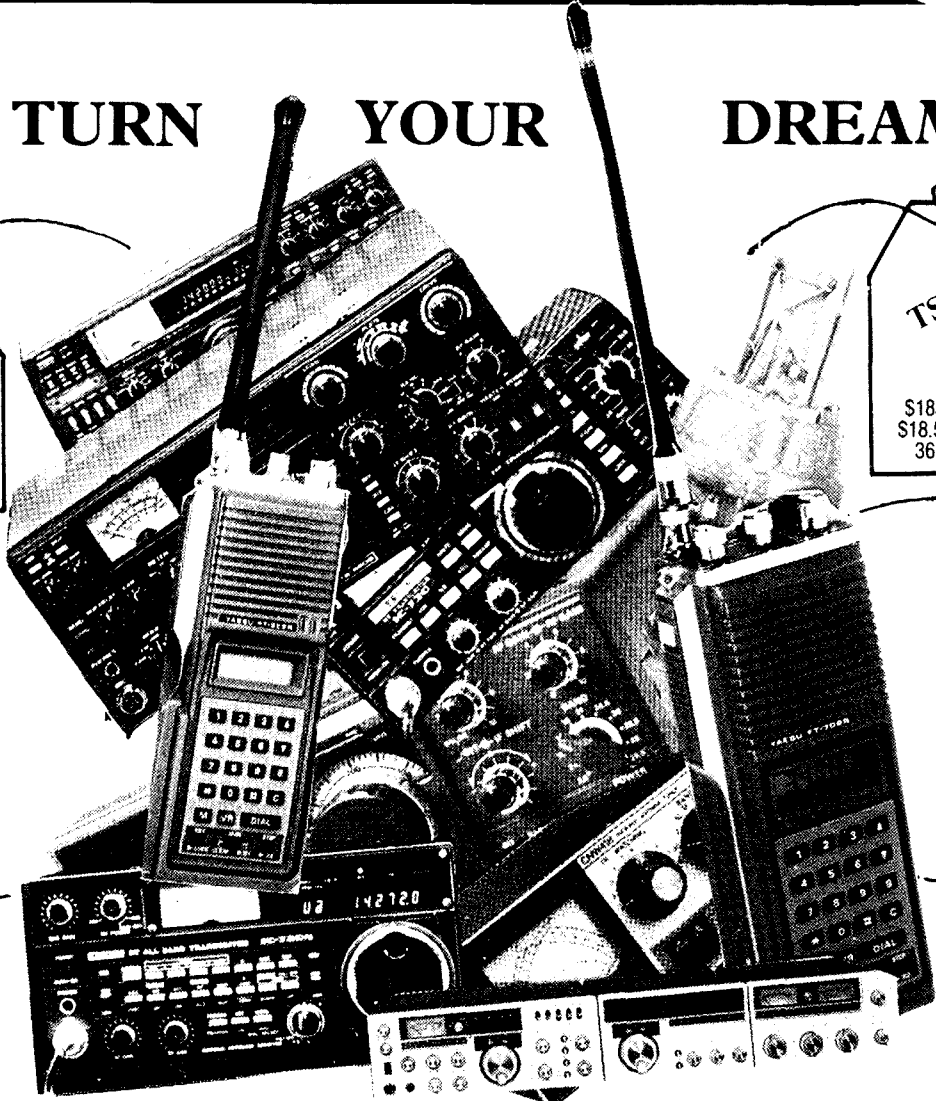
PHONE

(03)

# 288 3107

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IC730

\$999  
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30 MONTHS

IC2A.

\$309  
\$19 DEPOSIT  
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- IC251A 2M MULTIMODE ..... \$849

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- FT707 HF MOBILE TX ..... \$795
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- FT780R 70cm TX ..... \$695
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# LISTENING AROUND

Joe Baker VK2BJX  
Box 2121, Mildura, Vic. 3500

## UNUSUAL SIGNAL

A New Zealand amateur has told me of reception in New Zealand and elsewhere about what he described as "particle transmissions originating from various sources in the northern hemisphere" on a number of bands, including the 80 and 20 metre bands. He said that overtones of the transmissions with a bandwidth of between 20 and 30 kHz have been heard, the noise being described as similar to "white noise", but not to be confused with "whistlers".

On the 80 metre band in NZ it's most prevalent between 3.7 and 3.85 MHz. Asked about the possible origin of these particle transmissions, which are believed to be originating from laser equipment, he said that they are definitely man-made and are believed to be caused by SOME TYPE OF NEW WEAPON. It was not any form of interstellar radiation.

For obvious reasons I'm not mentioning the call sign of the amateur who told me of these transmissions, which were coming in 10 minute bursts, but those who were listening with me in the group that morning will know who it was.

## AN AMATEUR NAMED JOE!

When I'm "Listening Around" and I hear someone say his name is Joe, I can't resist the temptation to try and make contact with him. It was just after 5 p.m. on Saturday, 24th April, on approximately 28.500 MHz, that I heard ZS6ANW from POTCHEFSTROOM, near Johannesburg, working a station at Campbelltown, near Sydney. I was using the converted KRACO CB and 3 element antenna at 27 feet (also ex CB Crossbow Three), which happened to be aimed at JA. However, I gave the South African a shout, not really expecting that he might hear me, as I was very much QRP with only about 14 watts PEP, and that being aimed directly north. But back he came, giving me a 5 by 2, and remarking on my excellent modulation. He was using a 5 element beam and a 150S. I gave him 5 by 8. He said that he was most interested to know the type of set that I was using, and when told he said he hadn't heard of that brand of set in South Africa. All of which goes to show that, in a world of kilowatt giants, the humble CB rig can hold its own when the conditions are just right. Before he made contact with me, I could just barely hear the Campbelltown station on backscatter, and when he finished with me and was called by a VK1 (a prefix he very much wanted) I could also hear the VK1 on backscatter. Potchefstroom is a gold mining area.

## INTERNATIONAL GOODWILL

It is perhaps not inappropriate that I happen to be writing these lines in the early hours of Anzac Day when commentators

at the Dawn Services have been expressing the desire for peace and goodwill between the nations. It has occurred to me that we, who are radio amateurs, have in a very special way, an excellent opportunity for promoting these international ideals. Those of us who pursue this radio hobby, by virtue of the fact that we can speak on a person to person basis with members of other nations, may have found that the stereotype images that we may have formed of other people melt into insignificance when we find that by this personal contact that we have, the other chap is but another fellow just like us.

Above the BBC building in London there is a motto "NATION SHALL SPEAK PEACE UNTO NATION" AND YET THIS HAS NOT ALWAYS BEEN SO, even by radio, as those of us who can remember the propaganda broadcasts of the war years will know. Yet we, who now can speak to other people across vast distances will have come to know and respect the other fellow in a way which was not always open to us, and is still not possible for those who are not radio amateurs. It's more than 60 years since the first Anzac Day — may we who are today's radio amateurs do our utmost to promote that international goodwill which is the favourite topic of Anzac Day commentators.

## I FINALLY TALK TO STROMBERG

Those who listen to the 80 Metre Cocktail Net will know of VK3BSB's (Des of Paynesville) frequent references about having spoken to "Stromberg" in Florida. Well, for a long while "Stromberg" was just another name to me — that is until just before 8 a.m. on Anzac Day, when on 28.500 MHz the name of Stromberg materialised into a voice from my loudspeaker. Stromberg (W4WLX) in Orlando, Florida, was using 1 kW into a triband beam. He said that my signals (from my converted Kraco) weren't strong over there but as he was using a pre-amplifier, it helped him pull my little signal in. He said that he often speaks to Les VK3AAO, as well as Des, on 21.272 (a band which I do not at present have with my limited equipment).

Later, just after 2 p.m. on Anzac Day on approximately 28.590 MHz, I listened to a network of stations working Bill KM7FLP, maritime mobile, aboard the 40 foot ketch "Alita", which was somewhere in the area of Cocos/Keeling Island, apparently bound for Durban. Others heard on that net included KM6OWA (Bill), VK6CF (Chuck), and a few others that I couldn't hear too well. When the net finished, I called Bill KM6OWA, who was located at an elevation of 1,250 metres on the western side of the Sierra Nevada mountains at a place called VOLCANO, before signals both ways faded out.



I don't seem to suffer from much TV!!!

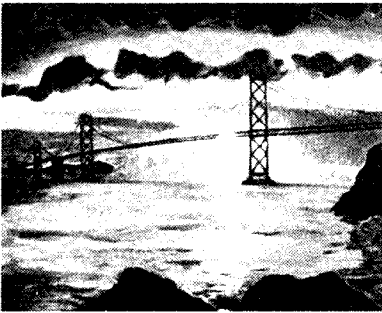
## OH NO!! TV!

As Anzac Day was not very pleasant outside (very dull, overcast and quite cold), I decided to take advantage of the good propagation then taking place on 10 metres and eventually worked Kazu (JR4GGT at Iwakuni) and JE6LDS (Hiro at Fukuoka), after which there was a sharp knock at my door. The KNOCKER (WHAT AN APPROPRIATE NAME FOR HIM) turned out to be a rather irate next door neighbour, the owner of a crummy ageing TV set with a rickety old antenna that would not be worth anything at a junk yard.

I've had dealings with this fellow before when, in the name of something called the good neighbour policy and for nix, I've tried to keep his old wreck of a set going for him, even though the set is fit only for the municipal garbage tip — a fact which I had on previous occasions made very clear to him. Nevertheless, he aired his views in no uncertain manner about my voice spoiling his TV viewing, despite the fact that I assured him that MY equipment is working as it should. I invited him to lodge a complaint with the RI, if he thought he had just cause, but I do not think that he will do this, because while I cannot preempt what any RI might think, I should imagine that he might be well advised to get rid of the old TV and its antenna and have a new one properly installed.

He asked me "Couldn't I do something (to his set) to prevent the unwanted TV!", and I told him that, as I knew the set (having previously worked on it), I was unwilling to do anything more. I tried to explain to him how it is that some old TVs do not have the requisite circuitry to reject unwanted signals, but I doubt if very much I said got through to him. I told him that, as a licensed amateur, I had a right to enjoy my hobby as much as he had to enjoy TV viewing, and that he had every right to call the RI. But so far nothing further has happened.





W  
6  
I  
T  
H

Remember my piece about W6ITH in March AR? Well, my good friend Alf Ah Gee (VK3DBV of Merbein) sent me a card with the following: "Reading your article in AR, you mentioned W6ITH. I am enclosing his card. He had a hand in building the (San Francisco) bridge pictured — he was in charge of communications." He had developed a special walkie-talkie type of set for use on the bridge by workmen. W6ITH is D. Reginald Tibbetts, 2151 Camino Pablo, Morgana, California 94556, and his gear includes a KWM-380 transmitter and receiver. Thanks, Alf.

73 from Joe. ■

## Proposal to Expand the US 20m Voice Sub-Band

From V. C. Clark W4KFC  
President ARRL

Obvious to most thoughtful amateurs is the importance of establishing uniform band plans in which all the amateurs of the world will co-operate. This assures equity and affords the best opportunity for international contact among amateurs employing the several transmission modes.

IARU has been a pioneer in the development and adoption of such band plans, and much success has been realised in gaining adherence to them, both by amateurs and those government administrations that have included band-planning in their rule-making.

The concept observes the principle that radio amateurs from the different countries of the world — subject to their particular class of licence and locally-imposed restrictions — should be enabled to enjoy equal access to the bands allocated to the Amateur Radio Service by the International Telecommunication Union.

Although some differences exist among the three world regions in the limits of the lower frequency bands, the amateur high frequency allocations above 10 MHz are essentially uniform throughout the world.

An IARU band plan was adopted several years ago by the IARU Region 2 organization and is in effect for every amateur band in general use. Under this plan the recommended use of the three higher frequency long distance bands is as follows:—

### CW ONLY

14.000-14.100 MHz.  
21.000-21.200 MHz.  
28.000-28.200 MHz.

### VOICE AND CW

14.100-14.350 MHz.  
21.200-21.450 MHz.  
28.200-29.700 MHz.

The IARU Region 2 plan contains no proviso restricting the amateurs of designated countries to smaller sub-band segments, although certain administrations have imposed regulations which do so. The amateurs of the United States, for example, have generally been required by their government to operate their voice stations in smaller band segments than those specified by the Region 2 IARU band plan.

The majority of the amateurs of the hemisphere carefully adhere to the Region 2 band plan, whether or not national regulations require such adherence. Further, there has existed an unspoken agreement, similarly adhered to, to avoid extensive CW operations in sub-bands designated for voice use.

The existing national regulations permit United States amateurs to operate voice from 14.200 to 14.350 MHz. There are 385,000 properly-licensed amateurs in the United States. By contrast, most of the 100,000 or so amateurs in the remainder of the western hemisphere are permitted by their governments to operate on voice over the much larger IARU sub-band from 14.100 to 14.350 MHz.

The radio amateurs of the United States, through their IARU-member society, the American Radio Relay League, now seek to gain a measure of relief from crowded conditions that exist within the 20 metre voice sub-band allocated by their government authority. The proposal is a measured one in that it would allow use of an additional 50 kHz to a limited number of the US amateurs — those holding the two highest classes of operating licence.

Specifically, what is sought by ARRL are the following sub-bands for US amateurs:—

14.150-14.175 MHz: For extra class licensees only, representing approximately 5 per cent of all US amateurs.

14.175-14.200 MHz: For advanced and extra class licensees only, or about 30 per cent of all US amateurs.

This change will provide a measure of relief, both from domestic and overseas interference, will enable US amateurs to communicate on a transceive basis with many amateurs of other countries who, for reasons of their own, tend to favour the frequencies between 14.100-14.200 MHz, and will constitute an important evolutionary step toward the IARU principle espoused at the 1980 Region 2 Conference calling for the "freedom of . . . radio amateurs the world over to communicate openly and fully with one another in the fulfillment of their responsibility and commitment to international friendship and goodwill", as well as the conference document dealing specifically with the new 18

and 24 MHz bands, which emphasizes the desirability and importance of "region-wide uniformity in the subdivisions by transmission modes".

While it is recognized that expansion of the US sub-allocation will increase the occupancy of the 14.150-14.200 MHz segment, producing a level of activity greater than now exists there, it will continue to be substantially below that in the 14.200-14.350 MHz voice segment to which US amateurs are now confined.

To protest the ARRL petition on the basis of an expected increase in mutual interference in a portion of the band now relatively sparsely occupied is to suggest that the amateurs of a particular country, because of their numbers (or other reasons) should be singled out for restrictions not imposed elsewhere in the world. The fact is that the amateurs of the remainder of the world have long experienced an incidental and unmerited benefit that is inconsistent with IARU purposes and objectives.

To share a resource, however acquired, involves some sacrifice, of course. But the International Amateur Radio Union exists to look beyond selfish and provincial desires, to embrace and seek implementation of the principles that benefit the world-wide amateur radio community, and to avoid self-serving or discriminatory exceptions that work to the disadvantage of the radio amateurs of ANY country. ■



QSP

### ATV GROUP

It is with some considerable pride that I can report that the SA ATV Group has just won permission from the Australian Government Department of Communication to "interlink" our two ATV Repeaters VK5RTV and VK5RCN. This is a first for VK and probably among the first such installations in the world.

A fascinating aspect of our repeaters is that each is at the opposite end of the technology spectrum, VK5RTV having two microcomputer controllers capable of almost every conceivable function and VK5RCN running entirely on wind and solar energy with minimal remote control capability. Therefore, in designing the interlinking control system we concentrated all the intelligence at VK5RTV with the chief responsibility of avoiding either "feedback" or "lockout" situations.

When fully operational, users at either end will be able to establish the interlink between the repeaters by use of a "Touch-Tone" signal on their inter-carrier sound; thereafter directional control will be as simple as keying your ATV Tx! Further details in future issues of the "SA ATV Newsletter".

John Ingham, Hon. Sec., South Australian Amateur Television Group.

### FACSIMILE AND TV

In the USA from 22nd February amateurs are permitted to use fax (A4 and F4) and TV (A5 and FV) on segments of the existing HF bands 6m, 2m and all frequencies above 220 MHz. Below 50 MHz the emissions shall not exceed that of an A3 single side-band emission. Some variation is permitted between 50 and 225 MHz, as well as the situation below 225 MHz of a simultaneously-transmitted A3 emission on the same carrier frequency.—QST March 1982. ■



AUSTRALIAN LADIES AMATEUR  
ASSOCIATION

ALARA

Margaret Loft VK3DML  
28 Lawrence Street, Castlemaine 3450



Siegi P29NSF

Hello to all again and hope you all are well, looking forward to spring, which is just around the corner now.

**REMINDER**

Girls, remember the BIRTHDAY NET on Monday, 23rd August, on 3.570 MHz ± QRM at 1030 UTC. This will be our 7th birthday, so please call in and say hello.

The first on-air Annual General Meeting was scheduled for Monday, 26th July; details next month.

**CONGRATS!!**

Congratulations to Carole VK2NCL, who is now VK2ECL; Joy VK2VJV, now VK2KJV, Gwen VK3KYL, now VK3DYL, Daurel VK3ANL, who is now N7DRH; Daurel was Secretary of ALARA for two years before returning to USA early in 1981.

**CONTEST**

The certificates for ALARA's first contest have been posted at last. With our committee in three States it took longer than we anticipated to finalise the design, printing and distribution. So apologies to all for the delay.

Valda VK3DVT, our Treasurer, was the designer of the certificate and is a very talented YL. I am sure those who see the certificate will be trying to add one to their shack wall this year.

Remember, contest number 2 on Saturday, 13th November, 1982, from 0001 to 2359 UTC, all bands and modes may be used. Details of contest rules and a sample of the certificate have been sent to AR

contest column and other amateur magazines.

A suggestion for a birthday or Christmas gift for your YL this year is a subscription to ALARA; please write to Valda VK3DVT for an application form. The address is C/- PO, Brighton 3186.

**CQ-YL**

Girls, remember the 6th day of each month is YL activity day; call CO YL hourly on the following frequencies — Phone: 3.588, 14.288, 21.188, 21.388, 28.588, 28.688. CW: 3.530, 14.058, 21.058, 21.133, 28.058, 28.133 MHz.

The "220" net on Mondays at 0430 UTC on 14.220 MHz is looking for new YL check-ins, so if you can manage an hour about this time give a call and you may add some new YL countries to your list for DXCC-YL.

Mavis VK3KS has been busy as usual issuing ALARA awards. These are most attractive and very popular.

Roe VK3AYL and Norma VK2DJO, with OM Frank and Bobbie (Frank's mum), attended the Mt. Gambier convention. Brenda VK3QT was also there.

Photo for this month is of Siegi P29NSF, who is a DX member of ALARA. She can usually be found on the activity day nets.

I spoke to Sharon VK4AWE, operating portable at the Mt. Isa show, on Friday, 25th June. She was being kept busy answering questions on amateur radio. Good work, Sharon.

That's all for this month. Take care.

73/33/88. Margaret VK3DML. ■

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**Microphone Features:**

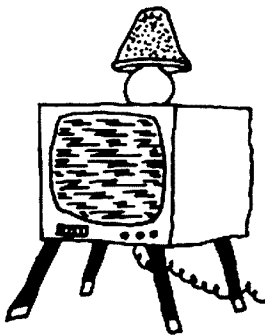
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98 CANTERBURY ROAD, CANTERBURY, VIC., 3216



# NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ  
38 Wattle Drive, Watsonia 3087

## Power to Control Interference

A radio station can purchase the very best communications or broadcast transmitters. They can have the equipment installed, aligned, and tested to the finest standards — And the station can still receive complaints of interference! — Why? — Because the interference is not due to the transmitter, but is due to the complainant's equipment being poorly designed in respect of selectivity, and the ability of the equipment to reject unwanted signals.

We can provide and enforce transmitter regulations and standards to the Nth degree; and still not solve the interference problems which are due to poor immunity, caused by poor design selectivity.

To control transmitters, and not control other electronic equipment, and expect to solve the interference problems, would be like having a badly fitting door and asking the wind to stop, rather than fixing the door.

Because at present there is no legally enforceable regulations and standards (legislation) covering a great range of electronic equipment, especially domestic equipment, most of this equipment has poor immunity ratings. In addition, much of this equipment actually radiates incidental radiation. Incidental radiation is the emission of electromagnetic energy from such devices which are not designed, intended, or LICENSED to generate or radiate such energy by radiation or conduction.

The Government must be persuaded, in the interests of all Australians, to give every consideration to the provision of legislation for regulations and standards to cover all electronic equipment, for both immunity and incidental radiation.

### DURAL NSW

Information about interference problems experienced with Dural repeater from engineer Jeff Pages VK2BYY.

"It came to our notice in December last year, appearing as a screaming noise on the two metre repeater VK2RWI.

The interference was only present when the repeater's transmitter was keyed up and, suspecting a fault in the repeater, Peter VK2PJ and myself spent New Year's Day going over the repeater and other station equipment with a fine tooth comb. We established that the interference was not stable in frequency, was random apart from requiring the transmitter to be on, and was not associated with any other equipment at the station (including the beacons on 10, 6 and 2 metres). Furthermore, close examination of the repeater's

transmitter showed no signs of parasitics. We left the station none the wiser but that evening the penny dropped.

The repeater output frequency is 147 MHz, and the input is on 146.4 MHz. A strong enough signal on 147.6 MHz could mix with the repeater output, producing a spurious on the input, and, on tuning to 147.6 MHz there was one almighty carrier. The carrier was unmodulated (the scream heard on the repeater being due to audio feedback as any modulation on the transmitter also appeared on the mixing product), and also dropped off periodically for intervals of about 3 seconds. It was also not particularly stable, tending to wander over a range of about 100 kHz. The 3 second gaps rang a bell, and tuning to 148.0125 MHz soon confirmed that the spurious disappeared whenever the Telecom paging transmitter came on. Knowing that one of the paging transmitters just happen to live about 500 metres from VK2WI, it was a simple matter to confirm, using a sniffer, that this was where the spurious was coming from.

This was no run-of-the-mill spurious. Going by various S-meter readings around the Sydney area, we estimated that it was running at least a couple of hundred watts ERP. Through a friendly Telecom engineer I got on to someone associated with the paging system, but the response was along the lines that the paging transmitter couldn't possibly be at fault. A major stumbling block was that the interference only occurred during periods of low paging transmitter activity, i.e. outside business hours.

The problem was discussed by Divisional Council and a letter was sent to Telecom explaining the situation. Several weeks later a reply was received informing us that they were unable to investigate the complaint, and that they were forwarding our complaint on to DOC. Subsequently a card was received from DOC advising that the problem would be investigated when an inspector was free.

Some time later I received a phone call

from DOC who, while sympathising with us, were unable to investigate as the problem only occurred outside business hours. Meanwhile the spurious had wandered down band and was now hovering around 147.4 MHz, wiping out the automatic slow Morse transmitter (VK2RCW) on that frequency and also upsetting users of repeater channel 7350.

Then a breakthrough occurred and the interference started appearing almost continuously. On the 17th March I rang DOC advising them of this, and following investigations Telecom admitted defeat and on the 23rd March the fault in the paging transmitter at Dural was repaired. Of course both Telecom and DOC are now both anxious to hear from us should there be any further problems.

So all in all, it took four months from the time we first observed the problem to the time it was repaired. Had it not started happening during business hours I imagine the problem would still have been with us. I understand staff cutbacks and the 'razor gang' are responsible for this situation."



## QSP

### ATV ON 24 CM

Without wishing to pre-empt the efforts of any other AR columnist, the latest copy of CO-TV magazine received — No. 117 — contains data on 24 cm ATV, together with some technical articles. Various ATV repeater segments are listed for the UK (draft 1273 to 1289 MHz inputs, 1241-1257 MHz outputs for 2 channels), W. Germany (proposed 1250-1260 MHz input, 1283-1293 MHz output), France centred on 1255 MHz, USA 1278.75 MHz repeater input, 1253 MHz output. Most ATV activity appears to be on AM except in France, which uses FM. On non-optical paths practical experience shows there is a path attenuation of 10 dB greater than the comparable path loss on 70 cm. Other losses are given as relative difficulty of power amplification at 24 cm, greater feeder losses and higher noise figures in receiving equipment. It should be noted that the new frequency tables ex WARC 79 shows amateur as the secondary service from 1240 to 1300 MHz for all three Regions with a window of 1260-1270 MHz for amateur satellites in the earth to space direction.



# EDUCATION NOTES

Brenda Edmonds VK3KT  
56 Baden Powell Drive, Frankston 3199

## UPGRADING NOVICE CALLS!

The introduction of the novice licence has allowed the entry into amateur ranks of many who would not otherwise have attempted to join. It is encouraging to see how many of these novices are now going on and achieving full calls. Indeed it now seems that the main demand may be for upgrading courses rather than novice. I know some areas are running this type of course and I would be very pleased to hear something about them, either from students or instructors. How are classes being organised? What areas are being emphasised? What special needs are showing up during the courses? Is there any way I can help?

## NOVICE REVIEW!!!

I also think that it is time for the existing novice syllabus to come under review. It has now been in use for nearly five years, and any weak or controversial areas should have shown up by now.

I wonder if any readers would be prepared to give some time to a careful study of some sections of the syllabus in order to define the content and degree of depth a little more clearly?

## EDUCATION NET

If there are any volunteers, I can be reached QTHR or on the Education Net which I have been trying to establish. The net is held Wednesday evenings at 12.00 UTC on or about 3.685 MHz in an attempt to bring together amateurs who are involved with classes or examinations. I feel that there is much to be gained from an exchange of ideas, and that a lot of effort could be avoided by sharing the preparation of class material that we are all doing individually. If you would like to join in — all comments and contributions are welcome.

## THANK YOU

Talking of contributions of another sort — thanks to all those who are more than defraying costs when writing to me for Morse tapes or other material. As a result of your generosity, the Education Section is running in the black, and I am occasionally able to purchase a tape or two for non-exam material for those who have little other source of CW material. (I would of course be very happy to relieve successful candidates of any unwanted CW tapes that could be recycled or copied.)

## COMMERCIAL BREAK

I now have available for copying ten CW exams at each speed — 5 and 10 w.p.m. These are past exams in the format at present being used, so are recommended for use just before the exam, i.e. they are not a learning tape. However, I do have some learning tapes also — starter, and some random letters and plain language at both speeds. The system is — you send me a tape and I copy onto it for you. The 10 exams fill a C60 tape. So specify what it is you want. Allow a couple of weeks for return, as I have to fit my free time into the availability of the copies. The only cost involved is the postage.

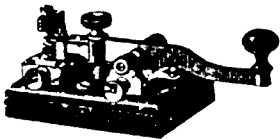
I also have trial novice and AOCOP theory and regulations exams available — two of each. These can be had from me or from the Executive Office. I aim to have a new theory exam ready the month before each official exam. There is no copyright on these, so they can be used as you wish. Again the only cost is postage.

Best wishes to those of you sitting for the August exam. May we hear you all on air very soon.

73. Brenda. ■

# POUNDRING BRASS

Marshall Emm (VK2DXP)  
PO Box 362, Goulburn, NSW 2580



Pounding Brass, a new monthly column, will appeal to all, from the Novice who has just received a licence to the seasoned SSBer who hasn't used the key since sitting for the licence.

Welcome to AR, Marshall. (Ed.)

## TECHNIQUES AND TITBITS FOR THE CW OPERATOR

This is intended to be a regular feature for anyone interested in CW operation, and I would like to begin by making some general comments and describing the aims and intentions of the column.

For those who may have some misgivings, I would like to state categorically that I am not a "CW FREAK". I very much enjoy using CW, and I feel that the mode has been overshadowed in the Radio Press by the less demanding radiotelephone mode. There is no dust on my microphone, and I would like to think I have a reasonably well balanced attitude toward the various aspects of this hobby of ours. By means of this column I hope to restore the balance of printed matter a bit, to remove a bit of the mystery, to pass on information of an operational nature, and to provide a forum for discussion of any matters which seem

worthy of comment, so long as they have some relationship to the CW mode.

I am not an axe-grinder. I know full well, for example, that in some eyes I am committing a sin by using the term CW when in fact the mode is Interrupted Continuous Wave, or ICW. But I will use the term CW in the sure and certain knowledge that everyone knows exactly what I mean.

Any implication in this column that a particular procedural usage is "correct" is only my own understanding of common practice and practicality. But communication by definition relies on mutual understanding of form and content, and these things can only be satisfactorily discussed in print. Could you really ask another operator "U SEND T FER 0, HW CUM"? If you did you might well be told that everybody knows T means 0, but of course that is only a part of the story. One might send "TEMP 0 C" or even cut it down to "T 0 C", but you would not be communicating very

well if you sent "T T C". That is a very good example of what this column is all about.

Some of the topics to be discussed in future months include Learning and Teaching Morse Code; Conducting a CW QSO; The Q Code and Abbreviations; Contest Operation; Keys and Keyers; QRPP Operation; The Slow Morse Broadcasts; CW Net Operation; and CW DX and Dogpiles.

I would like to devote a part of each column to readers' questions, so if there is anything at all that puzzles you, please drop me a line. There is every chance I won't know the answer, but some other reader might.

Next month's column will be devoted to the CW QSO, and should be of particular interest to those of you who are too bashful to try it "live".

Till then, 73 ES BCNU.

VK CW QRPP calling frequency: 80m  
3.530 MHz.



# NOVICE NOTES

Edited by Ron Cook VK3AFW  
7 Dallas Avenue, Oakleigh 3166

## Araldite Insulators

David Rosan ZL1AFQ, who resides in beautiful Mariangi Bay has written to me describing his experience with araldite insulators. Over to you David.

"I read with much interest the Novice Notes AR of April 1982 concerning the use of Araldite as an insulator/clamp for a dipole.

It may be of interest to your column readers that I have used Araldite for about 15 years as the insulator/support for a 20 metre groundplane and latterly 15 metres.

Initially I used a very large ceramic insulator (Fig. 1) (size 8 in. long of unknown origin) but used Araldite as the support medium for the vertical element. This proved to be extremely successful. During the lowering of the antenna for some maintenance (the GP sat on top of a 22 foot section of 3/4 in. water pipe, the centre insulator snapped but was repaired with Araldite which held for the rest of the system's life. The central element was a war surplus copper clad steel tube which eventually corroded and broke (I lived near the ocean) and the antenna was discarded.

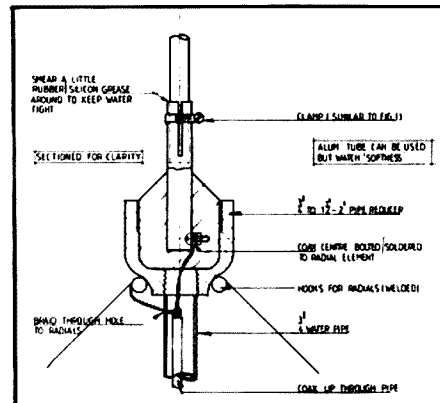


FIG. 2


Due to space considerations the ground plane was again erected but using a 'modified version' at the centre (see Fig. 2) and this provided many years of good service being somewhat more robust in overcoming the weakness of the ceramic insulator's brittleness and tendency to snap. This later system provided many years of service and I would no doubt still be using it but for a change of QTH some months ago.

From memory, the insulator in the later system measured many, many megohms (how many I can't recall), however I believe this is not too important as the centre of the Dipole/GP is high current low voltage. Araldite has both good insulation properties and inherent strength.

I hope this short note is of some interest."

Yes David a very interesting note. Thank you for your contribution.

73. VK3AFW.



QSP

**TRANSISTOR DANGER**  
Transistors in some transmitter power amplifiers are encapsulated in a ceramic called beryllium oxide. No danger can arise from normal handling of this material in its solid form, but it is extremely toxic if pulverized and the dust is inhaled. The amount which can cause death or chronic disease is incredibly small . . . only 50 micrograms per cubic metre.

Never under any circumstances attempt to drill, file, grind, polish, cut, break, etch or otherwise modify a piece of this ceramic. Also do not discard these transistors in waste which — through compacting or other processes — might cause fracture or abrasion.—WORLD RADIO, February 1982.

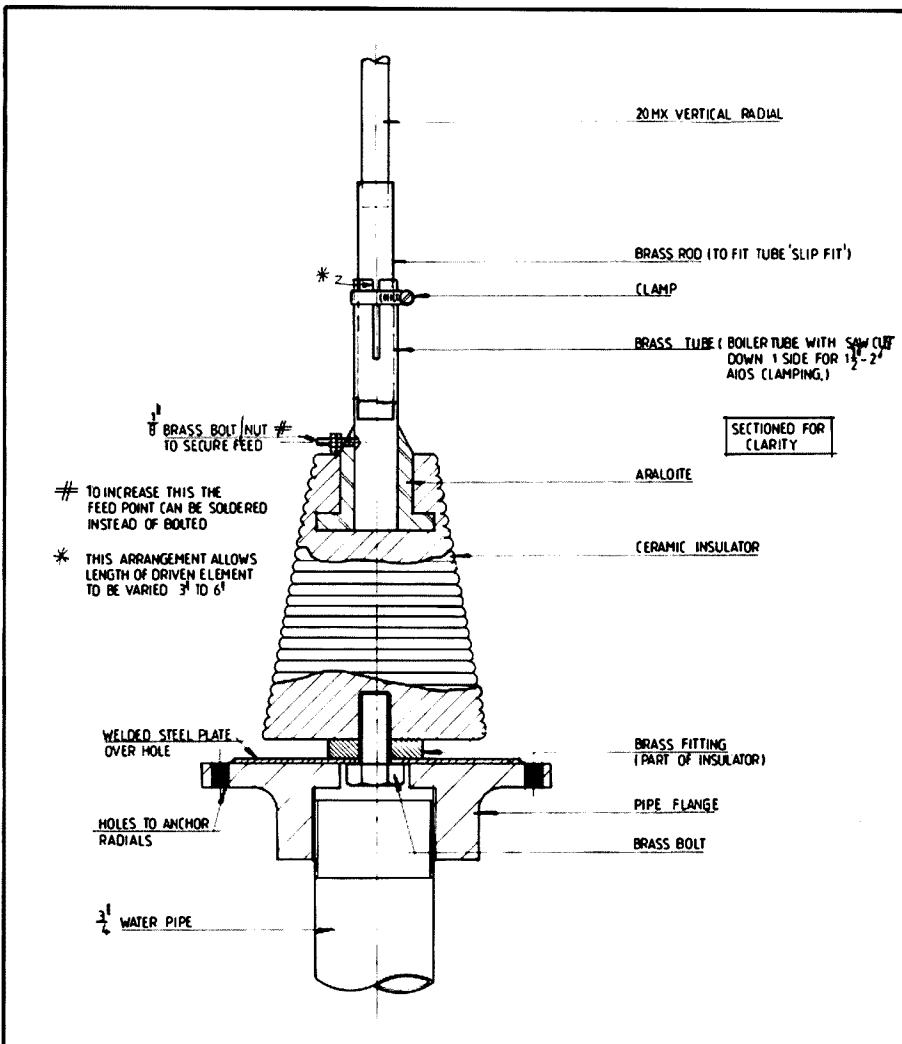


FIG. 1

# AMSAT AUSTRALIA

Bob Arnold VK3ZBB

41 Grammar Street, Strathmore 3041

## CO-ORDINATOR

CHAS ROBINSON VK3ACR.

## AR NOTES

BOB ARNOLD VK3ZBB.

## CORRESPONDENTS

VK3YQX, VK5HI, VK5AGR.

## ACKNOWLEDGEMENTS

AMSAT Satellite Report.

ARRL News Bulletins.

## INFORMATION NETS

### AMSAT AUSTRALIA

1000Z Sunday and Wednesday (3.680 MHz winter, 7.064 MHz summer).

Control: VK3ACR.

### AMSAT PACIFIC

1100Z Sunday, 14.305 MHz.

Control: JA1ANG.

### AMSAT SW PACIFIC

2200Z Saturday, 28.880 MHz.

Control: W6CG.

PICK UP YOUR BASIC ORBITAL DATA FROM THE AMSAT AUSTRALIA NET.

## AWARDS FOR SATELLITE OPERATING

There are two awards available to local satellite operators:—

1. OSCAR SATELLITE COMMUNICATIONS ACHIEVEMENT RECOGNITION (AMSAT).

This award is made to amateurs who can confirm by QSL Card, two-way communication with two countries, together with six different VK Call Areas.

Cards should be sent to Colin Hurst VK5HI, 8 Arndell Road, Salisbury Park, SA 5109, with adequate money to cover postal charges for the return of the cards and a certificate

## 2. MODE J AWARD.

To become a member of the Mode J Club send in your log of eight two-way contacts on Mode J, AMSAT OSCAR 8 (QSL cards are not required). With this log give details of your equipment and send to Larry Roberts W9MXC, 3300 Fernwood, Alton, IL, 62002, USA. To receive an attractive certificate and the monthly (approximately) newsletter include adequate US dollars to meet the postal charges, etc. I suggest US\$10 would cover 12 months costs.

## AMSAT OSCAR 7

It is reported that the AO7 Beacon on 145.972 MHz has again been heard. Operators are requested to monitor this frequency when AO7 is in sight and to report any signals to our Co-ordinator VK3ACR.

## MELBOURNE'S NEW SATELLITE SERVICE

Dick Robblins VK3ARR and Peter Hallgarten VK3AVE have now established an "on request" service to provide information on orbit passes visible from Melbourne for all amateur satellites and a few professional ones of note, such as SHUTTLE and SALYUT 7.

A feature of this service is quite unique in that it uses another one of the more sophisticated amateur modes — AMATEUR TELEVISION.

On request Dick will display the orbital data through the Melbourne ATV Repeater VK3RTV.

Dick and Peter can usually be found each evening on 147.200 MHz.

## INFORMATION SERVICE RS5 AND 7

RS5 and 7 appear to be giving regular news bulletins via their code store channels. The news report naturally refers to the activity of the Soviet Amateur Satellites, it is repeated for three consecutive days and then updated. The frequencies are 29.452 and 29.501 MHz.

## PHASE IIIB

The new Phase IIIB satellite has been checked out and found to be in first class condition, apart from slight overheating in the receiver. All is now in readiness for the launch, which is scheduled for February or March 1983.

## AMSAT CAR STICKERS

Andy VK3YQX has a supply of car stickers produced in the USA as a fund-raising activity for the Phase 3 satellite. Please support the amateur satellite cause by sending \$1.40 for one of these stickers to Andy Squires, 55 Vincent Street, Daylesford, Victoria 3460.

## STATUS REPORT

### AMSAT-OSCAR 8

The battery condition is giving some cause for concern as the voltage is only just over the shut-down parameter. The satellite has been taken out of service on a number of occasions during June.

For the time being AO8 will be on Mode J only and will be in Mode D (shut-down) on Wednesdays. The position will be reviewed when the satellite is out of the earth's shadow.

### UOSAT 9

Attempts to salvage UO9 continue with attempts to de-sense either the 2 metre or 70 cm command receiver. In addition to the receiver breakthrough requirement it appears that correct timing is required to provide coincidence of two narrow unsynchronised pulses. It is therefore necessary to make the attempt often enough to give a reasonably favourable statistical chance

of realising a pulse coincidence. The current high power attempts are being conducted by Dave Olean K1WHS.

## RS SERIES 3 TO 8

Working well.

### RK 02 (ISKRA 2)

Has not been operational as far as we can ascertain. Likely to be out of orbit when these notes are published.

## ISKRA

Astronomer Greg Roberts ZS1BI reports that ISKRA 2, the Russian word for spark and the newest amateur radio satellite, was spotted on a recent pass over his observatory in South Africa. The satellite was launched at about 328 km (204 miles) on 17th May when it was deployed through the hatch of the Salyut 7 spacecraft by the two cosmonauts aboard. Greg reports that the ISKRA 2 appeared to have a magnitude of about 7.5. That is about four times dimmer than normally can be seen with the unaided eye. Each magnitude step represents a change in brightness of 2½ times (2.512 to be more precise). A 5th magnitude star is the dimmest one can see normally, while the brightest stars have magnitudes of 2, 1 or even —1. Sirius, the brightest star, is —1.44, while Mizar, the second "star" in the Big Dipper's handle, is actually a binary (double) comprising a 2nd and a 5th magnitude pair.

The modest instrument Greg used had an objective lens of about 63 mm (2½ in.) and a field of view of about 8 degrees. ISKRA 2 appeared to be spinning "because", according to ZS1BI, "of the rapid fluctuations in brightness which usually indicates a spinning object".

ZS1BI has been doing this for years and is probably the best there is at watching these elusive points of light flit across one's field of view just after dusk or just before dawn. Meanwhile, a frustrated amateur fraternity awaited some indication regarding the possible future of the newest sputnik, ISKRA 2. The normally productive news sources have been sadly silent with respect to ISKRA; a sign that perhaps there is little hope held out for the short-lived bird to be turned on. A wait-and-see posture was apparent in most veteran OSCAR users. Many pointed to the 24th of June special events stations as offering a suitable "occasion" for transponder activation if the technical difficulties earlier surmised to have delayed the turn-on turn-out to be false or cured.

Dozens of low-flying satellites can be seen in the evenings and before dawn with the naked eye. Many are in low (150 km) polar orbits and are magnitude 1 or 2, making for easy spotting. ■

**SATELLITE OPERATING FREQUENCIES — JUNE 1982 (in Megahertz)**

| Satellite        | Oscar 8         | UOSAT 9  | RS3    | RS4    | RS5           | RS6           | RS7           | RS8           |
|------------------|-----------------|----------|--------|--------|---------------|---------------|---------------|---------------|
| Beacon           | 29.402          | 145.825  | 29.321 | 29.360 | 29.452        | 29.411        | 29.341        | 29.461        |
| Beacon           | 435.095         | 435.025* | 29.401 | 29.408 | 29.331        | 29.453        | 29.501        | 29.502        |
| Transponder Up   | 145.850-145.950 |          | none   | none   | 145.91-145.95 | 145.91-145.95 | 145.96-146.00 | 145.96-146.00 |
| Transponder Down | 29.40-29.50     | ‡        |        |        | 29.41-29.45   | 29.41-29.45   | 29.46-29.50   | 29.46-29.50   |
| Transponder Up   | 145.90-146.00   |          | none   | none   | 145.826‡      | none          | 145.835‡      | none          |
| Transponder Down | 435.20-435.10   |          |        |        | 29.331        |               | 29.341        |               |

\* Other beacons for experimental use. † Various experiments planned. ‡ Auto Transponder.

The following frequencies will be used for Phase III B —

**B. TRANSPONDER**

|                    |                 |
|--------------------|-----------------|
| Uplink             | 435.025-435.175 |
| Downlink           | 145.975-145.825 |
| General Beacon     | 145.812         |
| Engineering Beacon | 145.990         |

**L. TRANSPONDER**

|                    |                   |
|--------------------|-------------------|
| Uplink             | 1269.050-1269.850 |
| Downlink           | 436.950- 436.150  |
| General Beacon     | 436.04            |
| Engineering Beacon | 436.02            |



# What is Lightning?

Storm clouds develop an electrical charge (a cloud is negatively charged at the bottom, positively at top), and this produces a positive charge on the ground that follows the cloud like a shadow. Between the cloud and the ground there is a potential of millions of volts. Positive and negative "want" each other (opposites attract, like magnets), but air is a poor conductor. So the electrical charges strain — the positive current runs up hills, church steeples, trees, people, trying to reach the negative bottom of the cloud. Meanwhile, jagged negative feelers are shooting down, a little closer to the ground each time. Finally, the resistance of the air is overcome and a connection is made. Along a conductive air channel, a vast surge of electricity shoots from ground to cloud with a brilliant flash. (That's right — FROM GROUND TO CLOUD, though it LOOKS like cloud to ground.) One stroke of lightning can be a few hundred metres or many kilometres long.

**HOW HOT IS IT?**

Typically, from 17,000 to 28,000 degrees Centigrade. That's three to five times the temperature of the sun's surface. Scientists talk of "cold" lightning, but they mean one kind of lightning that lasts a very short time, about one-thousandth of a second. The other kind ("hot") lasts a lot longer, relatively — about 1/10th of a second. Hot lightning starts fires; cold lightning's effect is more likely to be explosive. Lightning's intense heat violently expands the air along the path of the stroke. So fast does the air rush aside that it makes waves that can be heard — a sharp crack if the lightning is close to us, more of a rumble if it's far off. "Superbolt" is the name given to very rare flashes that are more than 100 times as

powerful as regular lightning. The run-of-the-mill bolts put out about 1,000 million watts; a superbolt gives at least 100,000 million, maybe a billion, maybe 10 billion! These recently discovered bolts seem to hit most often off the coast of Japan. Mostly, they strike over water but once in a while one hits land.

**WHEN DOES IT HIT?**

Every day, approximately 1,800 electrical storms occur round the world. They give forth about 600 lightning flashes each second, of which 100 strike the earth. That's roughly 8.5 million lightning bolts touching down every 24 hours. Most scientists today agree that the steady loss of electrons to the atmosphere is balanced by thousands of daily thunderstorms that pump electrons back to earth. In other words, thunderstorms keep the world in electrical balance.

Lightning also converts some of the nitrogen in the air into nitrogen compounds, which are washed down with the rain. Each hectare of earth gets a few kilos of this free fertilizer a year.

**SAFETY DO'S AND DON'TS**

Don't stand under a tall tree. Don't let yourself be the tallest thing around (such as in a boat, an open field or on a hilltop). If you are in the water, get out. Put down metal objects — golf clubs, fishing rods, guns; take of cleated shoes; don't ride a bicycle. If you feel your hair stand on end or your skin tingle, it may be a sign that lightning is about to strike. Squat, bend your head forward and hug your knees. But don't kneel, lie flat or get on all fours. Get inside a large building or house. Or a car (it isn't the tyres that make it safe — it's the metal frame). Don't touch metal in-

side the car or use the radio. Once you're indoors, the safest place is in the centre of the largest downstairs room, away from the fireplace or chimney. Don't use the telephone, the plumbing or plug-in appliances. Stay away from doors and windows, radiators and stoves. If a person is hit by lightning, chances are the shock is only temporary — if someone acts fast. The danger is brain damage if the heart and lungs aren't revived quickly. Still, any number of lightning victims who appeared dead have been "brought back to life" by quick thinkers who were trained in the techniques of resuscitation.

Finally, here is a comforting thought. If you're scared of lightning, just remember this: if you see the flash, it has missed you.

Lyrebird December 1981

**The WIA is in business for more members. Please help.**

**Old-Timers Club**



**RADIO AMATEUR OLD-TIMERS' CLUB**  
Members are reminded of the QSO party on MONDAY, 9th AUGUST, 7 MHz, 0800Z to 1100Z.

Rules and logs — See AR February 1982.

John Tutton VK3ZC.



# CONTESTS

Reg Dwyer VK1BR  
PO 236, Jamison, ACT 2614

## CONTEST CALENDAR

|           |                         |         |
|-----------|-------------------------|---------|
| August    |                         |         |
| 7-8       | ROMANIAN CONTEST        | FCM/CQ  |
| 14-15     | REMEMBRANCE DAY CONTEST | AR 7/82 |
| 14-15     | SEANET PHONE            | CQ      |
| 14-15     | EUROPEAN CW             | FCM     |
| 21-22     | ALASKA QSO PARTY        | CQ      |
| 21-22     | SARTG RTTY              | AR/CQ   |
| 28-29     | ALL ASIAN CW            | AR      |
| 28-29     | ALABAMA QSO PARTY       | CQ      |
| September |                         |         |
| 5         | BULGARIAN CW            |         |
| 11-12     | EUROPEAN PHONE          |         |
| 11-12     | G. QRP DAY              |         |
| 18-19     | VK NOVICE CONTEST       |         |
| 18-19     | SCANDINAVIAN CW         |         |
| 25-26     | SCANDINAVIAN PHONE      |         |
| 25-26     | DELTA QSO PARTY         |         |

**NOTE:**  
Check the rules of the Remembrance Day Contest in July AR. They have been altered.

## CONTEST CHAMPION TROPHY — 1981 RESULTS

The contest champion is chosen from participants in the following contests who consistently achieve high scores: John Moyle National Field Day Contest, Remembrance Day Contest, VK Novice Contest, VK/ZL Oceania Contest.

Entrants must participate in three of the four contests and must achieve a position up to 10th. For each of these positions you are awarded a points score which combine to make the final score total.

From the 14 amateurs that were eligible to participate after the VK Novice Contest, only two (2) managed to participate in three of the four contests.

## RESULTS

First position and winner: VK3XB with a points score of 19 points.

Second position: VK2BQS with a points score of 12 points.

There were no other stations qualifying.

Mr. Ivor Stafford VK3XB again wins the Contest Champion trophy with his consistent efforts with contests and operating the amateur frequencies.

Ivor has successfully won the Contest Champion trophy for 1980 and now continues to hold the trophy for another year. Congratulations Ivor.

## ALL ASIAN CW RESULTS FROM 1981

|           |                                              |
|-----------|----------------------------------------------|
| Australia |                                              |
| VK4XA     | 28 MHz 17808 Single Band Certificate winner. |
| VK3RJ     | 28 MHz 925.                                  |
| VK2BQQ    | Multi-band 51900 Certificate winner.         |

|        |                   |
|--------|-------------------|
| VK6FS  | Multi-band 45720. |
| VK5TI  | Multi-band 25584. |
| VK6JS  | Multi-band 19740  |
| VK2DID | Multi-band 4653.  |

## THE 23rd ALL ASIAN DX CONTEST

The purpose of this contest is to enhance the activity of radio amateurs in Asia and to establish as many contacts as possible during the contest periods between Asian and Non-Asian Stations.

### Contest Period

1. Phone: 48 hours from 0000 UTC June 19, 1982, to 2400 UTC June 20, 1982.
2. CW: 48 hours from 0000 UTC August 28, 1982, to 2400 UTC August 29, 1982.

### Bands

Amateur bands under 30 MHz.

### Entry Classifications

1. Single operator, 1.9 MHz band (CW only).
2. Single operator, 3.5 MHz band.
3. Single operator, 7 MHz band.
4. Single operator, 14 MHz band.
5. Single operator, 21 MHz band.
6. Single operator, 28 MHz band.
7. Single operator, multi-band.
8. Multi-operator, multi-band.

### Exchange

1. For OM stations: RS(T) report plus two figures denoting operator's age.
2. For YL stations: RS(T) report plus two figures "00 (zero zero)".

### Restrictions on the Contest

1. No contact on cross-band.
2. For participants of single operator's entry: Transmitting two signals or more at the same time, including cases of different bands, is not permitted.
3. For participants of multi-operator's entry: Transmitting two signals or more at the same time within the same band, except in case of different bands, is not permitted.

### Point and Multiplier

Point: Perfect contact with Asian stations (excluding US auxiliary military radio stations in the Far East, Japan: KA stations) will be counted as follows:—

- 1.9 MHz band — 3 points.
- 3.5/3.8 MHz bands — 2 points.
- Other bands — 1 point.

Multiplier: The number of different Asian Prefixes worked on each band. According to the WPX rules.

### Scoring

The sum of the contact points on each band x the sum of the multipliers on each band.

### Instructions

Please use a log sheet form (and use a separate sheet for each band). Please keep all times in UTC.

Please fill in the blanks of "multiplier" by countries or prefixes, only the first time on each band.

### Awards

For both Phone and CW, certificates will be awarded to those having the highest score in each entry in proportion to the number of participants from each country.

The highest scorer in each Continent of the single operator multi-band entry will receive a medal and certificate from the Minister of Posts and Telecommunications of Japan.

The highest scorer of the multi-operator multi-band entry in each Continent will receive a medal.

### Reporting

Submit a summary sheet and logs of only one classification.

Both log and summary sheet must arrive in JARL, PO Box 377, Tokyo Central, Japan, on or before the following dates:—

- Phone: September 30, 1982.
- CW: November 30, 1982.

### Disqualification

Violation of the contest rules. False statement in the report. Taking points from duplicate contact on the same band in excess of 2 per cent by the total.

### Announcement of the Results

Phone: About February 1983.  
CW: About April 1983.

### Countries List of Asia

A4, A5, A6, A7, A9, AP, BV, BY, CR9, EP, HL/HM, HS, HZ/7Z, JA-JR, JD (Ogasawara Is.), JT, JY, OD, S2, TA, UA/UK/UV/UW9-0, UD6/UK6C, D, K, UF6/UK6F, O, Q, V, UG6/UK6G, UH8/UK8H, UI8/UK8-A-G, I, L, O, T-Z, UJ8/UK8J, R, UL7/UK7, UM8/UK8M, N, VS6, VS9M/8Q, VU, VU (Andaman and Nicobar Is.), VU (Laccadive Is.), XV, 3W, XW, XZ, YA, YI, YK, ZC4/5B4, 1S (Spratly Is.), 4S, 4W, 4X/4Z, 7O (S. Yemen), 8Z4, 9K, 9M2 (West Malaysia), 9N, 9V (Singapore), (Abu Ail).

You may have contest results by enclosing one IRC and SAE with your log.

### SARTG RTTY CONTEST

Three periods GMT: 0000-0800 and 1600-2400 Saturday, August 21, 0800-1600 Sunday, August 22.

This is the 11th annual contest sponsored by the Scandinavian Amateur Radio Teletype Group. Use all bands 3.5 through 28 MHz. The same station may be worked on each band for QSO and multiplier credit.

### Classes

Single operator, multi-operator single transmitter and SWL.

### Exchange

QSO No, signal report.



### Points

QSOs with own country, 5 points. With other countries on same continent, 10 points. With other continents, 15 points. The US, Canada and Australia call areas count as separate countries for scoring.

### Multiplier

Each DXCC country and each W/K, VE/VO and VK call area. A multiplier will not be considered unless the claimed station appears in at least five logs, or a log is received from that station.

### Final Score

Sum of QSO points from all bands times the sum of the multiplier from each band.

SWLs use same scoring but based on sum of stations and messages copied.

### Awards

Certificates to the top scoring stations in each class in each country and each call area of the US, Canada and Australia.

Use a separate sheet for each band, and include a summary sheet showing the scoring, comments, and other essential information, and your name and address in block letters.

Logs must be received by October 10th and go to: SARTG Contest Manager, PO Box 717, DK 8600 Silkeborg, Denmark. ■

# Special Notice

## Equipment Review

Equipment reviews in Amateur Radio are designed to assist the would be purchaser of new amateur equipment in making a comparison with the many different types and makes currently available on the market.

In all cases, the reviews are conducted with one major objective in mind — how does it operate?

We do not profess to carry out major technical laboratory tests, as that is beyond the Institute's resources at the present time.

Further, most of the equipment reviewed is made available by the courtesy of Australian distributors or agents and is usually only in the Institute's possession for two or three days at the most.

Therefore, our reviews are conducted from an "operators" point of view only by highly experienced amateurs, and with whatever test equipment which may be available to the reviewers at the time.

Considering these restrictions, readers should therefore appreciate that individual preferences must also be taken into account when selecting new equipment, whether or not it has been reviewed in AR.

# INTERNATIONAL NEWS

### HONG KONG

A member advises that a visitor's licence may now be obtainable in Hong Kong. Further details are awaited.

### GENERAL

IARU Region 2 Intruder Watch has observed several new intruder signals of the "hit-and-run" variety in NW USA. These are heard for a day or two, disappear, then re-appear on the same frequency weeks or months later.

The International Amateur Radio Club, which controls the use of the 4U1TU station complex, announces that casual visitors (accepted as technically competent) may operate 4U1TU on payment of 10 Swiss Francs (30 Swiss Francs for contest operations). It will cost 30 Swiss Francs to join the club as an annual member.

Solomon Islands amateurs have now been authorised to use the band 7.100 to 7.300 MHz.

There are now 21 amateur radio postage stamps issued in various countries — see AR May 1980. ■

\* \* \*

We were in QSO with a K7 the other day and he said his clock fell on the floor. We asked him if the clock stopped. His comment was: "Of course it did! You didn't think it would go right through the floor, did you?"

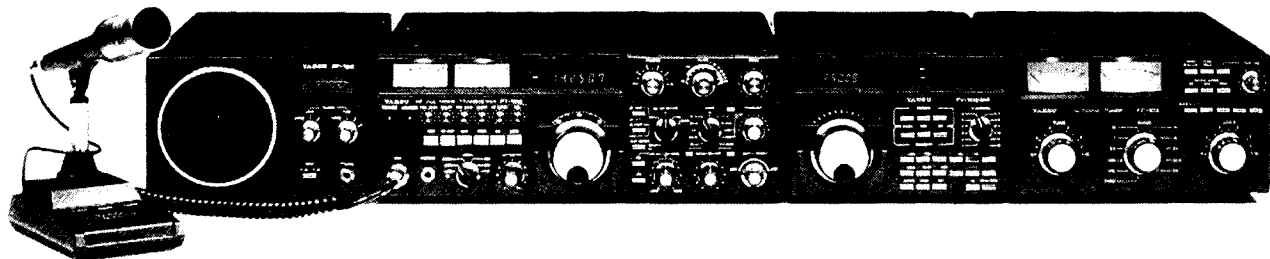
(ARNS Bulletin) ■



A novel award, presented to Brian VK5CA, by the late Frank Bentley VK5MZ some 30 years ago.

(Submitted by Brian's XYL, Marlene VK500)

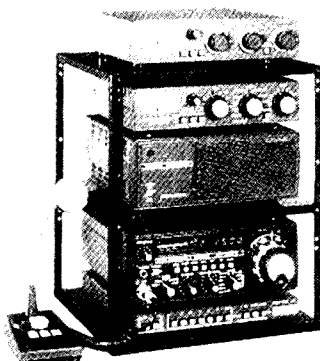
# Andrews Communications Systems PRESENTS YAESU'S FT-102 "Super DX'er"



SP-102 . . . \$999    FV-102DM FC-102 . . . \$275

The FT-102 uses 3 x 6146B's in P.A. for -40dB IMD @ 100W on 14MHz. Receiver dynamic range is typically a superb 101dB @ 0.25µV on 14MHz! 160-10m inc. WARC. Shift/Width, peak/notch tuning, N.B., and much more . . .

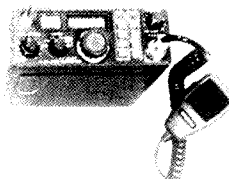
## YAESU



- FTV-707R . . . **\$135** (RRP \$139)  
VHF/UHF TRANSVERTER
- FC-707 . . . . . **\$138** (RRP \$145)  
ANTENNA TUNER/WATT METER
- FP-707 . . . . . **\$169** (RRP \$170)  
AC POWER SUPPLY/SPEAKER
- FT-707 . . . . . **\$695** (RRP \$765)  
HF SSB/CW/AM TRANSCEIVER
- FV-707DM . . . **\$249** (RRP \$259)  
DIGITAL 12 CH. SCANNING VFO

WHY SHOULD YOU PAY MORE?

FT-290R . . . . . **\$345** (RRP \$385)    **YAESU**



FM/SSB/CW 2M 2.5W Portable  
10ch PLL, LCD Readout, Scanning, use Jumbo HP-50V for 50 W O/P

- FRG-7700 Full cov. RX \$489
- FRG-7700 Memory unit \$120
- FT-780R 70cm all mode \$599
- FL-2100Z 1-2kW linear \$550
- FT-230R Compare to KDK \$349
- FT-680R 6m all-mode \$489
- FT-480R 2m all-mode \$499
- FT-ONE New version due soon . . .
- FT-790R 70cm all-mode coming!
- FT-208R 2m h/hold \$298

Plenty of YAESU in stock.    12 Months Warranty on our YAESU

## SUPERB YAESU FT-107M/DMS SERIES



- FT-107M/DMS/WARC/AC \$1150 (RRP \$1228) inc. YM-38
- FV-107 \$199
- FC-107 \$199

Also FT-107, without memory, current model with WARC, in stereo \$795 (without AC)

BEWARE OF THOSE OFFERING NON-WARC RADIOS!



- YAESU "SWL GEAR" FRA-7700 \$55 ACTIVE ANTENNA
- FRT-7700 \$71 ANTENNA TUNER

- FRG-7700SW \$459 (RRP \$489)
- FRV-7700 \$110 VHF CONVERTER "B" N.B. 3AM Bandwidths

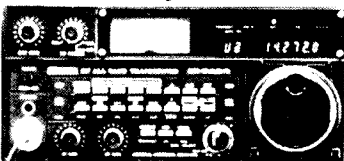
Covers 2-29.999 MHz. AM/SSB/FM/CW

"SPECIAL PACKAGE OFFER"

FRG7700SW + memory = \$569

## ICOM

- IC-720A \$1,175
- IC-2KL \$1,279
- IC-AT500 \$449
- IC-505 \$425
- IC-560 \$485
- IC-740 \$965



• IC-720A HF SSB/CW/AM/FSK Transceiver with General Coverage Receiver Section

12 Months Warranty on our ICOM

ICOM Communications Receiver Due Soon!

- KYOKUTO (KDK) FM-2025A MKII, only . . . . . \$275
- Why pay around \$100 more for similar 25W 2m FM mobiles?
- BELCOM LS-102L All mode 10m mobile 10W . . . . . \$445
- DAIWA CNA-2002 2.5kW automatic tuner . . . . . \$299
- Also DRAKE R4C comms. receiver (trade-in) only . . . . . \$250
- KENWOOD TS-930SA with auto tuner RRP . . . . . \$1,575

Save \$\$\$, Fast airfreight shipments — Why wait and pay more?

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# Andrews Communications Systems

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Exclusive 5kHz steps on VHF

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30 ch. scanner AC/DC

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Lockout, AM/FM, AC/DC, Priority, Delay etc

AMAZING 2.5kHz STEPS ON AUSTRALIAN LOW BAND & HIGH BAND!  
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## JUMBO LINEAR AMPLIFIERS

### HP600A HF 600W O/P LINEAR

12V DC at 40 AMP av, 4/7/10W drive switch 300W AM/CW, 600W SSB output, 3-30 MHz, driver stage, pre-amp meter, protection, fan cooled, TVI filter, uses 2SC2097 driving 4 x 2SC2904's in push-pull/parallel.

**\$595**

HP-50V, 2m, 3W to 50W ..... \$129! HP-80V, 2m, 10W to 80W..... \$179!

### HP240DX HF 240W O/P LINEAR

12V DC at 15 AMP av, 5/10W drive switch, 120W AM/CW, 240W SSB output, 2-30 MHz, variable gain, RX pre-amp. Uses a pair of 2SC2904 110W transistors

**\$225**

### HP200T HF 400W O/P LINEAR

12V DC at 30 AMP av, 5/10W drive switch 200W AM/CW, 400W SSB output 3-30 MHz, driver stage, RX pre-amp, TVI filter. Uses 2SC2097 driving 4 x 2SC2097's

**\$395**

### FACTORY-DIRECT IMPORTER OF HIGHEST QUALITY

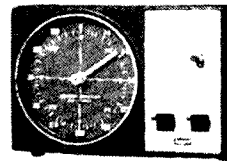
|                                                                                        |       |
|----------------------------------------------------------------------------------------|-------|
| KEN KR-400 Medium Duty Rotator, 28V.....                                               | \$139 |
| KEN KR-400RC Medium Duty "Round Controller"<br>Rotator, 400kg/cm rotation torque ..... | \$169 |
| KEN KR-600RC Heavy Duty Rotator, 600kg/cm.....                                         | \$239 |
| KEN KR-2000RC Extra Heavy Duty, 2,000kg/cm.....                                        | \$449 |

Attractive Control Box & Top/Bottom Mast Clamps Included

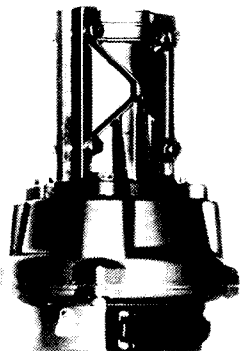
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**CHIRNSIDE** CE-33 \$249, CE-35DX \$299, CE-35LX \$339, DUOBANDERS & VERTICALS IN STOCK.

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Mike Bazeley VK6HD  
8 James Road, Kalamunda WA 6076

### GREMLIN CORNER

Apologies are due to Tom VK4NUN. Tom earned "open" DXCC certificate No. 208. Unfortunately in June AR this was listed as having been earned by VK3NUN. Your scribe cannot lay the blame on the printer, my error entirely.

### SUPERSEDED AWARD

The rules (published in AR November 1981) of "The Western Keybaud Bashers' Award" have now been superseded and the new format is as follows.

### THE WESTERN KEYBAUD BASHERS' AWARD OF PERSEVERANCE

The Western Keybaud Bashers' Award of Perseverance is offered to all amateurs or SWLs who have contacted or, in the case of SWLs, printed ten Western Australian Amateurs on RTTY on any band. It is hoped to encourage the seeking of VK6 amateurs by other States and possibly by other countries. Also available will be various endorsements, such as all on one band, QRP working, etc.

### RULES

1. Contacts shall be with WA amateurs only.
2. The only mode permitted is RTTY.
3. Only one contact per WA station is allowed to count towards the award.
4. All contacts must be two-way RTTY contact except for the SWL class. Crossband or crossmode contacts are not eligible.
5. All contacts shall be listed showing date, time and frequency. Log extracts and/or printouts shall be included with the award application. In lieu of this, claims can be certified by any two other amateurs.
6. No fee is payable for the issue of these awards.

### APPLICATIONS

All applications and enquiries should be directed to the Secretary, Australian Amateur Radio Teleprinter Group, 91 Arlunya Avenue, Cloverdale, W.A. 6105.

### DESCRIPTION

This award is printed in black with ochre borders on beige paper. The award measures 250 mm x 180 mm.

### HONG KONG AWARDS

#### NINE DRAGON AWARD

One contact with a country in each of the following 9 zones 18, 19, 24 to 30 inclusive.

Contact for zone 24 must be a VS6.

Stations within the 9 zones require 2 contacts in each zone, with 2 VS6 contacts.

Contacts after 1st January, 1979, only valid.

Fee: US\$3, A\$3, £1.50 postal order, or 25 IRCs.

#### FIRECRACKER AWARD

Six contacts with different VS6 stations.

Stations in zones 18, 19, 24 to 28 require 10 contacts with different VS6 stations.

Contacts after 1st January, 1964, only valid.

Fee: US\$2, A\$2, £1 postal order, or 10 IRCs.

### USUAL CONDITIONS

Certified log extracts only, no QSL cards required. Payment to be made in cash or cheques payable to HARTS. If sending postal orders please leave payee blank. Claims to Awards Manager, HARTS, GPO Box 541, Hong Kong.

The Firecracker Award is a beauty. The award is printed in black and gold on a brilliant red paper.

### NEWS FROM VERON

The VERON, the official Dutch amateur radio body, produce a Dutch Award and Certificate Guide, printed in English. Though your scribe has not seen a copy of this guide, further information can be obtained by writing to VERON, PO Box 9, 1000 AA Amsterdam, The Netherlands.

Incidentally, any profits made from the sale of this booklet will go towards purchasing a new transceiver for the club station PA0RCA.

## The Western Keybaud Bashers Award Of Perseverance

awarded by  
THE AUSTRALIAN  
AMATEUR RADIOTELEPRINTER GROUP

This is to confirm that

*Sample Only.*

has upheld the high ideals and traditions of amateur radio and has shown great perseverance in attaining

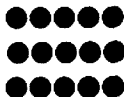
the working in two-way contact no less than ten Western Australian amateurs using radioteletype

or the printing of no less than ten Western Australian amateurs using radioteletype

and therefore has earned the right to hold this award.

Well done.

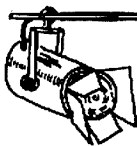
Endorsements:



President .....

Secretary .....

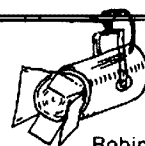
Date .....



# SPOTLIGHT

ON

## SWLing



Robin L. Harwood VK7RH  
5 Helen Street, Launceston, Tas. 7250

### CONTEST TIME

Well, it is Remembrance Day Contest time once again. Every August the Wireless Institute of Australia holds a contest in memory of those Amateurs who made the Supreme Sacrifice in the Second World War. This year, the "RD" will be held from 0800 UTC on August the 14th until 0759 UTC on the 15th of August. Stations within Australia will be endeavouring to contact as many stations as possible in Australia, New Zealand and Papua-Nuigini over that 24 hours period. Many SWLs will be assisting as operators or log-keepers in clubs or with individual amateurs, and some SWLs will be entering the Section open to listeners. They will endeavour to log stations participating in the Contest. I do not intend to be repetitious, as the various rules and regulations can be found elsewhere in the Contest section of this magazine. I wish all SWLs the best of luck, and look forward to seeing the results later on.

While we are on contests, it pays to check some of the amateur radio competition rules as sometimes there is a section for receiving only. Check the relevant rules and regulations carefully. As well, some awards are also available to short-wave listeners. However, the onus is on the enthusiasts to provide verification that they did log the station(s) by the production of log entries and/or QSL or verification cards to be certified by responsible individuals. The necessary qualifications are to be found listed in the details of the Award and how it may be earned.

### DISCONTINUED MODELS

I have recently heard that two well known and popular receivers are no longer being produced. One of them, the Yaesu FRG-7, can be virtually found throughout the world. The other, the Barlow-Wadley XCR-30, was probably the forerunner for later models, and was certainly a pioneer in receiver design and portability. Ironically, it was the Japanese manufacturers who exploited the Wadley Loop principle, and developed it further into the Phase Locked Loop (PLL), so much that the Barlow-Wadley organisation was not able to compete commercially with the pricing and marketing policies adopted by the Japanese mass production factories. The XCR-30 was manufactured within South Africa. It is not clear if they are intending to produce any new and updated models to replace it, but the opinion is that they will be concentrating on developing military electronics software for the local region, leaving the domestic commercial field.

Also the Radio Shack/Tandy Corporation have discontinued stocking the DX 302 and DX 200 model receivers due to poor public response. So, presumably, the prices of these will come down as they clear their stocks to concentrate on more

profitable lines such as computers and hi-fi. The ANARC Newsletter states that Tandy will continue to stock the basic receiver without any frills — the DX 100. Yet they did have a good receiver in the DX 160, despite its shortcomings. It can still be found in many shacks, but I have not seen many of the DX 302 models about.

### NEW RTTY

HAL Communications Corporation of Urbana, Illinois, USA, has recently introduced a new receive-only RTTY terminal. The CWR-670 Telereader is a compact unit designed for Baudot and ASCII RTTY, as well as providing a Morse readout with in-built RTTY and Morse demodulators and video generation circuits. It requires a 12V DC power source, however the current consumption figures are not supplied. The manufacturer claims it is suitable for portable use and has 16 lines of 32 characters per line. All three common shifts (170, 425 and 850 Hz) are provided, plus high or low tones, as well as an output in parallel to connect with a printer for ASCII.

A terminal for transmission as well as reception of RTTY and CW is also available from the same corporation called the CWR 685A. It too, has provision for the three standard shifts, together with MORSE and ASCII with a 20 line by 32 characters/line green display CRT. I believe that the above terminals are available from one of the advertisers of this magazine, to which you could refer if you require any further information.

### POSITIVE IDENTIFICATION

A few months ago I mentioned that I was unable to identify, readily, two stations I had not encountered before. Now I am able to pass on that they have now been positively identified. The first station on 9.027 MHz at 0500 UTC is a Clandestine broadcasting to Iran in Farsi, the language of that country. Called Radio Vatan, it is rumoured to be based in Cairo and is supporting the cause of the deposed Shah. It is operating deliberately close to a Teheran outlet on 9.022 MHz. It is at fair to poor strength and it is extremely difficult to elicit any I/Ds because the US Strategic Air Command also utilize this channel as part of their world-wide communications network on the quarter-hour overriding Radio Vatan's I/D announcements. Other clandestines are reportedly broadcasting to Iran from sites in the USSR or the Mid-East, yet their frequencies and operational status is variable.

The second unidentified station is in South America. It is R Dif Nacional dell Colombia in Bogota. I was very fortunate to observe this at 2330 UTC on 12.269 MHz, when they broadcast educational programmes, yet the signal is much improved from 1030 and it was possible to log and record a clear I/D. It can be classed as a

utility station since it is not on an allocated broadcasting band and is on LSB. However, I was also fortunate to hear R Dif Nacional on 15.337 MHz AM on one day when signals from Europe were down (June 14th) at 0420 UTC with a concert programme by the Bogota Philharmonic Orchestra and a World News Summary, both in Spanish naturally. Power on this channel is 25 kW according to the WRTH, but it is notorious for variation in frequency.

Lately, Central and South American stations on the 49 and 60 metre band have been coming in quite strongly. Radio Reloj in Costa Rica is being heard here on two frequencies, 6.006 and 4.832 MHz. It is only a kilowatt yet puts in quite a respectable signal. At 0608 UTC, I was able to hear both channels, yet 6.006 MHz was copyable for longer as it was observed as late as 0935. Other Latins included Radio Super on 6.065 MHz at 0632 in Spanish, Radio Cadena Nacional in Granados, Colombia, on 6.160. Recording of the World Cup soccer match between Italy and Peru was heard from Radio America in Lima on 6.010 MHz at 1056 UTC.

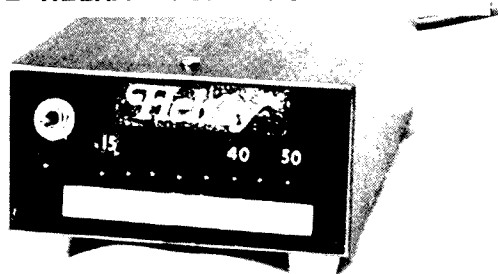
Other 60 metre channels included Radio Lara on 4.800 at 1011. It signed on at 1001 with the National Anthem of Venezuela, followed by a frequency list and I/D in Spanish. The WRTH said it was located in Barquisimeto and is rated at 10 kW. There is heavy RTTY QRM on the channel making reception difficult at times. The other presumed station is Radio Libertad de Junin in Peru on 5.040 MHz at 1015 UTC. We didn't have sufficient material to make a positive identification due to congestion around the frequency.

### CONCLUDING

In conclusion, I would like to recount an amusing sidelight when I was DXing with a friend. We came across an unidentified station on 11.610 MHz at 0129 UTC on the 19th of June. The station was playing rock and popular music for over an hour without any announcement or I/Ds. Our first thought was that we had come across one of those European "FREE" radio stations, as the only outlet we could find listed was not supposed to be operational at that time. We checked the External Service of that known user but the programmes were different. So we waited patiently. At last at 0200 we heard the I/D and it was Kol Israel in Jerusalem. We should have deduced by the World News that Israel's invasion of Lebanon would mean that the Home Service would be staying on the air to pass the latest news on the situation. The non-appearance of the announcers being due presumably to the observance of the Jewish Sabbath.

Well, that is all for this month. Until next time, the best of DXing and 73. Robin. ■

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W0804

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- LCD Display, 5 memories plus scan
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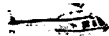
- All badges \$2.00 each plus 30c postage.

W0802



# COMMERCIAL CHATTER

## AROUND THE WORLD BY HELICOPTER



In August, Dick Smith, amateur, owner of a well known electronics chain and adventurer of note, will set off from Fort Worth, Texas, in a Bell Jetranger Helicopter to fly around the world.

Dick has radio equipment on board and anticipates being on air every day talking to Australia.

### VK2DIK HELICOPTER MOBILE EQUIPMENT

Collins HF 220 upper sideband only.

### FREQUENCIES

80 Metres — 3.75 (USA and Canada contacts).

40 Metres — 7.060.

20 Metres — 14.250, 14.140\* (Canada and Australia).

15 Metres — 21.285, 21.265\*

\* Secondary frequencies.

### APPROXIMATE DATES

Fort Worth: 5/8/1982.

New York: 8/8/1982.

Greenland: 14/8/1982.

Iceland: 15/8/1982.

United Kingdom: 19/8/1982.

London to Sydney: 12/9/1982 to 3/10/1982.

Sydney to Fort Worth: Dates to be announced.

Flights will take place during local daylight hours, normally in the morning.

## IN SEARCH OF NEW AMATEUR PRODUCTS



Greg and Martin next to one of MFJ's production lines. Stacked up on the line are some MFJ-989 3 kW Roller Inductor Tuners.

Recently Greg Whiter VK3CA, Managing Director of GFS Electronic Imports in Melbourne, completed a trip to both the United States and Japan.

During his visit to the USA Greg visited a number of the companies that GFS represent here in Australia. Included in this list was MFJ Enterprises, manufacturers of a wide range of amateur products.

MFJ Enterprises is located at Starkville, Mississippi, which is a small town centred around Mississippi State University. It has a population of 15,000 people which

doubles during the months the University is in session.

The Company was started a few years ago by Martin F. Jue (hence the company name MFJ), then a lecturer at Mississippi State University. His first product was an audio filter. Since those times MFJ Enterprises has grown very rapidly to the point where they are now virtually a self sufficient manufacturing organisation. On their premises they manufacture everything from the cases that their products are housed in to their own typesetting and printing.

Well known in Australia is MFJ's wide range of antenna couplers, electronic keyers and audio filters. Recently out of MFJ's research and development section is a new range of video products which could hold a wide interest for those amateurs active on ATV.

## UNDER NEW MANAGEMENT



Photograph shows Keith waiting to serve

*Photo courtesy VK3JH.*

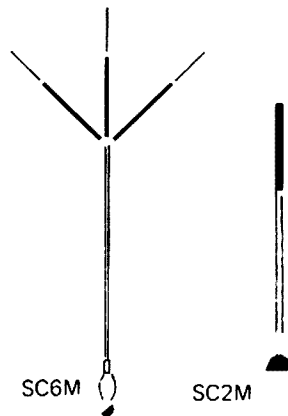
Many people would be familiar with the name Keith Haslam VK3ACE. Keith has been employed by Eastern Communications Centre in Victoria for many years. Keith was sub-contracting service technician at first but when the owner Fred Mackiewicz VK3ZZN established his own service centre Keith was appointed Service Manager.

Keith has recently purchased the firm and is rapidly expanding the range of goods and services for his fellow amateurs throughout Australia, but he will be continuing to service and sell at reasonable prices the wide range of amateur equipment that Eastern has been reputed for.

If one calls into Keith's shop in Box Hill South these days one will possibly find the shop full of workmen, as Keith is remodelling the premises and installing more shelving to further display his growing range of equipment and accessories. Also, as an enthusiastic "computer buff", Keith is hopeful that he may soon have a range of computer accessories for sale.

Further information may be obtained by calling in for a chat with Keith or his staff at 168 Elgar Road, Box Hill South 3128, or ring (03) 288 3107.

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|--------|------------|
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| HA615T | 21 - 21.45 |
| HA620T | 14 - 14.35 |
| HA640T | 7 - 7.15   |
| HA680T | 3.5 - 3.70 |

W0819

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The MDK-17 RTTY Mod/Demod Terminal Unit is designed for HF and VHF radio and/or commercial use at baud rates of 45 to 50 with a shift of 170 Hz, and with some component changes other baud rates and shifts can be accommodated.

With 10 ports for all combinations of TTL and high voltage 20-60 mA send-receive systems, the MDK-17 has a unique design for simple transceiver, teletype or computer terminal hook-up. An open collector output allows for direct keying of HF transceivers.

To attain excellent temperature stability the tone generator uses an XR2206 IC and state-of-the-art circuitry throughout, including an XR2211 IC which combines both limiter and active bandpass filter in the one package. Accurate setting of tone frequencies and demodulator centre frequency is provided for by using 15 turn trimpots in these critical areas.

Other features of the MDK-17 include LEDs to indicate transmitted tone and correct receiver tuning, provision to invert signal sense in both send and/or receive modes, auto start output available to drive the TTL circuitry. The power source is derived from a single +12 volt supply.

The MDK-17 is available fully assembled, aligned and tested or as a complete kit supplied with a comprehensive easy to follow set of assembly instructions. (Approximately two hours is all that is required to assemble and test the kit.)

The MDK-17 is available from GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. Phone (03) 873 3939. Telex: 38053 GFS.

just been released. The antennas are designed to provide economical and effective operation for point to point communication applications.

The yagis, manufactured from high grade seamless aluminium tubing, feature a 4 per cent bandwidth at VSWR of 1.5 : 1 and VSWR 1.3 : 1 at centre frequency. A cable tail to N type female termination is provided.

Also released is the RF control model Y415PT, which fully conforms to draft specification RB234C.

It is a 15 element yagi with multi-element reflector. Side-lobe levels at any angle greater than 55 degrees from the centre of the main lobe will be at least 17 dB below the forward gain.

The antenna can be supplied for end mount or with a centre mount elbow.

For further information about this and other antenna information, contact Scalar Industries, 20 Shelley Avenue, Kilsyth 3137. Phone 725 9677. ■

## STANDARD 2M METRE MULTI-MODE PORTABLE

Just released from Standard Radio, the communication division of Marantz Japan Inc., is a new multi-mode 2 metre transceiver.

The new transceiver, known as the C-58E, has many outstanding features. The main one is the size of the unit, which is excellent for portability. Some of the other features are 5 memory channels with frequency and mode storage, liquid crystal display, RIT for SSB, built-in battery or external power source, noise blanker, ± 600

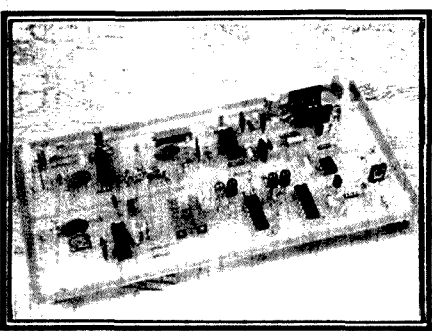


kHz repeater offset, memory or band function, high sensitivity cascade FET RF amplifier, 1 watt RF output on FM and SSB, coverage up to 4,000 channels from 144 to 148 MHz, and a wide choice of channel steps (25 kHz, 12.5 kHz, 5 kHz, 1 kHz and 100 Hz).

The C-58E weighs 1.25 kilograms, without batteries, and measures 129 (W), 52 (H) and 190.5 (D) millimetres and comes complete with carry-strap, rubber duckie antenna and mike containing a charge switch.

The first shipment of C-58Es as anticipated arrived around mid-June and is expected to sell like "hot cakes".

For further details contact the distributor, GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. ■



## DIRECTIONAL ANTENNAS

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# BOOK REVIEW

Jack O'Shannassy VK3SP  
23 McGorvans Road, Donvale, 3111

## HF ANTENNAS FOR ALL LOCATIONS

By Les Moxon G6XN

At last the long-awaited book on HF antennas has arrived — and it has been well worth waiting for. Regular operators on the 20 metres Long Path to England will have heard Les for many years now talking about antennas and carrying out tests on his various designs with the aid of his many friends in VK. All who have listened to him will have formed a high opinion of his knowledge on this, often controversial, subject and will have become aware of his many unorthodox views on the subject.

An indication of the wide-ranging nature of the book can be gleaned from a perusal of the chapter headings:—

TAKING A NEW LOOK AT HF ANTENNAS.  
WAVES AND FIELDS.  
GAINS AND LOSSES.  
FEEDING THE ANTENNA.  
CLOSE SPACED BEAMS.  
ARRAYS, LONG WIRES AND GROUND REFLECTIONS.  
MULTI-BAND ANTENNAS.  
BANDWIDTH.  
ANTENNA DESIGN FOR RECEPTION.  
THE ANTENNA AND ITS ENVIRONMENT.  
SINGLE ELEMENT ANTENNAS.  
HORIZONTAL BEAMS.  
VERTICAL BEAMS.  
LARGE ARRAYS.  
INVISIBLE ANTENNAS.  
MOBILE AND PORTABLE ANTENNAS.  
WHAT KIND OF ANTENNA?  
MAKING THE ANTENNA WORK.  
ANTENNA CONSTRUCTION AND ERECTION.

Most chapters are supported by a list of references from both amateur and professional sources for those who wish to pursue a particular subject in greater depth. Frequent credit is given throughout the text to contributions by other amateurs, including many VKs. Reference is frequently made to the antenna requirements for the new WARC bands.

The book, as the title indicates, confines itself to HF antennas, gives particular emphasis to the question of size, weight and cost reduction and qualifies the effect of these reductions on performance. This to my mind is the outstanding feature of the book. It effectively disposes of the often exaggerated claims made by antenna manufacturers and, in particular argues against the use of traps in multi-band antennas both because of the loss they introduce and because their use means that the full length of the lowest frequency elements is not used on the higher frequencies with a consequent (and unnecessary) loss of performance on the higher bands. The

author further argues that a reduction in size and weight often allows the antenna to be mounted at a greater height with an improved performance — again he qualifies his argument.

Another interesting and challenging approach relates to the important role seen for vertical beams, which the author considers have not been suitably covered in other literature. In locations where height restrictions are severe, he considers that the improved vertical designs he proposes, together with simpler and more efficient methods of feed, can result in reasonably competitive DX performance. This approach, together with his claim that the poor reputation of verticals as receiving antennas, is unwarranted and due mainly to noise pick-up by incorrect transmission line and radial system design will be of interest to users of all HF and MF bands, particularly for those interested in the lower frequency bands. Further, he argues that not only are extensive radial systems not necessary, but that improved performance can be obtained using smaller ground systems of appropriate design.

In keeping with the title, the adverse environmental conditions under which many amateur antennas must operate are considered and methods recommended for minimising the adverse effects. In the same chapter, information is given on how to take advantage of favourable sites such as sloping ground and seaside locations, including formulae and graphs which qualify these factors. Suggestions on the choice of sites for mobile and portable operation are also given.

In the experience of the reviewer, this is the first book on HF antennas which marries the needs of the amateur to the extensive professional literature on the subject which, in general, takes little account of the need to conserve size, weight and cost, nor the need to operate on several amateur bands from one antenna. In particular, much of the earlier work on reduction in element size for the LF and MF bands has been translated to HF and adapted to meet the specific needs of the amateur service.

Those operators who have spoken on-air to Les over the years will have heard him refer frequently to his ideas on "chordal hop" as an explanation of the very good propagation which is so frequently observed (albeit for short periods) on the 20 metres Long Path between Australia/New Zealand and the United Kingdom. Calculations are given which show that the attenuation under these conditions approaches that of free space. One of the few errors in the book appears at this point but

fortunately it does not invalidate the argument.

Having referred to a few of the many good features of the book, in all fairness to the widely varied interests of AR readers, I feel that I should refer to some things that the book is not. It is not an "antenna cook-book" with a series of "how-to-build" articles. While there are some detailed constructional designs, the main emphasis is not on "how" but on "why", together with the conditions which need to be met to achieve good results — the details are left to the ingenuity of the reader. Most of the designs given have been tried and tested by the author or his colleagues, but others are theoretical or even speculative and their practical implementation and testing are left to the individual constructor. On the other hand, many of the designs are highly novel and intriguing and would be well worth pursuing by the experienced amateur.

The book contains a sprinkling of mathematics which the author claims need not be followed to understand the text. However, there is no doubt that a careful following of the various equations and formulae helps in understanding the text. The maths are confined to the minimum necessary to cover the issues under discussion, requiring a knowledge of algebra, trigonometrical functions and complex numbers. Differentials, integrals and hyperbolic functions so frequently used in professional papers have been carefully avoided.

In summary, this book is one which every serious antenna experimenter and those interested in HF propagation should have. It may not be so valuable to the beginner, but a serious student would undoubtedly learn much from a careful perusal of it.

The book is published by the RSGB and follows the format and style of the recent edition of the popular RSGB "Radio Communication Handbook". Its 260 pages are very well illustrated with clear diagrams, tables, graphs, circuits and a few black-and-white photographs. At an English price of £5.00 (Australian price not yet known) it is excellent value. Copies will be available shortly through the Divisions and Magpubs, and no doubt it will appear in the technical book shops in due course. ■

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Eric Jamieson VK5LP  
1 Quinns Road, Forreston, SA 5233

## AMATEUR BAND BEACONS

Refer to list in June issue.

A letter from Karl VK6XW from Albany, WA, advises he has now been appointed beacon officer for the Southern Electronics Group in Albany, and submits details of changes being made to their beacons.

The original 6 and 2 metre beacons had to be closed down at the request of "the landlord" and arrangements have been made to open the beacons again using a site at the old whaling station right at the water's edge about 10 metres above sea level, with a good take-off to the east and north. There have been some problems with power supplies but these are being ironed out.

Changes being made are for new frequencies of 52.465 MHz into a coaxial ground plane with 10 watts, 144.465 MHz with 6 watts east into a six element beam and 4 watts north into a 4 element beam, 432.465 MHz with 10 watts with the antenna undecided yet. In addition there will be a beacon on 28.266 MHz from a converted CB set into a vertical dipole. All crystals have been ordered but the 432 and 28 MHz beacons are not yet ready.

The original call sign of VK6RTW will be retained for all the beacons from a common keyer with 800 Hz downshift FSK. At the time of writing the beacons are not on the air but advice will be sent as soon as they start.

That's a very comprehensive array of beacons from one of the more prime areas of Australia so on behalf of the amateurs of Australia I wish the Southern Electronics Group and its band of workers every success. Incidentally, the above frequency changes conform to the Australian band plan.

Although not strictly beacon news but of considerable interest is the news from Joe VK7JG of VK7RAB, a UHF repeater for Launceston operating on 433.625 MHz input and 438.625 MHz output, power 10 watts with a vertical antenna having 6 dB gain. The unit is a modified Icom IC400 mobile, set up by Joe and Phil VK7JJ. Initially it is being located at "7EX" hill, about 7 km east of Launceston, and could hopefully act as an indicator of possible 70 cm openings between Tasmania and the mainland.

Gil VK3AUI reports Rob VK3XQ has been running a manned keyer or CQer often around 52.036 MHz and on 2 metres, and has stirred up quite a bit of DX as a result. If you call Rob he will be available to answer you, and would welcome any reports.

## THE SIX METRE SCENE

Band conditions have not been over bright, which is not unusual for the time of the year. A late report to hand from Joe VK7JG advises as long ago as 17/4/82 at 2230Z he put out a call on 52.050 without really expecting any replies and was surprised to be answered by W5FF on CW, who was 519 at Joe's QTH and gave a return report of 2 x 2. Three days later a QSL card arrived and the distance turns out to be about 300 km further than XE1GE which, although not an Australian record, may well be for Tasmania.

From Bill W3XO of "The World Above 50 MHz" in QST comes a report of good spring (US) propagation when, during April W5UWB in Texas worked six new countries to bring his tally to 43 confirmed. Latest workings include LU3EX, LU8YYO, LU4VBY, 3D2JT, PJ9EE, HC1MD/5, OA4AWD, ZL1MQ, A35JT, FO8DR, AH8A, H44PT, ZL1AKW, FK8CR, VK2DDG.

WA8LLY/6, from Santa Rosa, north of San Francisco, reports 3rd April as the best day he has ever had for hearing South Pacific contacts. After an LU opening, Steve said FO8DR and 3D2JT appeared, followed by YJ8RG, H44PT and T32AB. Signals were so strong on 50 MHz he decided to try 52 MHz and heard VK9NS in contact with VK4AUV. At this time N6CT worked 14 VK stations.

Other snippets of news on 6 metres include Peter VK6ZDY working JAs on 10/6 and on 11/6 at 0400Z Channel 0, Brisbane, was very strong . . . VK3AUI and others working to ZL on 18/5 . . . 6 metres has been opened up to T calls in New Zealand recently and stations already active in ZL4 on that band now include ZL4CN, 4MB, 4LV, 4LT, 4KB, 4HR, 4LH, 4THO, 4TGT and 4TBN . . . JA4MBN had a field day on 22/3 when he worked VP2VGR, W2HOY/KP4, WD4IYS and FM7AD, quite an effort for one day's operating!

## 6 METRES FROM VK5KK

The month of May was rather quiet compared to April with respect to long-haul DX (or any other DX!). However, the mid-winter Sporadic E season has turned up this June, somewhat better than seen for some years. To top that off there has been some JA openings to VK5 and VK6, at least on several occasions during June.

On 10/6 VK6ZDY Perth worked JA on 52 MHz around 0900Z. 11/6 VK6RO heard VK5VF beacon on 53 MHz at 5 x 7-8 at 0700Z. Also hearing Channel 0 sound (possibly Melbourne). On 12/6 very good openings between VK3 and VK4, VK5 to VK2, then VK5 to VK4, 7 and VK3 on back-

scatter from 0230Z to 0400Z. K5ZRO worked VK3XX and VK3YTT on backscatter. VK4ZEI was 5 x 9 at this QTH using only 2 watts to a ground-plane. On 14/6 the band was open to VK2 then VK4 (Townsville) around 0300Z. At 0530Z VK6ZDY and VK6YU were both 59 + into the Adelaide area. Quite a bit of backscatter evident on local signals.

On 26/6 band open to VK2, 4, 6 from 0530Z to 0700Z to VK5. Interesting to note also on 14/6 VK6YU was copying Adelaide FM on 93 MHz at 0600Z. However, no signals evident higher up. Also from the west, Peter VK6ZDY mentioned that an experimental repeater is being tested at Tic Hill (same location as 2m repeater). At this stage it uses 600 kHz offset (53.2 MHz in and 53.8 MHz out). Power at the moment is 10 watts. Could be useful during the summer season. All of the above represents the openings I caught up with, not bad conditions for winter at all.

Also on 26/6 band opening on 50 MHz from VK5 to JA (all areas) at 0730 to 0820Z, but only JA8 on 52 MHz, 5 x 3 signals.

## THE TWO METRE SCENE

Heading the list of course must be the efforts of Steve VK4ZSH/4, who was sculling around the northern parts of Queensland and working JAs on 144 MHz! Details as follows — 4/5/82: 1032 to 1107Z four JA1s with JA1RJU being the first VK to JA1 contact. At the time Steve was located at Karumba near Normanton in the Gulf country. 6/5: 1034 to 1125Z worked 18 JA1s whilst 110 km south of Karumba. 7/5: 1047 to 1057Z, two JA1s and JA7OXL, the latter being the first JA7 to VK; location 250 km south of Karumba. 8/5: 1007 to 1047Z, 16 JA1s, four JA7s from Cloncurry. Very hard to work stations, such incredible dogpiles and severe QRM!

Congratulations, Steve, for making the effort to work these stations and indicating to the multitudes just what can be done on VHF if you try. Thanks to Lionel VK3NM for sending this news along from Steve.

Although a bit late, but nevertheless still of interest, is the report from Joe VK7JG who was working VK4KMD on six metres on 5/2/82 when they decided to try two metres and were delighted to exchange 5 x 5 and 5 x 3 reports. Joe was running 10 watts to two half-waves in phase on the side of his tower and 3 metres high! He also worked VK4XT on SSB, and other stations through VK4RDD, the Darling Downs repeater.

**BREAKING RECORDS IN NEW ZEALAND**  
From "Break-In" April 1982 comes a report of no less than five VHF records being

broken with details as follows: ZL1BJB and ZL1THG were located at Cape Reinga, the tip of the North Island, for the DX weekend of 30/1 and 31/1. The southern team were located at Mount Burnett and were headed by ZL2ARW, and contacts were made as soon as the 2 metre equipment was going. Signals were strong and soon signals were being heard on all bands. Careful alignment on 1296 MHz brought good signals both ways, and a one way signal on 2300 MHz. The same evening ZL1BG worked ZL2BW on 70 cm to extend the existing record, then on Sunday afternoon ZL1BJB worked ZL2BMA to further extend the record. Peter and team then drove further south to Westport then to Knights Point, again extending the distances.

The weather conditions on DX weekend were excellent for long distance contacts, even though not a great number of stations took part. After ZL2ARW and team left Knights Point they drove to Christchurch to try to work ZL2TWS located on Mt. Ruapehu, central North Island, this time via ATV. They were not successful but did work ZL2TAR.

A further record was broken when ZL2TWS worked ZL2ASF in Motueka on ATV over a distance of 383 km.

The records claimed were therefore:—

- 144 MHz: ZL2ARW to ZL1BJB 1050 km.
- 432 MHz: ZL2ARW to ZL1BJB 1050 km.
- 1296 MHz: ZL2ARW to ZL1THG 675 km.
- 2304 MHz: ZL2ARW to ZL1THG 675 km.
- ATV 440 MHz: ZL2TWS to ZL2ASF 383 km.

While still on the two metre scene, a report from New Zealand indicates G3VFX in Essex worked 4X4IX in Tel Aviv on 144 SSB for a distance of 3,544 km, while G8PWX in Tynemouth made the first two-way RTTY with Norway when he worked LA3EQ over a 660 km path. Finally, PA0SSB made the first 2300 MHz contact via moonbounce to W6YFK, no other details available at the moment.

## 2 METRES FROM VK5KK

The large stationary High Pressure cell over the south-east of Australia during early June brought some good tropo conditions from 3/6 to 9/6. On 3/6 Ballarat, Channel 6 TV, was almost snow-free from 0800Z to 1100Z, despite a very strong local Channel 7 (which had some co-channel interference, too). Mt. William, Channel 7, repeater very strong. Heard VK3KTL working VK3KOZ (locations?) at 1100Z at 5 x 2 on 144.1 MHz. Very strong local (Whyalla, Mt. Gambier!) signals. Conditions next peaked on 6/6 with Channel 7, Mt. William, and Channel 5, Mt. Macedon, repeaters at good strength, at 2300Z to 0300Z and then again at night. Also Channel 1 at Mt. Wombat was workable from 0130Z to 0300Z. Mt. Wombat is 35 miles south-east from Shepparton, call sign VK3RGV, 2,600 feet ASL. Not bad for this time of year. Unfortunately not a great deal of SSB activity on the low end. On 8/6 Ballarat TV almost snow-free again at 1000Z. Also coldest Adelaide day (—0.4 degrees C) on 8/6, but by 9/6 High Pressure cell had

finally moved bringing an end to freezing weather and DX.

## TOURING THE COUNTRY

As I write these notes I am sitting in my caravan in the caravan park at Exmouth, right up near the North West Cape Communications Centre in Western Australia. Being a weekend I won't be able to have an escorted tour over the big radio station whose 13 very high masts I can see in the distance. However, tomorrow I hope to meet Steve VK6ASF, who lives here and who USED to operate on 2 metres. In fact, the closest thing to any VHF signals in this place are a few splashes of signals from Indonesian TV (well, that direction anyway, not enough signal to identify!).

In fact, the measure of activity on 2 metres or any other VHF band along this portion of the west coast of WA above Perth and so far to Exmouth has been minimal. I did catch up with Jim VK6KJN in Geraldton, who lives in one of the caravan parks in that town, and found most of the 2 metre activity is confined to Channel 50 and then very spasmodic.

The highlight of the trip so far was to meet up with Andy Hemus, who is now back in Carnarvon and sporting his old call again of VK6OX after spending some time at Kyogle, NSW, with the call of VK2DUX. Andy welcomed me with open arms and we had quite a long natter on the subject of VHF, ultimately leading of course to a most descriptive tour of the OTC installation and the 26.5 metre dish antenna, with Andy acting as a most informative guide.

Andy has now moved into his permanent house at last and will soon be erecting antennae to get back on the air and, from the superb location that Carnarvon offers, we should be hearing of his exploits again soon. If his presence does nothing else it must help to stir up a bit of VHF activity up and down the west coast of the State, and this will be a good thing for the hobby.

As I continue on my tour around Australia I want to call and see VK6ZIT in Derby, John VK6ZDJ in Dampier, John VK6GU in Wyndham (who recently has made contact with Japan on 2 metres) and of course Graham VK8GB in Darwin. These are just for starters. I will try and bring you some news of what they are doing in the September issue. I was unfortunate to miss out on seeing Tony VK6BV in Northam, but circumstances did not allow contact to be made.

I have asked David VK5KK to fill you in on the local scene during my absence and the intention is for the Editor in Melbourne to "marry" the two sets of notes together to make one hopefully successful narrative! I am keeping in contact with David VK5KK through weekly skeds on HF, having an FT7B and mobile whips with me, so I am not too far from the general scene despite moving around. The people staying in my house are forwarding my mail at regular intervals, so any letters having been forwarded in the interim will not be left home going stale! Hence those of you good enough to write will still be acknowledged through the columns in the usual way! So much for dedication to the cause!

## 70 cm AND ABOVE FROM VK5KK

Mostly local activity, with VK5ZRO at the forefront of the activity with his nightly contacts to Whyalla (over 250 km) on 437.1 MHz SSB. Reason for such a frequency relates to a simple "TVI" problem, almost anybody in the Adelaide area on 432 MHz upsets the local 426.25 MHz ATV repeater!! As with other TVI problems, it would seem that the good location of the repeater plus poor front-end selectivity does not like even 10 watts of SSB 16 km away. I have been dabbling with a bit of ATV lately and can manage good signals from Bob VK5ZRO, who is 110 km away at Elizabeth. Bob is currently working on 1296 MHz SSB gear and hopefully 24 cm ATV gear soon. Other ATVers are looking toward 24 cm ATV, but at this stage some standard channel system would be helpful. A good magazine covering 24 cm ATV recently is the one put out by the British ATV group (BART).

At this stage I am running 25 watts SSB on 1296 MHz (transceive). My location is ideally located to the south-east (being 120 km from Adelaide Hills). I hope to work further than Millicent (420 km) next summer. At this stage I have just been in contact with Eric VK5LP, at Exmouth, on 7 MHz. From the sound of things all is well on his around Australia trip. Hopefully I will have more next month, as things always seem to be VERY busy in June, keeping my operating hours down to the minimum.

## CONCLUDING

Having now put you in the picture, that's about all the news for now. VHF equipment with me consists of a TS7800 and an IC502, the latter so far not having been used. I did want to bring 2 metres SSB but the lack of room to stow a 2 metre beam made the exercise impracticable, so I have had to be content with 2 metres FM and the usual whip antenna.

Closing with the thought for the month: "If your efforts are sometimes greeted with indifference, don't lose heart — the sun puts on a wonderful show at day-break, yet most of the people in the audience go on sleeping."

73. The Voice in the Hills.

**REMEMBER  
REMEMBER  
REMEMBER**



## AX PREFIX

Don't forget you can use the prefix AX instead of VK for the period

15th AUGUST 1982

to

15th OCTOBER 1982 inclusive

to mark the occasion of the Commonwealth Games In Brisbane.

# CLUB CORNER



## OXLEY REGION AMATEUR RADIO CLUB

### AMATEUR RADIO CONVENTION

The Oxley Region Amateur Radio Club held its 11th annual convention and field day in Port Macquarie over the Queen's Birthday weekend.

A big crowd, made up of local club members and visitors from many parts of NSW, attended and enjoyed the extensive programme of events.

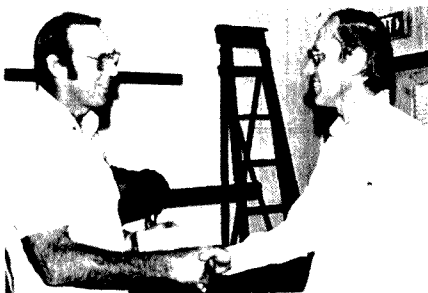
President of the Wireless Institute of Australia (NSW Division), Sue VK2BSB, and Secretary, Athol VK2BAD, were welcomed by local Club President, Bill VK2ZCV.

Congratulations were extended to Sue on her appointment to the top executive position of WIA, NSW. It was also pointed out that she is the first woman to ever occupy the position of President in the Institute, the oldest of its kind in the world.

### NEW EVENT

A "Home Brew" receiver building contest was an additional event on this year's programme. The receiver had to be designed for use on any of the amateur radio bands and constructed from parts which were reasonably and/or commonly available.

Local radio amateur Col VK2VQT was judged the winner of the event and was presented with a grid dip meter donated by the Trio-Kenwood Company. The sales manager of Trio-Kenwood, Mr. Sandy Brucesmith VK2AD made the presentation to Col and congratulated him on the workmanship and performance of his home-made set.



Col VK2VQT (left) receiving his "home-brew" prize from Sandy VK2AD.

### CW CONTEST

Once again this Morse code receiving contest proved a popular and interesting feature of the programme of major events. The winner of the 25 w.p.m. section was Lester VK2KT, from Taree. Great performances were turned in by all contestants, particularly Bill VK2WC, of Wauchope, and Eric VK2BEK, also from Taree. Lester commented that he was somewhat relieved

that last year's winner, Peter VK2PA, and his wife, Ina, were presently over in London on holidays!

Winner of the 10 w.p.m. section was a very excited Debbie VK2EYL, from Tamworth. Debbie turned in a near faultless result and she also gained a notable place in the Fox Hunt events held during the day.

### RESULTS

Winners in the other main events held over the two days were:—

#### FOX HUNT:

1. Kevin VK2KKW, from Normanhurst;
2. Athol VK2BAD, Sydney;
3. Sue VK2BSB, Sydney.



Athol VK2BAD accepting his prize for the Fox Hunt from Club President Bill VK2ZCV.

#### OLD GEAR DISPLAY:

- Brian VK2DLM, of Urunga, with a 1926 model Attwater Kent seven valve set.

#### FULL CALL QUIZ:

- Sue VK2BSB

#### GENERAL QUIZ:

- J. Savins (Swansea)

#### LADIES' 80M SPRINT AND

#### LADIES' RADIO THROW:

- Lee Barry (Padstow)

#### GENTS' 80M SPRINT:

- Ray VK2BRG (Coffs Harbour)

#### GENTS' RADIO THROW:

- Bruce VK2VRG (Fairfield)

### APPRECIATION

President Bill VK2ZCV expressed his appreciation to other donors of prizes and made special mention of Mr. John Smith's mobile museum from the award winning local firm Century of Sound.

He also thanked all persons and firms who made available the many interesting displays of surplus gear and new equipment, which drew continual patronage throughout both days.

### COMPUTERS

The boys from the Hastings Computer Club operated non-stop and kept children and adults enthralled with various games and demonstrations on the computer.

President of that club, Neville Joyce, of Wauchope, was kept busy answering ques-

tions and providing the latest information available in the new world of computer age.



Computer Display with Neville Joyce of Hastings Computer Club.

Likewise, Dave Hall, from the local firm Hall of Electronics, held a fascinated audience with a computer chess exhibition.

### PLENTY TO EAT

The hard working girls of the kitchen drew praise and appreciation from all with a masterful presentation at smorgasbord and lunch times. It was a big effort to cater for such a large crowd in this regard, as well as keeping up a continuous morning and afternoon tea service.

Members of the Oxley Region Amateur Radio Club were more than amply rewarded with great weather and probably the most successful amateur radio convention ever held in Port Macquarie. ■

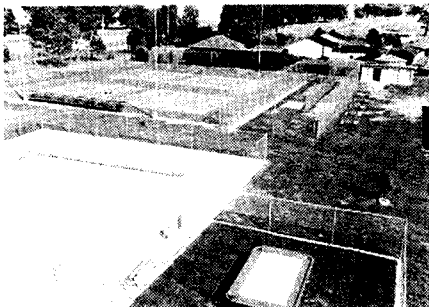
## WAGGA AMATEUR RADIO CLUB

We have often read reports of amateur radio conventions around the Country. This is great except that you always read about it after the event. In other words, all the fun is over. You read of hidden transmitter hunts, sight-seeing, new and used equipment at bargain prices, meeting up with old friends, prizes being won, banquets, and you think to yourself "I wish I had gone to that", but it is always too late. Well, we down in the south-western part of the bush have decided that you are not going to suffer this problem with the SWARS Convention. We are going to give you the news before it happens, that way you will know what you are going to miss out on. But first, some history on our Convention and who we are.

The "South West Amateur Radio Society" is an organisation formed to foster amateur radio and fellowship in the south-west zone of NSW. This area extends from Albury to Young and from Mildura to Goulburn. Each year the Society conducts a Convention in one of the many cities or towns within its area. An obvious measure of the popularity of the Convention is that

this year will be the 30th anniversary of the Convention. That makes it one of the longest running events in this State. This year Wagga Amateur Radio Club will act as hosts for the Convention and therefore it will be held at WAGGA WAGGA.

The city of Wagga Wagga comprises a population of some 50,000 and is situated on the bank of the Murrumbidgee, 500 km from Sydney and 400 km from Melbourne. There are numerous points of interest for sight-seeing, modern motels, shopping complexes and all the things one would expect from one of NSW largest provincial cities. The Wagga Club have chosen for the Convention site, the "Borambala National Fitness Camp" complex. This site is situated about 15 km from the city and would have to be one of the best Convention sites anywhere. It is controlled by the Department of Sport and Recreation and is not unlike an "American Summer Camp" to compare with. There is ample parking for cars and caravans. The facilities include Convention halls, catering centre, amenities, accommodation rooms, sporting facilities for tennis, swimming, archery, canoeing and nature reserves. Participants in the Convention would be able to bring the entire family for a super holiday and be assured of a great time. The advantage of having accommodation rooms at the site is a big plus on its own.



The Convention Site

Also there are big plans in the wind for the Convention itself. A scheduled programme will include competitions, talk-ins, scrambles, hidden Tx hunts, pedestrian hunts, demonstrations of ATV, computers, auction sales and trade displays. We would advise anyone coming to our Convention to bring some Tx hunting gear. There will be prizes for winners and the boys at Wagga really know it all when it comes to hiding transmitters. It has been known to find them in hollow guide posts on the side of the road, high up in the trees, under a rock in the middle of a creek and once one was found under a dead cow. On the social side a genuine bush banquet is being planned, complete with entertainment, which should be a real spectacle in itself.

Preliminary details can be obtained by writing to the Wagga Amateur Radio Club, PO Box 71, Koorlingal, NSW 2650, or contacting Jeff VK2CET. The dates for the Convention will be 2nd and 3rd October, 1982, and already the Wagga Club, of which there are over 50 members, are working on the final details. Little items

such as the talk-in frequencies to be monitored on day one have been decided. These are 28.490, 7.115, 3.610, 146.750 (Channel 3 repeater), 146.500 (Channel 50).

So if you feel you would like to get out into the country and meet some friends where the air is clean and the grass is green, then Wagga and the SWARS Convention would be a great place to go.

VK2DOL.

## Federal VK9-0 QSL Bureau

Neil Penfold VK6NE

388 Huntriss Road, Woodlands 6018

The WIA maintains a Federal QSL Bureau service for members' incoming cards at 388 Huntriss Road, Woodlands 6018, West Australia. There is no outwards Federal Bureau, as each Division of the Institute handles this operation.

Amateurs holding a VK9 or 0 call sign are eligible to join a Division and utilise that Division's outward QSL Bureau. In some Divisions this is a free service, in others a small charge per card is made to defray expenses.

Many operators using a VK9 or 0 call have done so for only a short time. Antarctic personnel usually stay there for around 12 months before returning home. If their home call is known then their cards are forwarded to that Division, e.g. VK0HW is a VK7 when at home, so his cards go via the inter-divisional QSL mail service. Some VK9 operators have their cards dealt with in a similar manner. Should a Manager have been appointed, then cards are sent to the Division in which the Manager resides, e.g. VK9ZR, Mellish Reef cards, the Manager is Harry VK2BJL, so cards for VK9ZR go to the NSW Division.

In the event that neither the operator nor Manager are members of the WIA, then arrangements must be made for the on-forwarding of cards. This is usually done by the operator or Manager paying the postage costs involved.

Under IARU Rules, Divisions are quite within their rights to refuse to handle non-members' cards. However, a proviso has been attached to the Federal QSL Bureau for non-members' incoming cards: "Where the non-member pays the cost of postage, the cards will be forwarded to him."

The operations by VK9NS and VK9NL has caused a tremendous upsurge of cards received by the Federal Bureau for Norfolk Is., to the extent that a shoe box full are posted to Norfolk Is. on the average of once every six weeks, VK9NS has undertaken to pass on to the other islanders their few cards. This all helps to keep the Bureau clear of cards.

If you work a VK9 or VK0 with an overseas Manager, please indicate on back of the card. This will assist your Divisional Bureau to sort the cards and post them off to the Bureau in the country where the Manager resides.

A word of caution, the Federal Bureau receives quite a few VK9 and 0 cards for pirates or slims. It appears some small ships and yachts, among others, take advantage of the unique VK9 or 0 call sign and allocate one to themselves and use it whilst traversing the world's oceans and seas.



## FORWARD BIAS

VK1 DIVISION

B. Bennetts VK1BB

48 Chuculba Cres., Giralang, ACT, 2617

### NEW RADIO CLUB

A new Radio Club has been formed in Canberra, mainly due to the inspiration of the new International Chapter of 10 x 10, "Australian Capital Chapter". The Club, aimed at the Handicapped, is known as the Woden Valley Hospital Radio Club, and was opened by the Minister of Health on Wednesday, 14th July.

The formation and continuing efforts directed in this venture will be by harmonious co-operation of three fraternities — 10 x 10 International, CB Groups AND THE WIA, proving that "communication" is the key-word for success. Incidentally, the Club call sign is easy to remember — VK1 Woden Valley Hospital.

### NEW CALL SIGNS

Two other call signs have been allocated to Clubs in VK1 in recent weeks. They were:—

VK1 Royal Australian Navy, the official call sign of the ACT Division of RNARS.

VK1 Australian Capital Chapter. The Club call sign of the ACT 10 x 10 Chapter of 10 x 10 International.

### PHONE No.

VK1 WIA now has an official telephone number. The number is 41 3889.

### POLES!!!

VK1 amateurs are taking full advantage of being able to purchase damaged aluminium columns (street poles) from the ACT Electricity Authority. At only \$30 each, plus a small charge for delivery, several ingenious and incredibly cheap antenna towers are sprouting up around Canberra. It is becoming difficult to differentiate what is an "official light pole" or "amateur tower", as the towers blend in beautifully with the Canberra landscape. "WHERE THERE IS A WILL, THERE IS — END."



# QSP

### WOODPECKER PROLIFERATION?

According to Ham Radio, April 1982, the USA will begin an OHR system some time this year, operating with an ERP of 1.2 mW from a location near Moscow in Maine and sweeping from 5 to 35 MHz. The short article includes a promise that the military will work in with the amateur community to reduce its impact.

# VK2 MINI BULLETIN



Athol Tilley VK2BAD  
PO 166, Parramatta 2150

## WE HAVE MOVED!!

NEW POSTAL ADDRESS:

PO BOX 1066,  
PARRAMATTA 2150

NEW DIVISIONAL OFFICE:

109 WIGRAM STREET,  
PARRAMATTA

### COUNCIL REPORT

The NSW Divisional Council met on the 18th of June. A workshop session proposed by the Institution of Radio and Electronics Engineers (IREE) to consider the proposed Radio Communication Act was discussed and the WIA intends to submit a discussion paper and to attend these workshop sessions. Areas of particular interest concern a possible increase in interference between the various radio services and EMC considerations affecting the Amateur Radio Service.

DOC exam statistics indicating a poor result by NSW applicants at amateur exams was discussed and this situation will be raised at a proposed Sydney DOC-WIA joint meeting.

Council resolved to accept the offer to purchase 14 Atchison Street, Crows Nest, for \$410,000 and confirmed the purchase of a new commercial office building at 109 Wigram Street, Parramatta, as the new Divisional headquarters. All assets and equipment currently at Atchison Street will remain on Divisional property, that is Parramatta or Dural. Any equipment surplus to WIA needs will be offered for sale to members of the Division.

The proceedings at the 6th Conference of Clubs, held on the 23rd of May at Revesby, were discussed. Council accepted the recommendation of the Conference that a State-wide common calling frequency of 28.490 MHz be adopted. The proposal that all items of agenda for future Conferences of Clubs should be accompanied by a brief explanation of intent, was noted. Council felt that the WIA had given reasonable publicity to the John Moyle NF Day Contest in past years and noted that the position of Contest Publicity Officer remained vacant. This position entails the generation of short broadcast items and other publicity that will make amateurs aware of the various contests, thus encouraging participation. Perhaps Affiliated Clubs have a member interested in this position. If you can assist, please contact the office.

A proposal that contests be restricted to certain parts of each band has been referred to the Federal Contest Manager. The proposal that amateur exams in all subjects be conducted quarterly will be raised with the DOC. The 7th Conference of Clubs will be hosted by the Westlakes Amateur Radio Club at Teralba later this year. Council has set a suggested date of the 31st of October, 1982.

The Shoalhaven Amateur Radio Club was successful in the ballot for the PYE UHF Repeater.

The Westlakes Amateur Radio Club made an additional submission concerning their proposed relay of the Divisional broadcast in the Newcastle area. Council resolved that Westlakes be permitted the conduct of a relay of the morning Divisional broadcast on a frequency of 3.585 MHz using a power of 10 watts. This will be for a trial period of 6 months, to be reviewed periodically.

### HOME-BREW COMPETITION

HAS "BLACK BOX" OPERATION TAKEN OVER AMATEUR RADIO OR IS THE SPIRIT OF THE HOME CONSTRUCTOR STILL ALIVE? Acting on a recommendation of a previous Conference of Clubs, this Division is conducting a home-brew competition which has the object of fostering the technical and creative aspects of amateur radio.

Almost any amateur radio orientated project would be an acceptable entry. The project should be fully documented, i.e. accompanied by a circuit and block diagram, photographs, technical specifications, brief description of operation, etc., and should be in a complete operational form. There are three sections: (1) completely home designed and constructed, (2) home built from a published design, and (3) home assembled kit.

Judging will be by a panel of three judges provided by a local club. Projects and documentation are to be presented to this panel and the averaged assessment of marks and documentation will be forwarded to the Divisional Council. If you are not a member of a club or do not have a local club, three local amateurs can act as judges.

All entrants will be encouraged to submit a technical article on their project to Amateur Radio magazine.

The closing date is the 30th of November, 1982, and the completed entry form/marketing sheet and documentation must be received at the Divisional Office by this date. Council will decide upon the winners at its December meeting and award presentations will be made at the Annual General Meeting of the Division in March

1983. Apply NOW at your local Affiliated Club for an entry form and copy of the rules or write to the Divisional office.

### VOLUNTEERS REQUIRED

The Division requires a Contests Publicity Officer. This position involves producing short items for inclusion on Divisional broadcasts, in club postings and the Mini Bulletin publicising various contests such as the Ross Hull, John Moyle NFD and the Remembrance Day. When the results of these contests are available, you will advise Council of the top scorers from VK2 in the various sections so that awards can be made to these amateurs/clubs.

We also require a JOTA Officer. This person would be required to co-ordinate liaison between amateurs and Scout and Guide Headquarters for the Jamboree on the Air (JOTA). JOTA will be held over the weekend of the 16th and 17th of October.

If you can assist in filling either position, please contact the office.

### REMEMBRANCE DAY CONTEST

This contest will be held in August and the rules were published in AR. This Division will present Certificates of Merit to the first, second and third placegetters for stations operating in NSW for each section of the Remembrance Day Contest.

### DETAILS OF CLUBS AFFILIATED WITH THE NSW DIVISION

#### CENTRAL COAST ARC

PO Box 238, Gosford, NSW 2250.

Net: Tuesdays at 10.00 UTC on 3.565 MHz, using VK2AFY.

Meetings: 1st and 3rd Friday of each month at 7.30 p.m. at the club rooms in Dandaloo Street, Kariong.

President: Terry Davies VK2KDK. Vice-President: John Pogson VK2DBC. Secretary: Mrs. Suzanne Wells. Others: Ray Wells VK2BVO, Stan Dogger VK2KSD, Len McNab VK2DDM, Leigh Aanensen VK2KAL.

Classes: NAOCP each Wednesday at 7.30 p.m. at club rooms.

Magazine: Smoke Signals, monthly. Editor: Leigh Aanensen VK2KAL.

Repeater: VK2RAG, channel 6750, and VK2RUG, channel 8075.

Field Day: February 20, 1983, at Gosford Showground.

#### GRIFFITH RC

PO Box 4, Griffith, NSW 2680.

Net: Wednesdays at 11.00 UTC on 28.480 MHz, using VK2DBK.

Meetings: 3rd Monday of each month at SES Headquarters.

President: Graham VK2DGW. Vice-Presi-

dent: Ted VK2AXD. Secretary: John VK2DFC. Social: Joyce VK2DIX, Bill VK2BBL, Roger VK2AYX. Repeater: John VK2YEZ, John VK2DFC, John VK2ZJL.

Repeater: VK2RGF, channel 6850.

**NORTH WEST ARG**

PO Box 120, Inverell, NSW 2360.

Net: Mondays at 11.00 UTC on 3.575 MHz.

Meetings: As and when necessary.

President: P. Beard VK2VBM/XPB. Secretary: D. Bailey VK2NVN. Others: R. Cambridge VK2BYV, R. Moore VK2DSM, R. Stockman VK2ATS, T. Lumbewe VK2ZX, A. Mack VK2DPS, A. Yates VK2ZP.

Repeaters: VK2RMI, channel 6950, and VK2RAB, channel 6850.

**COMING EVENTS**

WICEN City to Surf, August 8.

Tamworth Field Day, September 4/5. (PO Box W107, West Tamworth, NSW 2340.)

SWARS Convention at Wagga, October 2/3. (PO Box 71, Koorngal, NSW 2650.)

NSW members and clubs are invited to submit news for inclusion in this column to PO Box 123, St. Leonards, NSW 2065. News for September AR should reach us by July 23.

73. Athol. ■

In France when they turn on their X-mtr it goes "clique".

(ARNS Bulletin) ■

The best way to hold a conversation is to let go of it once in a while.

(ARNS Bulletin) ■

**A Call to all holders of a**

**'NOVICE LICENCE**

Now you have joined the ranks of Amateur Radio, why not extend your activities?

**THE WIRELESS INSTITUTE OF AUSTRALIA (N.S.W. DIVISION)**

conducts a Bridging Correspondence Course for the AOCF and LAOCF Examinations.

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For further details write to:

**THE COURSE SUPERVISOR, W.I.A.**

P.O. BOX 1066, PARRAMATTA, NSW 2150

W0806



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W0812

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| Model                        | Gain dbi | Boom  | Price incl. balun |
|------------------------------|----------|-------|-------------------|
| <b>15/11/10 Mx</b>           |          |       | \$40              |
| ATN 20-30-1 rotary dipole    |          |       |                   |
| <b>10/11 Mx model</b>        |          |       |                   |
| ATN 28-29-3B 10 Mx           | 10.0     | 3.5M  | \$75              |
| ATN 27-28-3B 11 Mx           | 10.0     | 3.5M  | \$75              |
| ATN 27-30-3B 10/11 Mx        | 10.0     | 3.5M  | \$90              |
| <b>6 Mx</b>                  |          |       |                   |
| ATN 50-52.5-5                | 11.9     | 3.5M  | \$95              |
| ATN 50-53-8                  | 14.2     | 5.5M  | \$149             |
| ATN 50-53-11                 | 16.2     | 9.0M  | \$189             |
| <b>2 Mx</b>                  |          |       |                   |
| ATN 144-148-8                | 12.7     | 2.2M  | \$59              |
| ATN 144-148-11               | 14.6     | 3.8M  | \$69              |
| ATN 144-148-16               | 17.0     | 6.3M  | \$89              |
| ATN 144-148-13WS             | 17.3     | 7.0M  | \$89              |
| <b>70 cm Model (N Conns)</b> |          |       |                   |
| ATN 420-470-6                | 10.2     | 0.6M  | \$45              |
| ATN 420-470-14               | 14.2     | 1.5M  | \$65              |
| ATN 420-440-11               | 15.7     | 1.85M | \$69              |
| ATN 420-440-15               | 16.7     | 2.85M | \$79              |
| ATN 420-450-27               | 16.7     | 3.05M | \$99              |
| ATN 432-16LB                 | 17.2     | 3.7M  | \$85              |
| <b>UHF CB (N Conns)</b>      |          |       |                   |
| ATN 47-5                     | 9.2      | 0.65M | \$45              |
| ATN 47-7                     | 10.2     | 0.7M  | \$49              |
| ATN 47-11                    | 17.0     | 1.7M  | \$65              |
| ATN 47-15                    | 17.8     | 2.8M  | \$75              |
| <b>Amateur TV Translator</b> |          |       |                   |
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|---------|----------|---------------|------------------|--------------------------|
| 13-30-6 | 6        | 6.0           | 7.5              | \$319                    |
| 13-30-8 | 8        | 8.5           | 9.0              | \$399                    |

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Includes new WHARC & CB LOG PERIODICS

| Model    | Elements | Boom (metres) | Gain dbi Minimum | Price |
|----------|----------|---------------|------------------|-------|
| 20-30-6S | 6        | 4             | 7.5              | \$199 |
| 20-30-6L | 6        | 6             | 8.5              | \$229 |
| 20-30-8  | 8        | 8.5           | 10.2             | \$299 |

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| 21-21.5-5 | 5        | 8             | 11.2             | \$299 |

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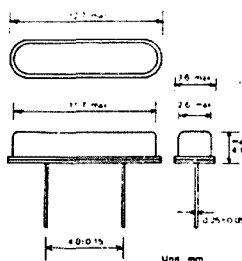
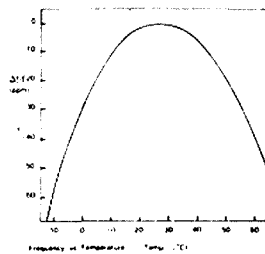
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# VK/ZL/Oceania DX Contest 1982

Neil Penfold VK6NE

388 HUNTRISS ROAD, WOODLANDS, WA

NZART and WIA, the national amateur radio associations in New Zealand and Australia, invite world-wide participation in this year's VK/ZL/OCEANIA DX Contest.

## WHEN?

### Phone

24 hours from 1000 GMT Saturday, 2nd October, to 1000 GMT Sunday, 3rd October.

### CW

24 hours from 1000 GMT Saturday, 9th October, to 1000 GMT Sunday, 10th October.

## RULES

There shall be three main sections in the contest:—

(a) Transmitting—Phone, open.

(b) Transmitting—CW, open.

(c) Receiving—Phone and CW combined.

2. The contest is open to all licensed transmitting stations in any part of the world. No prior entry need be made. Mobile marine and other non-land based stations are permitted to enter. Their "country status" will be determined by the country which issued the call sign used in the contest.

3. All amateur bands may be used but no cross band operation is permitted. NOTE: VK and ZL stations, irrespective of their location, DO NOT contact each other for contest purposes EXCEPT on 80 and 160 metres on which bands contacts between VK and ZL stations are encouraged.

4. Phone will be used during the first weekend and CW during the second weekend. Stations entering both sections must submit separate logs.

5. Only one contact on CW and one contact on Phone per band is permitted with any other station for scoring purposes.

6. Only one licensed amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor and must submit a separate log under his own call sign. This is not applicable to overseas competitors operating club stations.

7. Entrants must operate within the terms of their licences.

8. **CYPHERS:** Before points can be claimed for a contact, serial numbers must be exchanged and ACKNOWLEDGED. The serial number of five or six figures will be made up of the RS (Phone) or RST (CW) report plus three figures which may begin with any number between 001 and 100 for the first contact and which will increase in value by one for each successive contact. E.g., if the number chosen for the first contact is 021, then the second must

be 022, followed by 023, 024, etc., etc. After reaching 999, restart from 001.

## 9. SCORING

(a) For Oceania Stations other than VK/ZL: 2 points for each contact on a specific band with VK/ZL stations and 1 point for each contact on a specific band with the rest of the world.

(b) For the rest of the World other than VK/ZL: 2 points for each contact on a specific band with VK/ZL stations and 1 point for each contact on a specific band with Oceania stations other than VK/ZL.

(c) For VK/ZL Stations: Points for each QSO on different bands as follows: 20m, 1 point; 15m, 2 points; 10m, 3 points; 40m, 5 points; 80m, 10 points; 160m, 20 points. Score for EACH BAND will be the total points score for that band multiplied by the total prefixes worked on that band. Final "all band" score is the SUM of the different band scores.

NOTE: W1, K1, WA1, WN1, A1, N1 (although in the same call area) are different prefixes and count as multipliers. W6AA/1 is same as above and counts as a "W1" and not "W6".

(d) **80 Metre Section:** For 80 metre contacts between VK and ZL stations, each VK and ZL call area will be considered a "scoring area" with each contact counting 10 points. Each different call area will count as a multiplier.

(e) **160 Metre Section:** Contacts permissible between VK/ZL, VK/VK, ZL/ZL, as well as VK/ZL to the rest of the world. Each VK and ZL call area will count as a "scoring area" with each contact counting 20 points. Each different call area will count as a multiplier.

NOTE: A contestant may claim points for contacts with other stations in the SAME call area for this 160 metre section.

## 10. LOGS

(a) **Overseas Stations:** (A) Logs to show in this order—date, time in GMT, call sign of station contacted, band, serial number sent, serial number received. UNDERLINE each new VK/ZL call area contacted. Separate log must be submitted for each band used.

(B) Summary sheet to show—call sign, name and address in BLOCK LETTERS, details of equipment used, and for EACH BAND—QSO points for that band—VK/ZL call areas worked on that band. "SINGLE BAND" score will be QSO points for that band multiplied by total VK/ZL call areas worked on that band. "ALL BAND" score will be total QSO points for all bands multiplied by total VK/ZL call areas worked on all band.

(b) **VK/ZL Stations:** (A) Logs must show in this order—date, time in GMT, call sign of station worked, band, serial number sent, serial number received. USE SEPARATE LOG FOR EACH BAND.

(B) Summary sheet to show—name and address in block letters, call sign, for EACH BAND—QSO points for that band, prefixes worked on that band, claimed score for that band. "All band" score will be total of single band scores. Give details

of equipment used and declaration that all rules and regulations have been observed.

11. The right is reserved to disqualify any entrant who, during the contest, has not strictly observed regulations or who has consistently departed from the accepted code of operating ethics.

12. The ruling of the Executive Council NZART will be final.

13. **AWARDS:** Separate awards for Phone and CW.

### World-wide except VK/ZL

(a) Attractive multi-colour certificates to the top scorers in each country (call areas in "W", "J", "U").

(b) Depending on reasonable degree of activity, separate awards may be made for top scores on different bands.

(c) Where many logs are received, consideration will be given to awarding second and third place certificates.

**To VK and ZL Stations: Open Section—Certificates:—**

(a) To top three scorers in each call area VK/ZL.

(b) To top three scorers on individual bands (160, 80, 40, 20, 15, 10) in VK and in ZL.

14. **ENTRIES FROM VK/ZL STATIONS** should be posted direct to:—

NZART Contest Manager ZL2GX,  
152 Lytton Road,  
Gisborne, New Zealand.

to arrive before 31st DECEMBER, 1982.

### ENTRIES FROM OVERSEAS STATIONS:

Posted to the above address to arrive not later than 31st JANUARY, 1983.

### SWL SECTION

1. The rules are similar to the transmitting section, but it is open to all members of any SWL Society in the world. No transmitting station is permitted to enter this section.

2. The contest times and logging of stations on each band per weekend are as for the transmitting section except that the same station may be logged twice on any band—ONCE ON PHONE AND ONCE ON CW.

3. To count for points, the station heard must be in QSO exchanging cyphers in the VK/ZL/Oceania DX contest and the following details noted—date, time in GMT, call of the station heard, call of the station he is working, RS(T) of the station heard, serial number SENT by the station heard, band, points claimed.

4. Scoring is on the same basis as for the transmitting section and a summary sheet should be similarly set out.

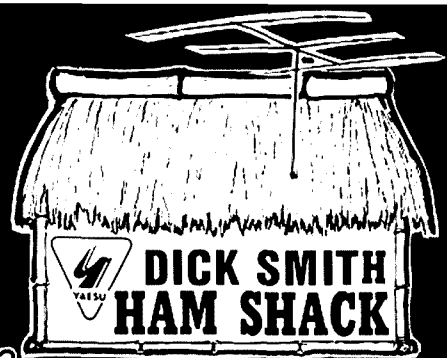
5. Overseas stations may log ONLY VK/ZL stations, but VK receiving stations may log overseas stations and ZL stations, while ZL receiving stations may log overseas stations and VK stations.

6. Certificates will be awarded as listed in the section under awards.

**Please note: These are NZ Rules which differ from WIA Rules.** ■

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5 band (80-40-20-15-10 mtrs) vertical. 1 kw PEP. 6.7m high, very good for limited space applications. Cat D-4305.

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## FT 107m/dms

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~~WAS \$1328~~

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## FT 290 R

2m

All mode scanning portable plus LCD plus 2 VFO's plus 10 memories plus hi. lo power plus built in antenna plus NB plus memory backup Cat D-2885

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## VHF — UHF Whip with base

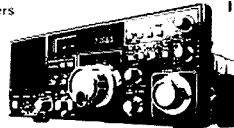
68-600 MHz comes with cutting chart. 110cm long stainless steel super for UHF CB & 2m amateur & 70 cm amateur & our new scanners. Cat D-4023

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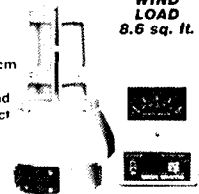
Super compact FM 3/25 watt synthesised — LCD — 2 VFO's — 10 memory plus scanning. It's out of sight 2m radio! Cat D-2893

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Cat D-5000

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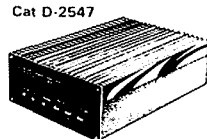
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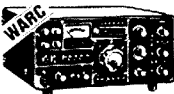
Cat D-2547

## FL 2100Z HF Linear

Big power — 1.2kW. All WARC bands. Cat D-2548.

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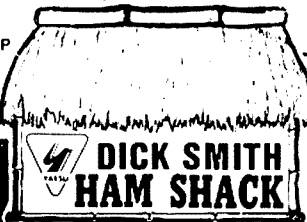
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- Richmond — 656 Bridge Rd 428 1614
- Perth — 414 William St 328 6944
- Buranda — 166 Logan Rd 391 6233
- Chermside — 842 Gympie Rd 59 6255
- Melbourne — 399 Lonsdale St 67 9834

DSE A307 PA1

W0817

# IONOSPHERIC PREDICTIONS

Len Poynter  
VK3BYE

## Amateur Radio Cruise on the Oriana

Pete Taylor VK2DAB  
280 Banna Ave., Griffith, 2680

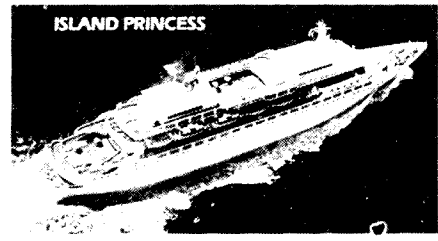
The operators who made the first amateur radio cruise ever last year on the "Love Boat", Island Princess, in the Caribbean, are doing a repeat this October on the P&O's Oriana out of Sydney. This time they hope to welcome some of their "down under" compatriots as operators.

With both HF and VHF stations aboard, the Oriana will sail out of Sydney on October 16 for Auckland, making two stops in Fiji before proceeding on to the New Hebrides and New Caledonia and returning.

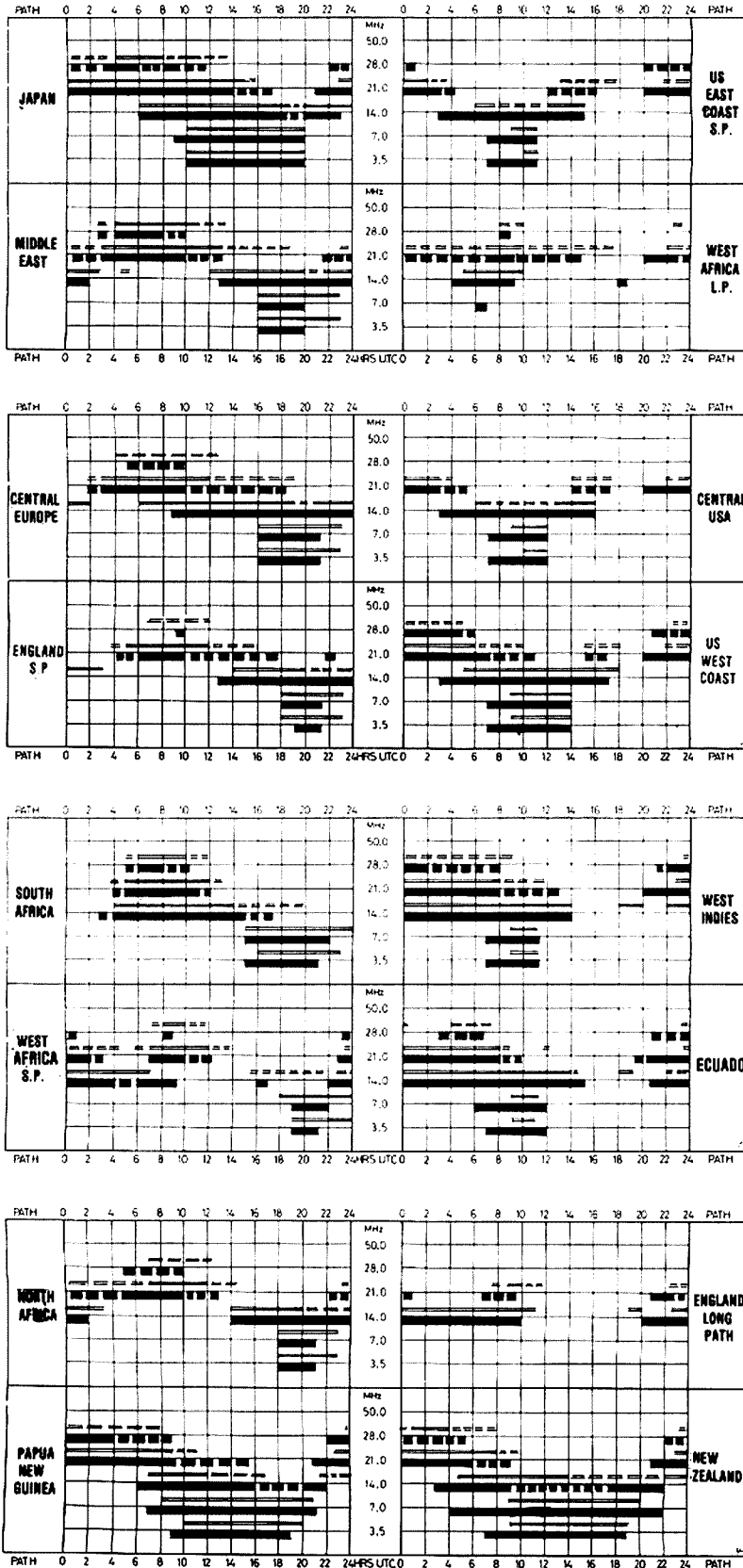
The group will be led by Dr. Gene Clark W6DQH and his wife, Dr. Jean Clark W6GUA. Jim Walden W6ESJ, Charles "Chuck" Smallhouse, and Dick Barrett W6CFK, and their wives, all of whom were on the pioneer cruise, have signed on for this one.

The amateur cruises were the inspiration of Nancy Smallhouse, a Los Altos, California, travel agent working from 161 S. San Antonio Road, Los Altos, Ca. 94022, who purchased a TS820S and a vertical trap antenna for three bands. Chuck cut the antenna to fit into a four-foot wooden carrying case of his own construction. Guyed with nylon, it survived 45 knot winds on the Gulf of Tehuantepec last year.

The US amateurs expect to arrive in Sydney a few days early to see the city and recover from jet lag after 18 hours of air travel from the west coast.



ISLAND PRINCESS  
DANIELA MARY DICK  
BARBARA MARY DICK  
DORIS MARY DICK  
JIM SILVER MARY TAYLOR



### THE "OOPS WHO GOOFED" DEPARTMENT

VK-ZL RESULTS 1981  
Amateur Radio, May 1982, page 39.  
24 HOUR SECTION — CW  
After VK4XA insert VK2AYD 55104/  
13312/24592/117115/60/0. 809,145,  
214,515.

Amateur Radio, June 1982, page 45.  
CW SECTION  
After YU7NQG insert HB0NL M 24 12  
48 576.

VK6NE.



# LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.



PO Box 520, Geelong 3220

The Editor.

Dear Sir,  
I have been directed by the membership of the Geelong Amateur Radio Club to write to you expressing their concern regarding the credibility and sincerity of WIA sponsored contests.

The reason for their concern is the apparent lack of care and attention to detail illustrated in the train of events surrounding this Club's effort in the 1982 John Moyle Memorial Field Day. These events, coupled with the feeling of "too bad chaps", has left the membership completely disenchanted with WIA contests.

To have put in the effort required to participate and to have rigorously checked all facets of the submitted log, members expect some effort on the part of the WIA to carefully check rules and validate results.

We enjoyed the contest and put in our best effort to date, then to be ruled "out" by faults, not of our own making, is unfair.

Please do not misunderstand our intention in writing this letter. We accept the umpire's decision, but feel the concerns expressed should be published in our national magazine.

I have set out the events in as concise a fashion as possible to illustrate the basis of our concern and you will find included copies of the relevant documents.

December 1981: Rules of the John Moyle Memorial Field Day published in AR (page 35). Rule 22 states, "Logs to be post-marked no later than 28th February, 1981, and sent to FCM, Box 1065, Orange 2800". It was later to be confirmed that not only was the posting DATE incorrect, but also the ADDRESS.

February 1982: Notification in AR of incorrect address (page 46) under heading "We Goofed". "You probably noticed last month . . ." In fact, TWO months had elapsed since the rules were published.

6th-7th February, 1982: John Moyle Memorial Field Day.

26th February, 1982: Contest log from GARC sent to Orange address as stated in rule 22. Post-marked this date.

5th April, 1982: Letter addressed this date received from Federal Contest Manager indicating receipt of GARC log on the 2nd April, forwarded from Orange (35 days after posting), and too late for inclusion in the results to be published in May AR. With this letter the Club received a "Certificate of Commendation in the Open Portable Section E", and indicated a score of 16,268 POINTS.

15th April, 1982: This Club forwarded a letter to the FCM expressing our concern and dissatisfaction with the Special Commendation, in view of the fact that the Club observed all rules as published in AR.

May 1982: Results of John Moyle Field Day published in AR (page 38). Winner of the Open Portable Section E, VK3APC with 10,667 points.

8th May, 1982: Letter received from the FCM accepting the GARC log "Because of its exceptional quality and because of the date of posting", "You will be listed in AR as equal first with the current winner but without your score".

This letter was accompanied by a certificate to certify VK3ATL gained first place Open Portable 1982, scoring — points.

June 1982: Under Contests AR (page 39) indicated the late arrival of the GARC log. It neglected to mention it was kept in Orange for a month. The notification then suggested it was "Impossible to award this club a place".

The major concern of this Club about the whole sorry affair is the future credibility of WIA sponsored contests. We support the John Moyle Field Day contest because it has a club orientated section,

because we enjoy it and because we want to win.

In closing we wish to commend the Federal Contest Manager's effort to finalise results quickly, but please in future make sure all the groundwork is accurate and that some effort is made to check logs.

73. Barry Abley VK3YXK.

Hon. Secretary Geelong Amateur Radio Club. ■

39 Columba Street, Inala 4077

The Editor,

Dear Sir,

With regards for more privileges for the Novice. This class was introduced to get "budding" AOCs on air. A frequent comment that I hear is "I have my Novice licence, why go higher?" To give Novices any more privileges will entrench these people in their ways.

I call on the Federal Council to oppose any more privileges, also a call for a five year tenure on Novice licensing, with re-examination at the end of tenure if they wish to hold their licence.

I received 68 per cent in August 1980 exam, but due to personal reasons and ill-health I was unable to sit for the examination last year.

Yours sincerely,

T. P. Kelly VK4NRE. ■

142 Sutherland Road, Beecroft, NSW 2119

The Editor,

Dear Sir,

Further to my letter of March 27th, 1982, stating that it cost \$105 (in labour) to repair a "latest type" solid state transceiver, which only involved replacing a transistor and a capacitor costing \$2.04. Two and a half hours of labour at \$42. per hour.

Two thoughts occur to me. ONE, when it gets around that these super sets cost a fortune to keep on the air, people will cease buying them. My set has been back to the Agents at least five times. Four while under warranty. This will boomerang on to the makers and the Australian Agents. The sets will cease to sell. What happens then?

The SECOND thought is this: Don't ask the technicians to work for less wages, but the COMBINED Agents take out an insurance policy covering repairs so that the repair bill to the owners of failed sets is subsidised by the insurance policy. At least in part.

There is nothing insurmountable in this idea. Some sets (of the brand I bought) never have had a single fault. My set is a lemon, it terrifies me to even turn it on. The sets that have no faults will pay for the lemons, and of course will also subsidise even the few faults of the "good" sets.

If the Agents do not do something to ease the intolerable burden of high cost repairs we amateurs could arrange to advertise the brands of these lemony sets, also invite owners to join in on a joint insurance policy. It could all be legally and morally done in such a way that nobody would be taken for a ride in any way whatsoever.

The WIA might be delighted to be the sponsor of such an idea. In fact, the idea of an insurance policy going far beyond mere repairs might blossom from this basic start. It might cover, in the long-run, theft, fire, damage in transit, and so on.

I trust that the above insurance idea will not be lightly put aside. I'm going to send copies of this letter to all the Agents (and overseas makers) and see if I can spark off some action. It would be in the interest of sales by the Agents as well as in the interests of the owners of lemons.

Yours faithfully,

Norman Blake VK2NDG. ■

PO Box 115, Heathcote 3606

The Editor,

Dear Sir,

Once again August arrives and with it the RD Contest.

After more than 20 years of contesting I feel

qualified to make a few pertinent comments on recent trends.

My first point is that you may operate anywhere within the bands covered by your licence, but you do NOT OWN any particular frequency. My pet hate is hearing the childish petulant cry:—

"Aw this is my frequency old man (sob sob)."

I, and many other experienced operators, have made a legitimate contest exchange before the LID has finished his sentence.

Secondly, increasing the mic gain on a commercial rig to maximum does not get you more contacts; it causes splatter, wastes power and creates interference.

Thirdly, a contest is a test of speed and accuracy — I want a number and acknowledgement of the number I send — faster the better — tell me your name, OTH and how many eggs your grandmother has for breakfast a week later.

Finally, the decision to drop the open section was idiotic and a good example of the lowering of amateur standards. The fact that the many letters to AR and contest managers have been ignored is amazing. Correction is easy — simply bring the contest back to three transmitting sections as originally planned in 1946.

In spite of the above moans I will be in it again this year, so best of luck in the contest.

73. Mike O'Burtil VK3WWW. ■



67 Koornalla Cres., Mount Eliza, Victoria 3930

The Editor,

Dear Sir,

What is the meaning of the insidious emergence of this symbol?

I have seen this appear too frequently in recent copies of AR. Has it been agreed by all members of the WIA to use it in preference, or instead of, the badge or logo of the organisation I joined?

Almost all other radio societies in the IARU (and the world) to my knowledge use a similar diamond shape logo. BUT the WIA, I have been led to believe, has roots earlier than the rest. SO — why not promote the distinctive badge? I could not agree with VK7AM (AR June 1982, page 54) more, although I have only been a member since 1965.

As AMATEUR RADIO OPERATORS we must be progressive — but change for change's sake or to merely weakly mimic the rest of the crowd is surely a hollow way to attempt to be "with it". There is nothing wrong with the WIA badge (the proper one). If we promote it more and keep it polished, in the metaphorical sense, surely we can make it last to become one of the great logos of the AR world. It has a great history of innovation — we should keep it that way.

Further, the presentation of that diamond shape has always been amateurish in the worst sense of the word. It looks in the reproductions for all the world like a first year secondary school student's attempt at drafting!

Please keep the PROPER WIA badge (LOGO) — GET RID OF THAT DIAMOND SHAPE. Yes, it does look like an expletive, does it not! I was proud of the WIA badge when overseas for over seven plus years, let's retain it for the future.

Yours faithfully,

Chris Walker VK3DDX (formerly A22DW, VK7UX). ■

(The WIA international diamond badge or emblem is an optional usage badge in no way superseding the WIA distinctive badge or logo. Please see page 2 of the WIA Book, Vol. 1, and AR July 1980, page 35.—Ed.)

# NEW CHIRNSIDE VERTICAL ANTENNA

Model

## CE-5SS

5 band self supporting

Unlike our Model CE-5B, this vertical needs no guy ropes and stands only 5 metres high, is very easy to erect and can be disassembled again into four pieces in about 45 seconds.

YES,  
ONLY  
**\$79**

Just the antenna to have in the boot of your car or caravan for quick portable operation and for JUST \$89 you can afford to have one for that occasion.

### Specifications

Frequencies ... 80M to 10M.  
Impedance ... 50 ohms at resonance.

Power handling ... up to 1 KW PEP on 20-15-10M, up to 400 watts PEP on 80M and 40M.

¼ wave length type operation.

Termination ... SO-239 socket.

Weight ... approx. 3 kg.

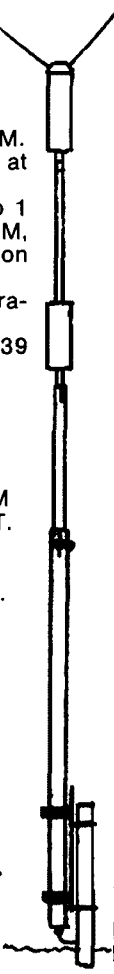
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## OBITUARIES

**MURIEL EAGLES** VK2AIA  
Muriel Eagles ex VK2AIA, of Strathfield, NSW, died on June 9th, 1982.

Muriel was 91 years of age. She was privately interred at Randwick cemetery.

Muriel was the devoted wife of the late Jim Eagles VK2AIA.

I first met Jim Eagles VK2AIA in 1949. On rare occasions one meets with active friendship and empathy. So it was with Jim. He had time for his friends.

After half a dozen years of this camaraderie Jim died, leaving a very distraught Muriel.

Muriel had learnt the code during WW2 and did in fact copy some useful things at that period.

After enormous encouragement, Muriel, who had never studied technical radio subjects, began to study for her amateur ticket.

Many question and answer sessions took place.

The first time she attended the exam she developed nerves and came straight home.

Once she passed though, there was no holding her! I took a modified No. 11 set to her home one Saturday morning, got everything going, and left her in contact with a pleasant fellow at Church Point; her first contact.

But after that!

Once she went on to SSB she became almost completely involved with on the air amateur radio.

Amateurs all over the world heard the distinctive voice which pierced all QRM far more effectively than those of ordinary mala amateurs.

She went to field days, took part in fox hunts, appeared on television, gained literally scores of awards. I've seen her being tossed around in my car on a bush track hanging on to young Florence, my daughter. I remember perceiving a somewhat stern look on such occasions.

Well, she was in her late seventies at the time.

For those old friends who wonder ... I have all her awards, even a photograph of her at five months.

Also Jim's first wireless telegraphy licence dated 1st July, 1914.

For the past several years Muriel had been resident in a nursing home and out of contact with most of her friends.

I do not feel really sad at the passing of a good old friend at the age of 91.

I remember the ambience of a thousand conversations, the memories of her girlhood, her reminiscences of Jim, old Char the cat, Teachers' College ... so many things.

I am so glad to have known Muriel. Deepest sympathy is extended to Muriel's younger sister, Emillie.

73, 88, Muriel, from your hundreds of friends world-wide.

Harold Burtolt VK2AAH

It is with very deep regret that news was received of the passing of Brigadier-General Kamchal Chotikul HS1WR, President of the Radio Amateur Society of Thailand. "Kam" was responsible for the development of amateur radio in Thailand in recent years and was also a staunch supporter of the IARU R3 Association. Sympathies are extended to his widow, a keen supporter of amateur radio, and also to his family.  
VK3ADW.

## SILENT KEYS

It is with deep regret that we record the passing of —

Mrs. M. EAGLES Ex VK2AIA  
Mr. R. A. EGAN VK2ARE  
Mr. CHARLES HIAM Ex XLD, Ex 3LW, Ex VK3LW  
Mr. R. V. JACKSON VK2NKK  
Mr. A. E. MOORE VK4VCM

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## HAMADS

PLEASE NOTE: If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.

- Eight lines free to all WIA members. \$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA current Call Book.

### TRADE HAMAOS

Conditions for commercial advertising are as follows: The rate is \$15 for 4 lines, plus \$2 per line (or part thereof) minimum charge \$15 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

**Amidon Ferromagnetic Cores:** Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R.J. & U.S. Imports, Box 157, Mordialloc, NSW 2223. (No enquiries at office: 11 Macken St., Oakley, 2223).

**CB Radios \$69;** walkie talkies, short wave radios, military, outback, business, amateur, marine, repairs, RTTY Siemens 100A printer \$120; base mic., \$45; ultrasonic alarm, \$35; all ham bands on a single 6 ft. whip. 1.8 to 30 MHz, for base or mobile, \$300; aeriels, installation, demonstrations, 40 ch. CB conversions, accessories, new rigs weekly. Bridge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW. Mail order service and all enquiries to 2 Griffith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066.

**QSL Cards** from \$7 per 100 to \$66 per 1,000. Send 35c stamp to Bint Services, PO Box 323, Cheltenham, 3192, for details/samples.

**EXCHANGE**

**BRNO Model ZH302 U/O Shotgun**, 2 sets of barrels for short and long range shooting (skeeet, trap, rabbit, duck), as new, current price \$730, for good quality oscilloscope. If interested phone Gosford (043) 24 7630. VK2DJH.

**WANTED — NSW**

**Antenna Rotator:** Medium duty antenna rotator with controller, in good cond. VK2KNW. Ph (02) 570 2063.

**Crystals:** 144 MHz, tx and rx, for channel 7 rpt., for use in a Ken KP202 txcvr. Reply VK2ABC. Ph. (02) 451 1513.

**Yaesu FTV250 2m Transverter**, to suit FT101E. Details to John Callicott VK2DXA, Box 750, Tamworth 2340.

**WANTED — VIC.**

**Breadboard and Plug-in Components** for Phillips practical electronics study course. I have books 1 to 6. The course is prepared by Phillips Educational Products and Systems. John Barbutto VK3VAI. Ph. (059) 89 6099.

**Kenwood TS-130S or Icom IC-701/PS-701.** Please contact VK3QM. QTHR. Ph. (03) 560 9215.

**Manual and Circuit Diagram** for AWA SSB sig. gen., type 1A95104 (serial No. 10). Can photocopy and return. Ken VK3KGX. Ph. (03) 658 3869 Bus., (03) 528 4229 AH.

**Medals:** Ex-serviceman and private collector wants military memorabilia and medals for collection, anything will be gladly accepted. Ph. (03) 221 5819 Wantirna South, Victoria.

**Receiver AR8** and accessories, also No. 19 or any WWII radio equip. Tim Vibert. Ph. (058) 21 9999 Bus., (058) 26 2427 AH.

**Valves:** A quantity 3TF7 (one or more) valves for 391 receiver. VK3ZNZ, PO Box 32, Ocean Grove, Vic. 3226.

**WANTED — QLD.**

**HP 410B VTVM** for parts, transformer and case must be in good cond. Wayne Kerr type B221 Bridge. VK4JZ. QTHR. Ph. (07) 44 7980.

**WANTED — SA**

**Clegg AB-144**, short-wave to 2m, converter, or circuit diagram, will arrange or pay for photocopying, as preferred. VK5NRL/ZRL. QTHR. Ph. (08) 271 0900.

**FOR SALE — ACT**

**Antenna:** Nagara V4Jr 4-band trap vert. antenna, \$55; Icom IC3PA AC PSU, in fitted carrying case with compartment to add your IC22 series txcvr. for a complete suitcase station, \$45. VK1CDR. QTHR. Ph. (062) 95 2352.

**FOR SALE — NSW**

**Antenna:** CE-42, 15-10m, duo band, by Chirnside Electronics. This unit, in p. cond., only 6 months use, has been repacked in orig. carton with full instructions. Urgent sale required as unsuitable to landlord in new QTH. A bargain at \$120. VK2KMH. Ph. (075) 36 4915 AH.

**Antenna:** Tri-band beam Hygain TH3 3 el., g.c., orig. packing, \$150. VK2EL. Ph. (02) 523 1293.

**Award Chasers:** Alphabetical list of Japanese cities and prefectures with JCC number; also New Zealand towns with counties, \$2 ea. PP. Bill VK2EBM/PFH. QTHR. VK2PFH.

**Deceased Estate Late VK2AML** 40 ft. wind-up lower, TH3JR triband beam, CDR rotator and indicator, Kyoritsu SWR meter, FDX400 txcvr., operating desk 74 in. x 34 in., various cupboards AM tx. with various meters tx. has low output beam tx., etc., in position for checking. Priced to clear \$550. ONO. 139 Bruce Street, Brighton, NSW 2216. Ph. (02) 59 6636.

**Dentron Clipperton-L Linear Amp.**, 160 to 10m, 4 x 572B tubes which coast along at the Aussie legal limit, brand new cond., not a scratch on the cabinet, has been used very little and with tender loving care. Bargain at this price, \$660, including freight. Hew VK2VW. Ph. (043) 88 3303 or (043) 32 9011.

**Hidaka VS-33 Beam**, 20-15-10, c/w instructions, as new, \$230; Icom IC22A 2m txcvr., FM, 1 or 10W, c/w inst. manual, mounting bracket, R2 to 8, S40 and 50, v.g.c., \$150; National R-R tape recorder, RQ706S, c/w schematic diagram and tapes, v.g.c., \$40; WARN free wheeling hubs, c/w inst., \$80. VK2KTO. Ph. (063) 42 2873.

**Icom 701 HF Txcvr.**, with power supply and desk mic., bought from Vicom, excel. cond., \$850; Yaesu FRG7.5/30 MHz rcvr., excel. cond., \$190. Mike VK2BMR. QTHR. Ph. (02) 639 8643.

**Kenwood TS520S** with op. manual and spare finals, \$420. ONO. VK2KLB. Ph. (049) 52 3053 after 4 p.m.

**Kenwood TS520S**, unmarked, spare tubes, orig. carton, \$495. VK2DHE. QTHR. Ph. (02) 82 1702.

**Kenwood TS900 Txcvr.**, power supply and access., needs minor repairs, bargain \$460. ONO. VK2ANX. QTHR. Ph. (02) 638 4191.

**Yaesu FT200**, no mods., incl. power supply, manual, some spares, \$300. Richard VK2AU. QTHR. Ph. (02) 523 1547.

**Yaesu FT207R**, 2m, hand-held, with manuals, charger and speaker-mike, ex. cond., no mods., \$200. VK2KNW. Ph. (02) 570 2063.

**FOR SALE — VIC**

**Alpha 77SX**, the ultimate linear amp., 1.6-30 MHz continuous coverage, pair 8877 tubes, inc. spare 2E26 and some other valves for tx/rx and manual, \$15; power rate 100 per cent duty cycle, new cond., with book and carton, genuine enquiries. VK3BTI. Ph. (03) 489 0817.

**Antenna Quad Hygain**, mod. 244, 10-15-20m, comp., in carton. VK3BTI. Ph. (03) 489 0817 AH.

**AWA Carphone MR10c**, comp. with PS, speaker, etc., mod. for 52 MHz, less xtals, inc. spare 2E26 and some other valves for tx/rx and manual, \$15; AWA remote control unit, type RC 1a, comp. AC PS, speaker, etc., inc. spare valves and circuit, \$10; Pyle Victor low band, easy mod. to 52 MHz, spare late TV valves and PA QOE/3-10, circuit avail. if req., \$12; valves — QQE6/40, QQE3/20, 815, QQE4/20, EM80 6AG7, sockets for QQE6/40. Best offers. Licensed amateurs only. VK3EM. QTHR. Ph. (03) 578 7745.

**Comp. Station for Sale:** FT101E, unmod., base and hand mics., Hidaka VS33 triband yagi, Emotator med. duty rotator with cable, 35 m, 35 ft. free-standing tower, 35m RG58/AU coax, Helray PEP meter (novice), assorted meters and switches, plus many shack items, sell the lot, will not separate, \$1,000. Bob VK3AWN. Ph. (03) 616 4485 WH.

**Computer:** 4016 Commodore, ex. cond., comp. with tapes and games, cost \$1,350, sell \$850; Icom IC211, ex. order, swap for Icom 490 or IC551 in like order, or sell, \$550. VK3GM, 15 Wendouree Parade, Ballarat 3350. Ph. (053) 32 7157.

**Deceased Estate VK3OL:** Yaesu txcvrs., FT101 and FDX570, both with mics. and handbooks, Kenwood FT2200G VHF txcvr., Gemtronics GTX336 CB txcvr., with handbook, Tech TE22 audi gen., Sanwa SWG301 test osc., Sanwa P18 multi-tester, CRO disposal home-brew, SCR221J freq. meter with calib. book, Sony-O-Matic R to R tape deck, prices ex dispersal location, offers considered. Ph. (03) 836 0707 9 to 5 weekdays.

**Ham Shack Clear-out:** FT7 txcvr., \$400; YC7B dig. readout, \$100; 6 amp power supply, twin meters, \$50; YD148 desk mic., \$35; Yaesu ant. tuner, FC707, \$110; total \$695. Allen VK3NBC. Ph. (03) 798 4075 AH.

**Healthkit SB200 Linear Amp.**, ex. cond. near new, 572 Bs. VK3ARZ. QTHR. Ph. (03) 584 9512.

**IC502 6m Txcvr.**, ex. cond., has worked many DX stations. Have new rig, no further use, \$150. Robert. Ph. (03) 347 6264 Bus., (03) 347 2069 AH.

**IC701**, immac. and ex. order, station update sale, IC260, immac., only 12 mths. old, orig. packing, better buy than new IC25A, station upgrade, would consider exchange for IC490, negotiable. VK3GM, QTHR. Ph. (053) 32 7157.

**Kenwood TS520S**, 160-10m trsvr., virtually unused and absolutely immac., includes MC50 mic., manual, see or hear working, \$450, or genuine offer. Ron VK3VRB. QTHR. Ph. (03) 560 9018.

**Kenwood R820 Rx.**, 160-10m, plus SW bands, AM, SSB, CW and RTTY, dig. readout, IF shift, P/B tuning, notch filter, transceive capability with TS820, with matching woodpecker blander, as new, in carton, \$550. ONO. VK3ARZ. QTHR. Ph. (03) 584 9512.

**Kenwood TS700A** all mode 2m txcvr., 144-148 MHz, all solid state, 12V DC and 240V AC, PSU built in, with NB, xtal calib., RIT, mic., hand book, 4 yrs. old, exc., cond., no mods., \$320; Kenwood TS520S HF SSB/CW txcvr., 100W PEP out, 160-10m, mic., hand book, little used, no mods., 3yrs. old, as new cond., in orig carton, \$525. Bruce VK3UV, QTHR. Ph. (03) 580 6424 AH.

**KW Viceroy Mk. 2 SSB Tx.**, 80/10m, all valve with 6146 finals, incl. xtal mic., 240V power supply, connecting cables, circuit diagram and operating inst., \$200. VK3AVV, QTHR. Ph. (03) 859 1752.

**Motors:** Stepping motors, American Slo-Syn., MO92-FC08, 1.8 degrees step angle, 3V, 4A, (3) new in pack, \$100 ea. Ph. (03) 61 3144.

**Yaesu FT101E, AC/DC**, c/w fan, cables, instr. manual, hand mic. and Leason TW232 desk mic., covers 160-10m with 30m and 11m fitted, has RF processor inbuilt, \$450. Chris VK3DAX. Ph. (03) 560 5335.

**Yaesu FT101E HF Txcvr.**, good cond., fitted with 11m, covers 160-10m, all accessories and service manual, \$600. ONO; Yaesu FT208R 2m hand-held, 2 mths. old, in carton, all access., incl. GFS 5/8 telescopic antenna, 12V DC car adpt. and hand mic., \$420. Jack VK3DIU. Ph. (03) 338 2282.

**Yaesu FT101EE, AC-DC**, cool fan, attached G3LLL speech clipper and SWR meter, spare new finals and driver tubes, maint. book, all g.c., \$525. VK3AMC, QTHR. Ph. (03) 592 9036.

**28 MHz Yag.** 3 el. and coax, \$40; prop-pitch motor, transformer, 56 ft. 5-core cable and Selsyn inds., \$60; Command rx, 455B, 6-9 MHz, unmod., \$20; FT101 hand book, AC lead, mic., \$7; 2 x 6SJ6C, \$20; 1 x 12BY7A, \$2; Ireq. counter Micronator, 100 Hz, 45 MHz, \$60; 100 kHz xtal, \$5; Yaesu FT7 txcvr., \$300; 4 x heliwhips, 7 to 10 MHz, \$25. VK3PZ, QTHR. Ph. (03) 288 1047.

**FOR SALE — OLD.**

**Teletype Paper**, \$1 per roll or \$10 per box of a dozen, post./cart. extra. Box of 12 weighs 10 kg. The Secretary, the South East Queensland Teletype Group, PO Box 184, Fortitude Valley, Old., 4006.

**FOR SALE — SA**

**Icom IC260A**, 2m, all mode, superb unit, orig. cond., twin VFOs, memories, reverse facility, squelch on SSB, selectable AGC, etc., with IC-HM10 scan/search mic., all access., carton, manual, \$450. VK5AVR. Ph. (087) 62 2034.

**Valves:** Tx valves, new, 4-65A, QE3-300, 2 x 807, 2 x 866A, 1 x 4CX 250B, 1 x VCR and socket, used, but as new, 1 x 4 x 150A (7034), 4E27 (8001), 829B and socket, 815. New less 816 — 2 sets valves for KW2000, used but OK, 1 set valves for KW2000. Receiving valves, 150 octal sockets and glass, various pins, AM tx., 160m to 6m., 829B in final. VK5LC, QTHR.

**Yaesu FT707** and mic., \$670; Scalar 2m mobile stub with triband attach., with 80m, 15m and 10m resonators (10m resonator needs repair), \$50; Yaesu desk mic., \$30; equipment at QTHR in Adelaide. VK5NFI. Ph. (08) 276 8353.

**FOR SALE — WA**

**Yaesu FT107M/DMS**, with scanning mic., manuals, in box, very seldom used, still in unmarked brand new cond., \$950. ONO. John VK6NJM, 31 Chaplin Street, Esperance 6450. Ph. (090) 71 2897 AH.

**FOR SALE — TAS**

**Icom 701PS**, 20A power supply, built-in speaker, matches Icom 701 txcvr., p.c., orig. pack., \$125. VK7MG, QTHR. Ph. (002) 57 8220.

**Yaesu FT101ZD**, inc. FM board, new, \$800; FV901DM scan VFO, new, \$225; accept offer for both, boxes, etc. VK7AN. Ph. (003) 31 9455 Bus. (003) 31 7914 AH.

# HAMADS MAKE IT HAPPEN



## YAESU FT-102 HF ALL MODE TRANSCEIVER

### IF Transmit Monitor

An extra product detector allows audio monitoring of the transmitter IF signal, which enables precise setting of the speech processor and transmit audio so that the operator knows exactly what signal is being put on the air in all modes. A new "peak hold" system is incorporated into the ALC metering circuit to further take the guess-work out of transmitter adjustment.

### New VFO Design

Using a new IC module developed especially for Yaesu, the VFO exhibits exceptional stability under all operating conditions. The circuit design is extremely simple, using only axial-lead components.

### Better Dynamic Range

The extra high-level receiver front end uses 24 VDC for both RF amplifier and mixer circuits, allowing an extremely wide dynamic range for solid copy of the weak signals. For ultra clear copy on strong signals or noisy bands the high voltage JFET RF amplifier can be simply bypassed via a front panel switch, boosting dynamic range beyond 100 dB. A PLL system using six narrow band VCOs provides exceptionally clean local signals on all bands for both transmit and receive.

### Total IF Flexibility

An extremely versatile IF Shift/Width system, using a totally unique circuit design, gives an infinite choice of bandwidths between 2.7 kHz and 500 Hz, which can be tuned across the signal to the portion that provides the best copy sans QRM. A wide variety of crystal filters for fixed IF bandwidths are also available as options for both parallel and cascaded configurations. The 455 kHz third IF also allows an extremely effective IF notch tunable across the selected pass band to remove

interfering carriers, while an independent audio peak filter can also be activated for CW reception.

### New Noise Blanker

The new noise blanker design enables front panel control of the blanking rules width, substantially increasing the number of types of noise interference that can be blanked, and vastly improving the utility of the noise blanker for all types of operation, including woodpecker blanking.

### Transmitter Audio Tailoring

The microphone amplifier circuit incorporates a tunable audio network which can be adjusted by the operator to tailor the transmitter response to his individual voice characteristic before the signal is applied to the superb internal RF speech processor.

### New Standard of Purity

Three 6146B final tubes in a specially configured circuit provide a freedom from IMD products and an overall purity of emission unattainable in two-tube and transistor designs, while a new DC fan motor gives whisper-quiet cooling as a standard feature.

### FV-102DM Synthesized, Scanning External VFO

The FV-102DM provides the FT-102 with the advanced frequency control necessary for optimum operating convenience where seconds count. The PLL synthesizer steps at a 10 Hz rate, while slow or fast scanning can be controlled either from the push buttons on the front panel or directly from the microphone connected to the FT-102 (when a scanning microphone is used). Up to twelve frequencies can be memorized by the FV-102DM, entered from the FT-102, FV-102DM VFO or from the front panel numerical keyboard. Additional front panel controls include plus-and-minus 5 kHz and plus-and-

minus 20 kHz stepping buttons, VFO dial lock, last digit blanking, and transmit/receive Main/VFO/ memory selector buttons to allow any combination of frequency controls. The VFO dial can also be activated as a clarifier for a selected memory, while the five digit fluorescent display shows the operating frequency with resolution to 10 Hz, if desired.

### FC-102 Antenna Coupler

The FC-102 is a newly designed antenna tuner. With a power handling capability of 1.2 kW, the bandswitched L-C pi-network will match a wide variety of antennas (including a single wire) to your transceiver or linear amplifier on all HF bands. New design features include an in-line wattmeter with three ranges (20, 200 and 1200 watts full scale), and a "peak hold" system that enables the operator to observe peak power. A separate SWR meter is also built in for antenna tuning indication. The FC-102 includes internal relays to provide low-loss push button selection of two different antennas (and two transmitters), while the optional FAS-1-4R Remote Antenna Selector may be mounted either inside the FC-102 or right on your tower, to allow selection of four additional antennas. When remotely installed, the FAS-1-4R is connected by a control line to the FC-102, eliminating the need for costly multiple feedlines.

### SP-102 External Speaker/Audio Filter

The SP-102 features a large (120 mm) high-fidelity speaker with selectable low-and-high-cut audio filters allowing twelve possible response curves. Headphones may also be connected to the SP-102 to take advantage of the filtering feature.

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W0620



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VOL. 50, No. 9 SEPTEMBER 1982  
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**This months features include**

- ★ ***DXERS PARADISE***
- ★ ***REVIEW OF FT-ONE***
- ★ ***EXOTIC MODULATIONS***
- ★ ***LICENSING IN PACIFIC ISLANDS***

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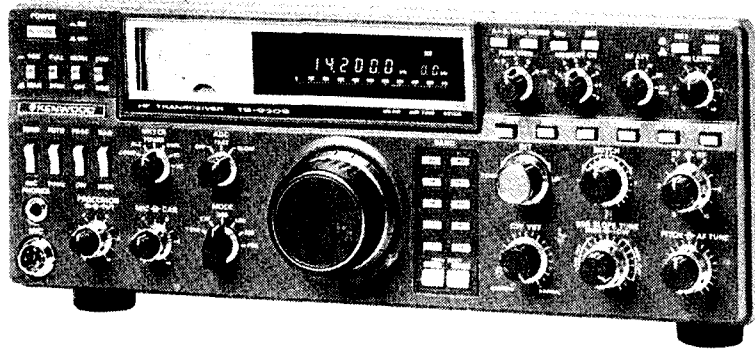
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# amateur radio

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## COVER PHOTO



RAAF P3 Orion pictured over the antennae on Willis Island. Whilst on this reconnaissance flight, the crew dropped newspapers and fresh fruit to the islanders.

Photo: Courtesy Dave VK3DHF



# WIA NEWS

## FEES

The following is the text of a letter dated 23rd July received from the Minister for Communications as relevant to WIA NEWS in August AR:—

*"Thank you for your letter of 5 July 1982 concerning radio-communication licence fees. I have noted your concern and would like to assure you that the Government in introducing the Radiocommunications Licence Fees Act 1982 and the Radiocommunications (Miscellaneous Provisions) Act 1982 acted as a matter of urgency to protect the radiocommunications licence fee structure from legal challenge.*

*It is not the Government's intention to recover more than the costs of radio frequency management from licensees. In achieving this aim the Government will ensure that costs are shared equitably among all classes of licensees with each class bearing its share of the costs of efficient radio frequency management.*

*The Government has agreed to some concessions for television stations only on a phase-in basis as their fees rose very substantially this year on implementation of the user pays principle. The costs of these concessions will not be charged to other users such as WIA members.*

*I am glad to know that the WIA generally accepts the user pays principle and understand fully your aversion to amateur operators subsidising commercial users. I can assure you that this has not happened in the past and the Government has no intention that it should happen in the future.*

*I also appreciate your views regarding amateur examinations and fees. My Department has examined the matter following your discussion with Mr. Ramsay and has advised me that all the WIA points can be met, namely:—*

- adequate notice will be given of increased examination fees and the new basis for charging these fees;
- examination pass credits will be retained for two years; and
- licensed amateur candidates for higher sections will retain examination credits (includes Morse code credits) previously attained.

*Further, the Department will not make a separate charge for the Amateur Operator's Certificate of Proficiency after the examination requirement has been met.*

*I appreciate the efforts of your organisation in representing the interests of amateur radio operators and wish to assure you of the Government's continuing high regard for the WIA and the amateur fraternity."*

At a joint WIA/DOC meeting on 28th July the Institute representatives pointed out in unequivocal terms that the WIA generally does NOT accept the principle of the "user pays". It was also clarified with DOC, at that meeting, that if an unlicensed person obtains a licence during the validity of a pass in, say, Morse sending at a higher speed, he would continue to retain that credit indefinitely.

## THIRD PARTY — USA

To mark the successful conclusion to the third party arrangement with the USA the following messages were conveyed by amateur radio between the Federal President of the WIA and the President of ARRL:—

SENT —

*"Vic Clark W4KFC  
President ARRL  
225 Main Street  
Newington CT 06111, USA.*

*I am very pleased to be able to make use of the recently established third party agreement between our two countries to convey my greetings to you and the*

*members of the ARRL. Stop.*

*Hoping for a continued close association between our two Societies. Stop.*

*Peter Wolfenden VK3AU  
President WIA."*

RECEIVED —

*"Peter Wolfenden VK3KAU  
President Wireless Institute of Australia*

*ARRL sends greetings and congratulations on the successful conclusion of negotiation of the third party agreement between our two countries. We expect this will enhance the traditionally strong ties between the radio amateurs of Australia and North America.*

*73.  
Vic Clarke W4KFC  
President ARRL."*

The messages were exchanged between VK3ADW and W1AW.

The conditions relating to the third party arrangement with the USA included in WIA NEWS of August 1982 AR, page 4, have been confirmed in writing by DOC (letter RB4/4/6 of 14/7/1982).

## INTRUDER WATCH

Bill Martin VK2EBM, 33 Somerville Road, Hornsby Heights, NSW 2077, is our new Federal Intruder Watch Co-ordinator in place of Bob McKernan VK4LG, who has had to stand down for pressure of business reasons.

## EXECUTIVE OFFICE

Resulting from the retirement of Peter Dodd VK3CIF, the new Executive Office Manager and WIA Secretary is Mr. R. J. Macey.

## 1982-83 CALLBOOK

The New Call book should be ready for distribution about the end of this month. All details for inclusion in this Call Book closed off on 28th July. This promises to be our best and most informative Call Book produced in Australia. The price will be \$4.20 (PLUS postage to interstate of \$1.00), subject to any last minute unexpected changes.

## RTTY BAND SEGMENTS

August AR, page 5, refers: The Executive decided that no support can be given at this time to designating gentlemen's agreements for this mode on the grounds that HF band segments for special modes would create undue problems to other users of the HF bands. Single frequencies are set out in the Call Book for various special modes on HF but in practice, operators on a mode, will spread out either side of the spot frequency depending on the number of stations operative to reduce QRM amongst themselves.

## JOINT WIA/DOC MEETING

Several questions were discussed on 28th July. Among them were call signs for visitors. Suggestions included (a) a separate call sign suffix series such as VKxF -- and (b) home call/VKx (e.g. W1DV/VK2). The designations of emissions (AR September 1981, page 26) for amateurs was another item. It was put forward that the inclusion of bandwidths in respect of amateur emissions was unnecessarily clumsy — those were maxima and in several overseas countries were omitted anyway. A further item discussed related to Government preparations in Australia for WCY 83. Additionally this was ITU Resolution 640 and the work required of administrations — outlined in WIA NEWS August AR — and the perceived need for additional third party arrangements with neighbouring countries. The Australian Tables of Frequency Allocations had still not been published.

## AWARD

Congratulations go to Dick Giddings VK3DG, of Lancefield, upon being honoured with the Order of Australia in the honours list. ■



# QSP



## Communications

It is becoming a slightly hackneyed phrase that "We call ourselves communicators but we do not communicate very well". We may not like the jibe but perhaps there is some truth in it. I think that there is probably a bit of "crocodile" in each of us.

In the last five years, the number of members in the Institute has more than doubled and the internal communication methods that were adequate then are, perhaps, no longer valid. What should be done? Perhaps an insight into one Division's methods can assist.

The Queensland Division has approached the problem by supplementing its news callback sessions with two weekly on-air nets conducted by Council members. These nets provide excellent opportunities for members and Council alike to exchange views. In addition, the Division conducts an annual Radio Club Workshop where members, through their club delegates, guide policy at a Divisional level as well as assisting in the briefing of the Federal Convention delegates. These activities reflect a Divisional strategy of communicating with members through their clubs; the success of which can be gauged by counting the number of active VK4WI club stations. The next stage for development concerns the establishment of better communications with members unable to join clubs for one reason or another.

Well, next year is World Communications Year and perhaps time to make further progress. Let us take the opportunity to examine communications between the Institute and its members and see if we can help our "crocodiles" to grow bigger ears.

DAVID LAURIE VK4DT  
VK4 Federal Councillor



# QSP

### "A TALE OF TVI"

A friend of mine (who shall remain nameless) told me a story recently which I think deserves to be shared with those of you who have had TVI problems.

My friend was relaxing in his shack, and having a merry time on his radio, when a knock came on the door and there appeared a neighbour from several doors away who complained that his TV set was suffering interference.

My friend, who is obliging and diplomatic to a fault, of course offered to go and inspect the said TV set and try and find a solution to the problem.

Complainant and complainee set off down the road, duly arriving at the house of the complainant, where he was ushered indoors to view the offending TV set. Politeness and courtesy was rampant on both sides. Tea and cakes were produced, and both examined the recalcitrant receiver. Antenna was found to be apparently satisfactory and a high-pass filter was in evidence at the set.

"Should be OK," my friend said. "Let's have a look at it."

Set was switched on, and both settled down to examine the problem in detail.

Beautiful picture, fine audio. Some time went by and suddenly the TV receiver went beserk.

Complainant jumped to his feet, triumphantly exclaiming and pointing to my friend, "There you are, see what you're doing?"

Bill Martin VK2EBM.

PS: If you heard VK2VWZ on the air, ask him about it!

### 50-54 MHz In ZL

The President of the NZART wrote to the Chairman of the Broadcasting Corporation of New Zealand late last year asking when NZ TV would follow other countries and vacate VHF Band 1 TV and move to UHF and when are TV Channel 1 and 2 TV transmitters due to be replaced because amateurs using the segment 51-53 MHz suffer interference from the suppressed (vestigial) lower sideband of the transmission. The text of the reply received, as printed in Break-In, January/February 1982, read:—

"Thank you for your letters of 10 May and 18 September. I apologise for the long delay in replying. The engineers responsible for our VHF planning have been very busy this year extending TV2 coverage and also at the FM enquiry.

To answer your question — firstly, we have no plans to vacate VHF Band 1. The circumstances which may have given rise to this move in some overseas countries do not apply in New Zealand, and in any case, have usually come about as a result of a change in the basic Television Standard (line structure, channel width, etc.).

Band 1 channels have enabled excellent coverage to be achieved in New Zealand, especially to country areas, and it is extremely doubtful that these results could be duplicated on UHF without incurring very high and unnecessary costs.

The correct usage of the UHF band for television transmission in New Zealand will be for additional programme services in more heavily populated areas.

The replacement of existing transmitters is a matter of BCNZ internal priorities and will take into account operating and maintenance costs, availability of spares and other demands on Corporation finances. All transmitters comply with Post Office Regulations for out of band radiation (although it is acknowledged that low quality receivers working in close

proximity to high power stations may suffer from overloading)."

The band 51 to 53 MHz has been granted to NZ Grade III operators from 1/1/1982 and 50-50.15 MHz is not available except under special conditions

### THE TATE FAMILY

An oldie, from several sources  
Ever hear of the Tate family? I was introduced to them recently. There is the head of the family, "DIC" Tate, who wants to run everything. Uncle "RO" Tate tries to change everything around, and his sister, "AGI" Tate, likes stirring everything up whenever she can. Nephew "IRRI" Tate always rubs people the wrong way, and nieces "HESI" Tate and "VEGE" Tate like to pour cold water on every proposal. Then there is Auntie "IMI" Tate, who is all for trying something new just because she has seen someone else doing it. And, of course, last but not least, cousin "DEVAS" Tate can always be counted on to throw a wrench into the works.

You are sure to know the Tates because one of them sits on every committee, lives on every street, joins every club, works in every office, every factory and every shop. They are usually counted upon to turn up at every public function. Watch out for them and beware as you may wind up becoming a member of their family circle.

(WIA members are no exception — VK3UV, Ed)

# Andrews Communications Systems PRESENTS YAESU'S FT-102 "Super DX'er"



SP 102 \$69.00

FT 102 \$999.00\*

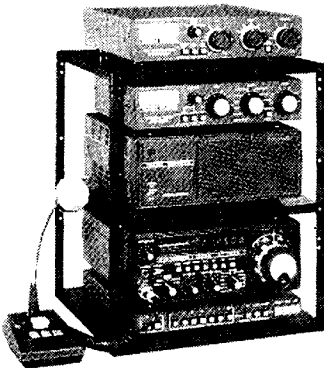
FV 102 DM

FC 102 \$275.00

SP-102 . . . \$999 FV-102DM FC-102 . . . \$275

The FT-102 uses 3 x 6146B's in P.A. for -40dB IMD @ 100W on 14MHz. Receiver dynamic range is typically a superb 101dB @ 0.25µV on 14MHz! 160-10m inc. WARC. Shift/Width, peak/notch tuning, N.B., and much more . . .

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FP-707 . . . . . **\$169** (RRP \$170)  
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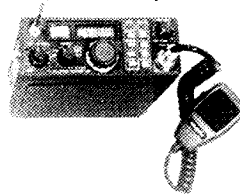
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FV-707DM . . . **\$249** (RRP \$259)  
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FM/SSB/CW 2M 2.5W Portable 10ch PLL, LCD Readout, Scanning, use Jumbo HP-50V for 50 W O/P

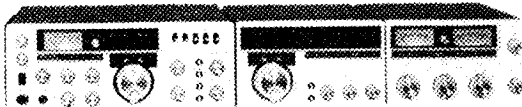
FT-ONE New version due soon . . .

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FT-208R 2m h/held **\$298**

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FV-107

FC-107  
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Also FT-107, without memory, current model with WARC, in Stock \$765 (without AC)

BEWARE OF THOSE OFFERING NON-WARC RADIOS!

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IC-2KL **\$1,279**  
IC-AT500 **\$449**  
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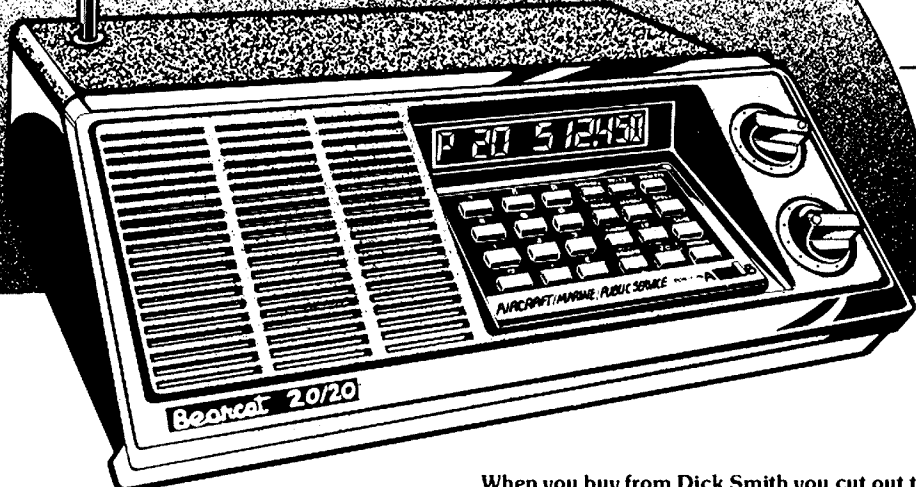
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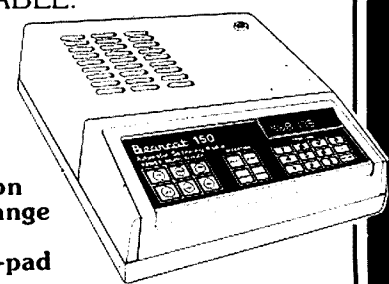


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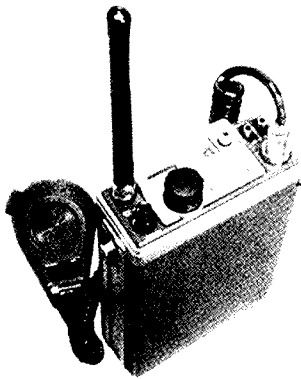
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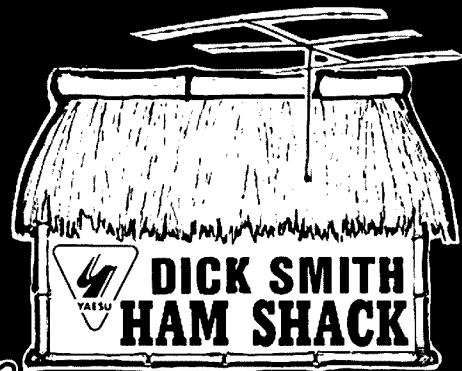
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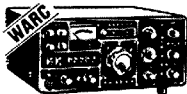
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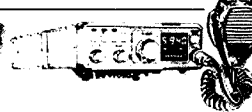
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**NEW**

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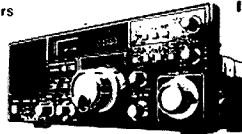
68-600 MHz comes with cutting chart. 110cm long stainless steel super for UHF CB & 2m amateur & 70 cm amateur & our new scanners. Cat D-4023

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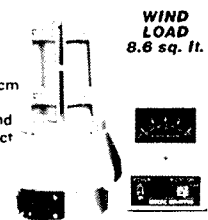
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with control box. Rotation torque: 500kgcm Braking torque: 1500 kgcm. For VHF/UHF and small HF beams - perfect for TH 3JR (above). Cat D-5000

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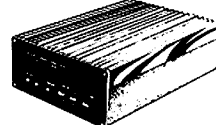
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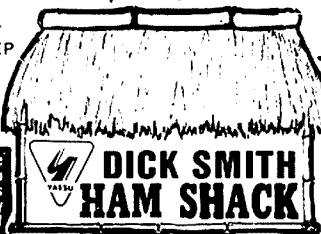


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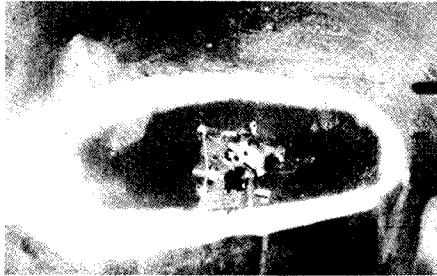
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Willis Island is an Australian Possession situated in the Coral Sea with co-ordinates, latitude 16° 17' 16" and longitude of 149° 57' 50". Initially established in 1921 as a coastal radio station, operated by AWA, it is now a Commonwealth Meteorological Bureau Weather Station and its observations are used in the preparation of routine forecasts. These reports also have an important role in the tropical cyclone warning system. Australian amateurs, during a tour of duty on the island, have given many a new DXCC country.



FROM THE AIR

OR



RISING MAJESTICALLY FROM THE SEA

## Willis Island is A DXers' Paradise

Ken McLachlan VK3AH  
Box 39, Mooroolbark 3138

### EARLY HISTORY

Credit for the establishment of the island goes to Captain John King Davis, who earlier gained fame as commander of the "Aurora" during the Australasian Antarctic Expedition from 1911-1914. (Australia's Antarctic Station at Davis commemorates his name.)

Captain Davis saw the value of establishing a station that would be able to forecast and relay valuable meteorological data back to the mainland. Objections were raised by his superiors as to the dangers that would be encountered by the party, however he dispelled these fears by volunteering to lead the first party himself. He engaged a working party of fourteen, which included two radio operators, and organised 150 tons of provisions, equipment, building materials and chartered a vessel for transport.



Winching up timber from the beach

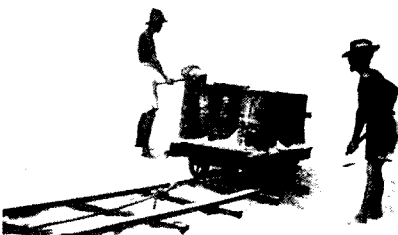
of two 26 metre high radio masts and the installation of the radio and meteorological equipment. This was accomplished in just three weeks and the island was claimed for the Australian Commonwealth by a flag raising ceremony on November 7th. Next day, at 9 a.m., Captain Davis radioed the first meteorological observation from the island.

During the 1920s the station was manned by a Bureau observer and two operators during the cyclone season, and by two operators only during the north-east trade wind season, with wireless operators from Amalgamated Wireless (Australasia) Ltd. (AWA). In the 1930s, from June 1931, it was staffed by only two AWA personnel, but the Bureau returned to the scene with the outbreak of World War Two. After the war the Overseas Telecommunications Commission assumed responsibility for radio communications and in 1966 the Bureau took over sole control, which it holds to this day.

### THE ISLAND

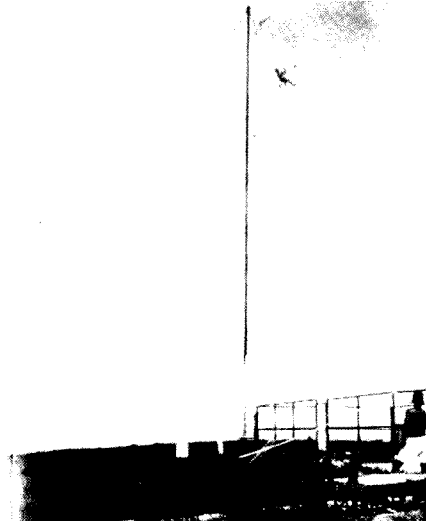
Willis Island has an area of some fifteen acres and is approximately 520 metres long by 130 metres wide, and 9 metres above sea level at low tide. It is a coral reef with no natural soil, but some has been deposited there for growing vegetation. This has not been fully successful, and it could not be termed a gardener's paradise. At low tide the rock pools are exposed, showing the colourful coral and an abundance of picturesque fish that inhabit them.

Entertainment on the island is limited, but has been updated through the years. A television set is installed but conditions vary and there is no guarantee that you will see the end of the "Who dunnit" movie.

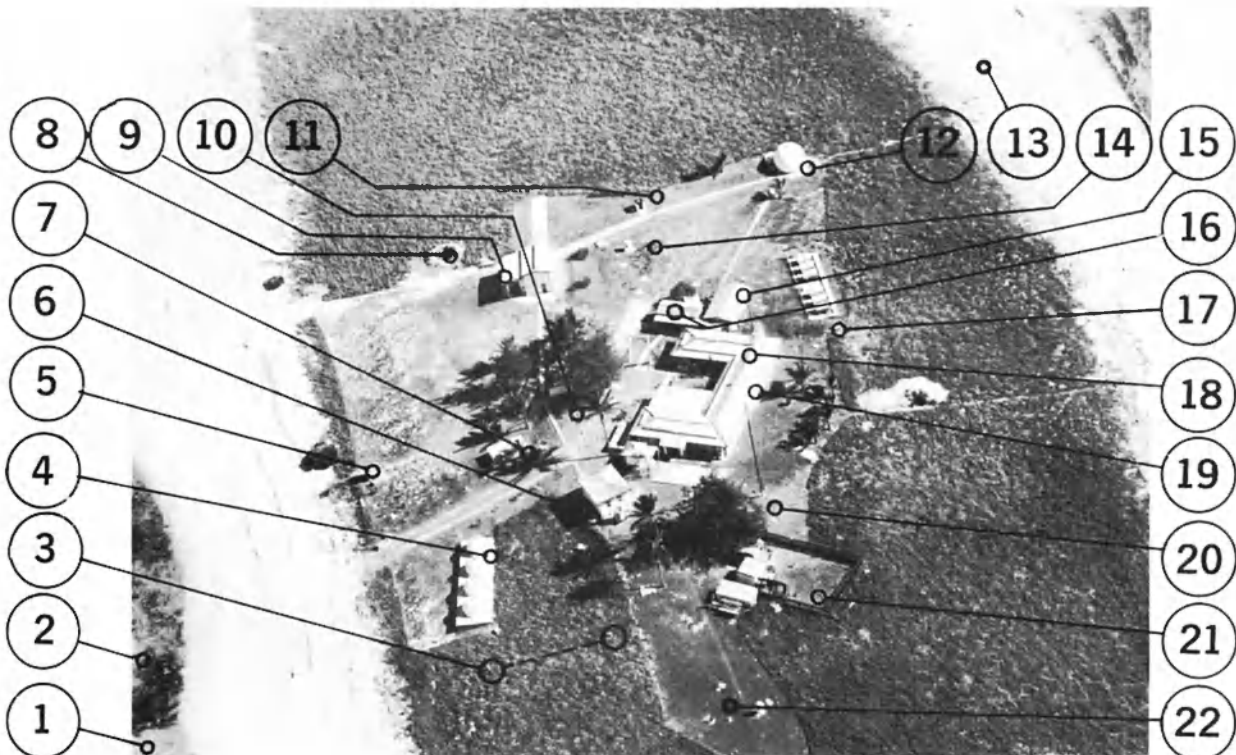


Repairing the tramway in the early days

This party set foot on Willis on October 14th, 1921, and settled into a rugged period ahead. Firstly they built a tramway from the beach to the site of the buildings for the ease of transport of materials and equipment. The priority order was habitable living quarters, a wireless hut, the erection



Painting the guy wires



An aerial photo guide to island showing (1) LARK access to the island, (2) Coral Sea, (3) Navigation Markers, (4) Freshwater tanks, (5) Fire and saltwater supply pumphouse, (6) Storage shed, (7) Concrete Bunker, (8) Rubbish burning pit, (9) Hydrogen generation and Balloon Shed, (10) BBQ area (for entertaining??), (11) Theodolite, (12) WF2 Tracking Radar, (13) Beach (coarse and sharp coral sand), (14) and (22) Stevenson's screens (contain temperature measuring equipment), (15) Generator Room and Amateur antennas, (16) Workshop, (17) Diesel storage tanks, (18) Meteorological office and Transmitters. (19) Sleeping Quarters, (20) Aerial mast with TV antennae, (21) Chook pen and run.

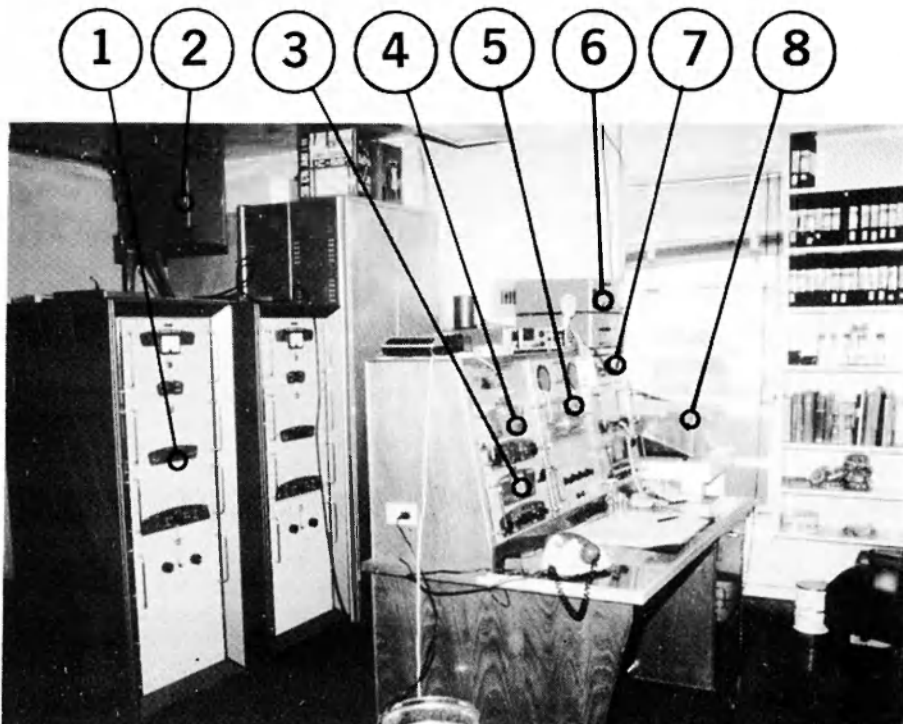
In latter years the 16 mm projector has been superseded by a video cassette player for playing feature length movies from the library, a hi-fi is available for music tapes, a table tennis and billiard table are provided. There is also a well stocked library for the avid reader. The only form of communication is by radio and, of course, amateur radio when an amateur is there for a tour of duty.

The island is attractive, having established coconut palms which provide welcome shade and plenty of coconut milk for those that like it, also a hit on the head if you are not wary during periods of high winds or when they are ripe. They also provide a tropical setting for the buildings, which are surrounded by grass areas which were kept neat and trim by hand mowers pushed by the duty crew for "exercise" prior to the provision of a VICTA motor mower! Concrete paths lead to the balloon launching area, radar deck and the beach.

Since the late 1940s, the buildings have received two major "re-builds", first in 1950 and then in 1968, coinciding with the installation of radar equipment at the station. The present amenities room, which contributes so much to the station's excellent conditions, was added in 1979.

#### COMMERCIAL EQUIPMENT

Prior to 1966, the Overseas Telecommunication Commission (OTC) used AWA transmitters and receivers. Power output of



A view of the transmitter room showing (1) Main Transmitter Rack, (2) Aerial Switching Box, (3) SSB Receivers, (4) Station Control Unit, (5) Shortwave Receiver, (6) Emergency 100 watt Transmitter, (7) Selective Call Unit, (8) Video Cassette Recorder.

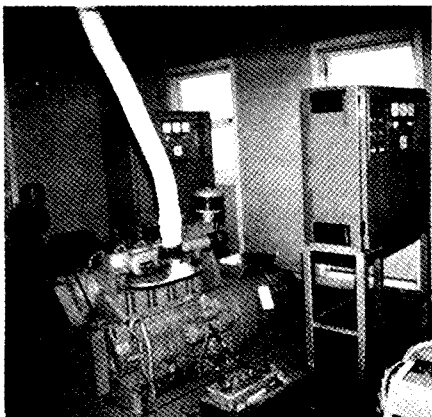
these transmitters was 100 watts and 500 watts using frequencies of 6.990 and 9.040 MHz, with an additional frequency of 500 kHz. In 1966, when the Bureau of Meteorology took over control of the Island, the old equipment was replaced with two RACAL RA87 receivers and two RACAL TA83 500 watt SSB transmitters. Two "lattice" type masts supported dipoles for 3.315, 5.827 and 9.072 MHz orientated for contacts with Townsville, the nearest bureau station, and a frequency in the 6 MHz marine band was used as a liaison with the OTC.

In 1968 3 cm WF2 wind-finding radar equipment was installed. Two 24 metre high marine aluminium masts using stainless steel rigging were erected to replace the existing towers and new dipoles with baluns were installed. Additional equipment in the update included a control console and a 100 watt AWA SS210 back-up transceiver.

The dipoles were replaced in 1973. During the crew change-over in December 1980, a landing craft accidentally caught the guy wires of one of the antenna masts causing it to "bite the coral". Early the next year saw that same mast re-rigged and reinforced as, on examination, it was found to be badly corroded at the base due to climatic conditions over the years.

Another change in 1981 was the introduction of an HF sloping multi-band 5-30 MHz triangular antenna orientated for communication with Brisbane. The apex of the triangle is at 24 metres, each leg being 86.1 metres and sloping down to 3 metre masts. Sixty-six metres is the base measurement on which is centred a load termination. This antenna has an expected power gain of 6 dB at 8 MHz and 10 dB at 20 MHz, with a typical SWR, as claimed by the manufacturer, to be less than 2 : 1.

Further updating of this important meteorological outpost consisted of replacing one set of the RACAL units with a CODAN 7010/7021 500 watt transmitter and several CODAN 7004 HF single channel receivers complemented by a CODAN 7702 control unit. The back-up transceiver was replaced with a CODAN 6801, which can run 100 watts PEP on SSB. Another antenna, a half Delta (AEA 4104) with a nominal frequency range of 2-16 MHz, was

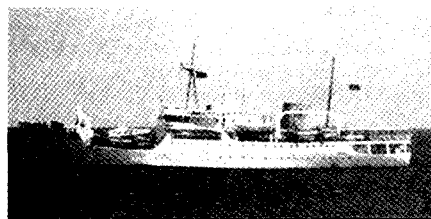


Generator Room

installed broadside to Townsville. Helical whips for each frequency have been installed and connected to the remaining RACAL equipment.

Powering the necessities on this remote coral outcrop is cared for by three 32 kVA 4 cylinder Deutz diesel alternators. One being on line at all times for provision of power for domestic and electronic equipment. Each alternator is rotated for service and regular maintenance. Fuel supplies are replenished at the time of change-overs.

The meteorological observers do work rostered shifts to allow the station to be operational round the clock. Each member of the group take turns with the household duties which include the cooking and the inevitable "washing up" chores. Provisions are kept in four freezers and a well stocked coolroom that in the early stages of a "Tour of Duty" also contains an adequate supply of liquid refreshment.



Crew changes are effected by Lighthouse vessel. The "Cape Pillar" was used in 1981.

A tour of duty is generally in the vicinity of six months duration. Crew changes and the replenishment of supplies are carried out by the Lighthouse vessel allocated to that area. One person, Captain Harold Chesterman, as Captain of firstly the "Cape Leeuwin" and later the "Cape Moreton", made more than 50 trips to exchange crews between 1947 and his retirement in 1978.

Once there and after change-over formalities and fresh supplies are taken ashore by a LARK which is an amphibian vessel attached to the supply vessel, the crew are on their own for the six month period. However, an aerial drop of essentials such as spares, mail and other necessities is usually carried out at the mid point of the tour by the courtesy of the RAAF, a service which has been provided by them for the past 28 years. Some humorous stories can be told about when a drop does not go according to plan, like when the wind carries some of the parachuted "storpedoes" off the destined landing point into the sea and retrieval by devious means is the order of the day, to reclaim maybe the mail and recent newspapers or at one time some metal "807s" sent by a friend to replenish the dwindling stocks.

Temperatures on this idealic island generally range from 20 to 30 degrees C with the highest recorded temperature since 1939 being 34.8 degrees C in mid-December 1959, and the lowest, a reading of 17.2 degrees C, in mid-July 1965. Research showed that the lowest daily maximum ever recorded on the island occurred on the previous day to the record of the

lowest temperature. The typical relative humidity varies between 60 and 80 per cent.

It is no wonder that Brian McGurgan is now on his ninth duty trip, this time as OIC of the Island Weather Station, and his tour of duty will end in December this year. Another amateur, Bruce Aubrey VK4AU, the Bureau's Regional Maintenance Officer in Queensland, has made in excess of thirty trips to the island in the last twenty years, and Bruce is credited with being largely responsible for the improvements that have taken place.

#### AMATEURS ON WILLIS

One early amateur on the island was John VK4JQ, who operated both Phone and CW in late 1963. Mid-1964 saw VK4WV active on CW, and the DX column in November 1967 AMATEUR RADIO notes that "Willis Is.: John VK4HG having a few minor troubles. On the last air drop his 10 and 15m gear went into the drink beyond the reef. So look for John now only on 20 SSB 0900 and 2000Z."

One amateur, Gavin, then VK4EV, now VK3HY, did some time on the island in 1968 and enjoyed having some 1,500 contacts whilst using a "Home-Brew" Phasing Type Transmitter with an output of fifty watts PEP to a ground plane on 20 metres, a half wave dipole on 80 metres, and 6 metres was not forgotten by using a two element beam and a "Home-Brew" Receiver. On his return home Gavin received cards direct and via the Bureau for nearly ten years.

Gavin's period of duty missed out on the cyclone season, but a previous crew in early 1957 were lashed by cyclonic winds that the anemometer recorded as 108 knots, followed on the next day by 104 knots. This is the highest wind speed ever recorded in Eastern Australia. Concrete bunkers have been built for such occurrences and they are equipped with basic necessities.



Amateur antennas after a "minor blow"

Another station that had an enjoyable time on Willis was Kevin VK9ZC, now VK4AKC. Kevin's tour was in 1973 and, with a new licence, an FT101, the essentials to make a quad and plenty of enthusiasm, Kevin soon made friends worldwide. It was also a big opportunity to use radio as a means of talking back home for the rest of the group. Amateur radio was an instant hit and became a hobby for them all, so much so that when the RD contest time came along Kevin was relieved of all his rostered duties for the twenty-four hour period, with the proviso that he stayed on the microphone. Kevin

# WILLIS ISLAND

# VK4JQ

RADIO *VK3YL*

CONFIRMING 2-WAY ~~SB~~ CW QSO of *2150 DEC*, 1963

at *1415* GMT on 14 mcs.

RST *579* 73's *W6HYG* for JOHN *John Willis*

endured and stayed on the microphone (who wouldn't with all that housework to be done), was waited on hand and foot with nourishment and encouragement, and won the VK9 segment of the contest.

Kevin, being interested in VHF, decided that the very spasmodic TV reception from Townsville could be improved by constructing a "VK9ZC Special", which was a 6 element yagi with mast head amplifier. Results were disappointing, so attention was paid to Channel 9, Cairns, with the construction of an 11 element yagi. Results were promising but at least another 10 dB of signal was needed to make consistent viewing possible.

Back to the drawing board, or rather the erecting of antennas with exotic designs being tried and enthusiastic assistance in erection and testing coming from all. Long wires, Vees and others were tried, however a stocked Rhombic with a 200 foot long axis won the day and allowed TV viewing with watchable signals about five nights per week and provided much entertainment to the lonely four.

thing up to 15 minutes to acknowledge one call. QSLs were handled promptly by transferring log data from day to day with his manager.



Dave VK9ZD "relaxing" between QSOs

One Bureau and Radio Technical Officer, who has travelled extensively to many of the Bureau's remote areas for periods of duty, spent an enjoyable stay on the island. Dave VK9ZD, now VK3DHF, went straight to Willis Island, five weeks after arriving home from twelve months duty at Macquarie Island. (From one extreme in temperatures to the other.) Apart from working DX on all bands and notching up some 3,000 QSOs, photography was another hobby that helped pass the time, and many off duty hours were spent exploring the rock pools exposed at low tide and photographing an abundance of marine life which lives in the tropical waters. One restriction imposed on the inhabitants of Willis is that of swimming in the open sea because of shark infestation.

Another fascination of the crew that spent the time on Willis during Dave's trip was the collection of shells from the shoreline. To get the best specimens it was important to be on the scene bright and early, when the tide was out, and it is believed that Dave has an extensive shell collection.

There is plenty of wildlife on Willis apart from the tropical fish there are thousand upon thousand of birds (sometimes a problem on washday). There are varying species from the flightless Landrail to the majestic Frigate bird, which has a wing span of up to two metres. Not to be forgotten are numerous turtles, especially in the breeding season. Dave and Mike, one of the weather observers, found some turtle eggs and successfully hatched them in the generator room. Eventually the sad day came to release them to their natural habitat, with one so reluctant to go that it had to be carried out into the sea.

Dave has applied for another call, VK0HI. He has been chosen for the trip to Heard by the organisers of the Heard Island DX and Mountaineering Expedition, which is



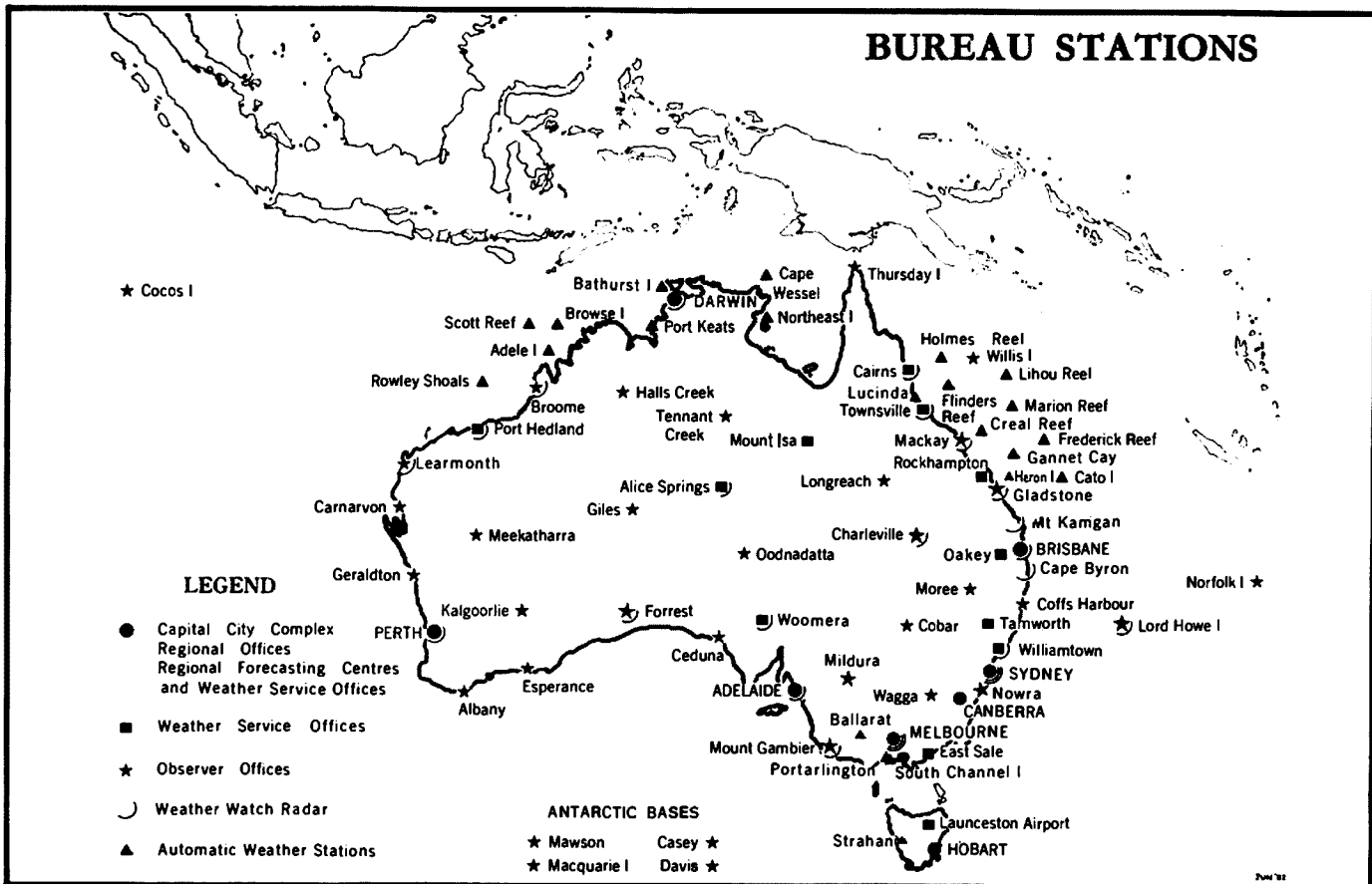
Kevin VK9ZC in the Willis Island shack

Kevin had in excess of 2,400 DX contacts during his stay, although there was much heavy going as, within hours of coming on the air, the whole world wanted to work him for a new country and, as he worked only transceive, it could take any-



The bird life play havoc with the clothes on washing day.

# BUREAU STATIONS



scheduled for departure in early 1983 for his technical knowledge, operating ability and experience of the rigours that can be endured in Antarctic regions.

Following Dave was Mike VK9ZG, now VK6AMM, who in less than five months had 8,000 entries in the log, these being mainly on 15 and 20 metres, though some 300 were made on 6 metres. Mike's equipment consisted of a TS 120S and a 3 element Triband TH3 Jnr.

Tony VK9ZH has excelled himself with the number of QSOs during his stay. Tony volunteered that he had notched up in excess of 10,000 contacts so far and he still has a short time to go. All his log book information has been transferred to his QSL Manager, Gill VK6YL, who is going to have to smile kindly at the friendly post-man because it will be coming in by the bag full.

The observers on Willis Island weather station live a busy life, even though their workload is spaced via shifts. Every three hours there are such things to be done as noting cloud conditions, temperature and humidity, wind speed and direction, visibility and rainfall. Every six hours a balloon flight is set and subsequently tracked by radar and the observations plotted. In addition a Radiosonde flight is done every day, usually in the morning.

It has been virtually an impossibility to list all the amateurs that have visited and operated from Willis. Post-1970 calls in the

VK9 allocation have been VK9ZB, ZC, ZD, ZG (two operators used this call sign), ZH, and now the present operator is Andy VK9ZA, the Station's Radio Technical Officer. It is hoped that many more VK9Z?s will be issued in the future.

Occasionally the island does have unexpected visitors. From its inception there are stories of vessels anchored offshore, and during World War II a sighting of an enemy submarine and the contents of Willis's armoury to defend their possession consisted of a single .303 rifle. The sighting of a yacht in late 1973 caused much speculation and invitations to come ashore were accepted. The ladies and gentlemen from the vessel, which was on a world cruise, enjoyed a pleasant evening, including dinner, and allowed mail to be hastily written by the islanders and posted for them at the next port by the visitors.

Another visitor to the island has been Harry VK2BJL, a DXpeditioner of note, who enjoys doing the "impossible". Harry has visited Willis whilst en route from Mellish Reef in the yacht "BANYANDAH" and operated mainly CW using the call VK9ZR. This and any visit to the island is always welcome, but on this occasion it allowed the dropping in of a few extra supplies and taking away a few letters to be posted to relatives and friends back home.

Willis Island is important not only as a daily observation and a key element in the Bureau's cyclone warning network.

The Director of Meteorology, Dr. John Zillman, who visited Willis in 1981, described the station as a most impressive operation, representing a superb exposure to the undisturbed trade winds with almost unique continuity of high quality records.

*"It is an ideal site for the long-term monitoring of the evolution of general circulation and climate trends in the Australian region," he said.*

Dr. Zillman said Willis had a tradition of excellence in the quality of its observational programme and, despite the harsh environment, the station was in pretty good shape.

*"This is a great credit to the successive observing teams that have manned it over the years, and to the maintenance and transport units that support the station," he added.*

Willis Island, a Commonwealth Possession, an important link to this country's weather forecasting system that affects us all, and a separate DXCC country, will not become a forgotten island, as some pessimistic amateurs suggest.

**ACKNOWLEDGEMENTS FOR RESEARCH, PHOTOGRAPHS AND ADVICE:**  
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 Dr. Peter Barclay VK3FR.  
 Mr. Dave Shaw VK3DHF.  
 Mrs. Austine Henry VK3YL.  
 Also the publication WEATHER NEWS, house journal of the Bureau of Meteorology.

PERFECT GROUND

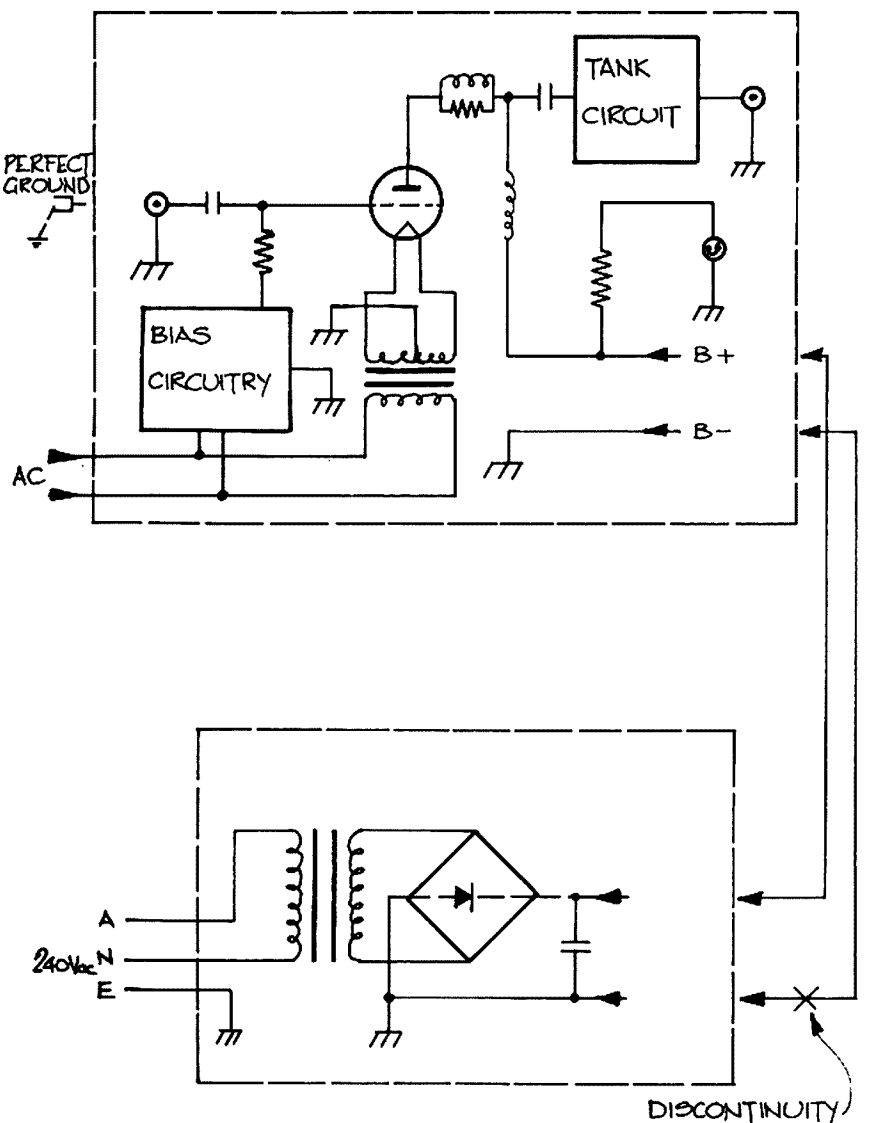


FIG. 1

fairly common arrangement adopted by home-brewers (and by some commercial ones, too). Let us assume the builder adopts the usual practice and grounds the PS via the AC earth return, but omits, as many of us do, to connect a separate earth return to the linear chassis. Next assume that the antenna and driving TRX are connected to the amplifier and the big switch is turned on. The linear tubes light, drive is applied and the appropriate plate voltage and current appears on the respective meters. All appears to be in order. Suppose now that, due to either error or cussedness, the B return has a discontinuity (see Fig. 1). Should our builder now have cause to disconnect the drive input coax, or perform some other operation that isolates the linear from a default earth return he will find himself shaking hands with the full B+ as his body now provides the B- return to ground.

I can leave it to the reader to work out the various combinations and circumstances that can lead to a similar result. The moral to the story is that, because we tend to conceptualise current going to, and coming from, the device of interest we see any interruption of the to or from circuit as rendering the device inoperative and neutral. We therefore fail to appreciate that decidedly unhealthy current can reach around via internal circuitry to make the case at a considerable potential with respect to grounded objects like ourselves. In the case in question the amplifier tubes provide the continuity for the B+ to the chassis and case, particularly as the separate filament transformer keeps the tubes lit and conductive.

Make sure that you are not relying on just one wire and its associated contacts for the B return between the linear and the HT power supply. One fairly, but not absolutely fail-safe way is to ground one side of the filaments at both ends of the connecting cable if these are supplied from the PS chassis. Another is to isolate the B minus on the PS side from the PS chassis. Alternatively, use a braided ground strap and bolt this to both boxes. Please check your home-brew devices and correct accordingly, lest you become an untimely addition to the Silent Key list.

#### AFTERTHOUGHT

After writing this article I took a look at the construction details of a number of linear amplifiers in the 1981 ARRL Handbook. All indicated only one return connection between the amplifier and the HT power supply. Filaments are invariably fed through a separate transformer with a non-earthed AC input. A check in the power supply section showed a 3,400V supply offering a two-terminal output. The B- was grounded to the chassis and the AC input was shown as having a three-way plug input with the ground to chassis. Users of such a PS/linear amplifier combination are only one pin connector away from a sudden end. ■

## Home Brew Linears – Treat or Trap?



An account of a fatal disaster that happened to a broadcast engineer some years ago, by Peter VK4ZDO, caused me to consider if a similar situation could happen to any amateur. As I saw that indeed it could, I decided to write this note to warn fellow amateurs of their peril.

Rex Newsome VK4LR  
58 Prospect Terrace, St. Lucia 4067, Qld.

The original situation arose from a discontinuity between the main Tx chassis and the high voltage B return from the power supply. This resulted in the Tx chassis, cabinet and antenna becoming HOT at B+ potential.

A similar situation could quite easily occur with a home-brew linear having a separate power supply. Consider the situation set

out in Fig. 1. This shows the basic configuration of a tube linear and power supply to be implemented on separate chassis, a

Join a New Member



## EQUIPMENT REVIEW

Ron Fisher VK3OM  
3 Fairview Avenue, Glen Waverley 3150

### THE YAESU FT-ONE GENERAL COVERAGE ALL-MODE SOLID STATE TRANSCEIVER

About a year ago, a message came along the grapevine that Yaesu were about to release a new super transceiver with the unlikely title of FT-ONE. For quite a time many thought the whole thing a great hoax, but slowly details of this new transceiver started to filter through and it soon became apparent that the FT-ONE was far from being a hoax, it indeed was to be a super transceiver. Yaesu have put in every feature and facility that both you and they could think of, and here it is.

**WELL JUST WHAT IS THE FT-ONE AND WHAT DOES IT HAVE TO OFFER? LETS SPELL IT ALL OUT**

#### FREQUENCY COVERAGE

The receive coverage is from 150 kHz to 29.9999 MHz continuous. Transmit coverage is for all amateur bands from 160 to 10 metres, including of course the new bands at 10, 18 and 24 MHz. In this aspect, I imagine that Yaesu have more than the amateur market in view and it would seem that full coverage transceiver would be quite a possibility for the commercial market.

#### MODES OF OPERATION

The FT-ONE has provision for SSB, CW, AM, FSK and, as an optional extra, FM. However, as sold in its standard form, only the SSB filter is included. A wide variety of filters for the other modes are available as options. We shall look at these in further detail later.

#### GENERAL DETAILS

The FT-ONE contains an incredible number of semi-conductors, 214 transistors, 35 FETs, 72 ICs and no less than 344 diodes. One wonders how we ever got along with a dozen tubes with a 5V3 in the power supply. It seems that times have changed.

The FT-ONE is both large and heavy. It measures 380 mm x 165 mm x 465 mm and weighs in at 19 kg. Although the transceiver will operate direct from 12V DC you will need a very roomy car to fit the set into for mobile operation. However, an AC power supply is a standard inbuilt fitting and this accounts for a fair percentage of the total weight and bulk of the transceiver.

#### DESIGN CONCEPT

I feel the best way to put this is to quote directly from the Yaesu brochure:—

"It is a curious fact that top of the line amateur transceivers usually boast of very low noise, spurious free dynamic range, clear audio receivers, while selectivity and sensitivity are treated very low-key, or not mentioned at all.

Often manufacturers will show you each specification under optimum conditions for measuring that particular quality, neglecting to mention the degradation of the other factors and of overall performance in actual operation. Others will draw your attention to one or another outstanding specification, such as super sensitivity; while either pre-

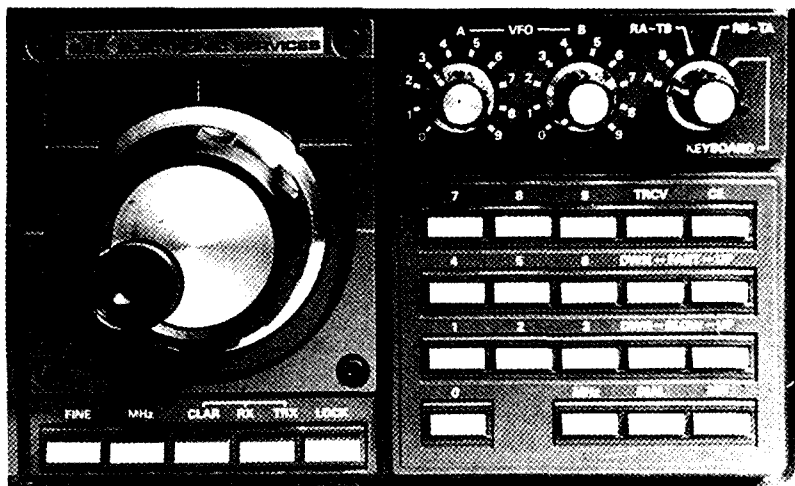
senting in a confusing manner or not mentioning at all the specification that had to suffer, such as selectivity, dynamic range or image response. This is done of course to try to make you think that a transceiver is better than it really is!

The FT-ONE was developed with the goal in mind of a finely balanced harmony of each attribute of the circuit, with the only constraint being that of the state-of-the-art of the electronics industry. The focus of the design effort was performance, without limit to cost or complexity, and the result is a transceiver that can truly offer you top performance with regard to high sensitivity and selectivity without sacrificing IF image rejection and receiver IMD or dynamic range. We invite you to test the performance yourself."

These are certainly brave words, so let us see just how the FT-ONE shapes up. In this regard I will later be introducing you to our new standardised checking system to be used in all our equipment reviews from now on, however a few more comments first.

The procedure for using the FT-ONE is quite different to any normal transceiver. Firstly there is no band switching in the accepted sense. At initial SWITCH ON the receiver is tuned to 0.000.0 kHz. One can then tune higher either with the tuning knob, by pushing the scan buttons on the





Main tuning dial and scan buttons, right hand side of panel

keyboard or the microphone or by entering the required frequency onto the key board. Tuning can be accomplished in steps of 10 Hz, 100 Hz or 1 MHz. There is, therefore, one band that covers from zero to 30 MHz. In the scan mode, the transceiver will stop when it hears a signal, the level of the signal required to stop the scan action is set by the position of the RF gain control.

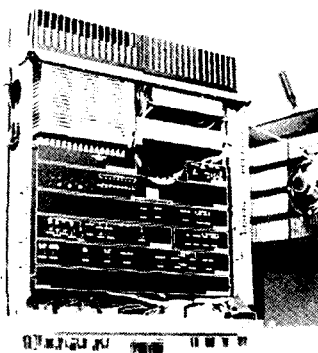
#### THE FT-ONE TECHNICAL FEATURES

The FT-ONE is chock full of interesting circuit developments. Unfortunately, without the help of a circuit diagram or circuit description I am only able to comment on a few of the more important features.

The receiver front end has come in for some unusual design. The RF amplifier for instance uses two medium power transmit bipolar transistors in push-pull to give a claimed output intercept point of +40 dBm. The same amplifier is used as a transmitter driver stage.

Pin diodes are used in the RF attenuator circuit and it would appear that the AGC also operates the front end attenuator on strong signals. Up conversion to 73 MHz is employed which means that images are non-existent. Yaesu claims a receiver dynamic range of 90 dB in the SSB mode and 97 dB in the CW mode.

Selectivity is taken care of with no less than 22 poles of crystal filtering. With the



Top view with cover removed. Speaker is mounted in top cover.

full complement of filters installed, the following selectivity figures are available, at -6 dB. For SSB, CW/wide and FSK/wide, 2.4 kHz. For CW/narrow, 300 Hz. For CW/medium and FSK/narrow, 600 Hz. For AM, 6 kHz, and for FM with the optional FM unit installed, 12 kHz. All of these represent maximum figures and of course can all be reduced with the use of the bandwidth control.

VFO selection, clarifier, scanning and filter selection are controlled by the central processor unit. It also selects the appropriate transmit output and receive input

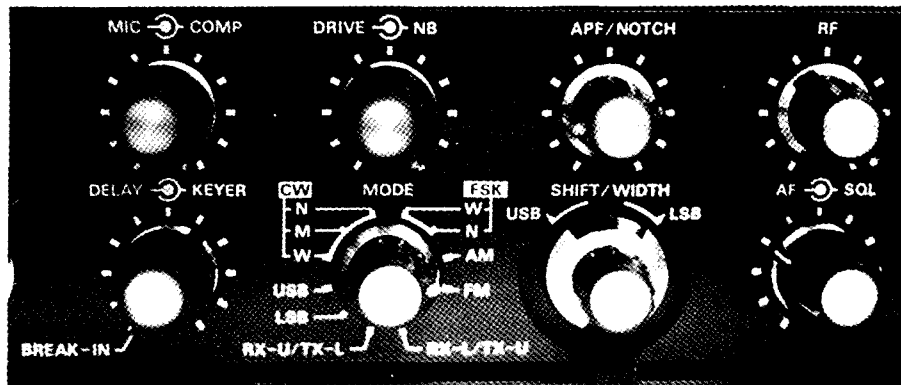
filters to suit the operating frequency. The main tuning knob drives the synthesizer via an optical coupling system which means there is no mechanical load on the control. Considering this, the tuning has a very heavy feel. There is no adjustment to vary the tension on the tuning control. Tuning rates are 2 kHz, 20 kHz and 10 MHz per turn of the knob. The main tuning knob also operates the clarifier for receive, transmit, or both. The actual offset is displayed on an LED display to the right of the main frequency display.

The CW operator has been well taken care of in the design of the FT-ONE. In addition to the wide range of selectivity mentioned above, a CMOS keyer unit with front panel control can be installed. Either full or semi-break in keying can be selected, with full break in available up to about 50 w.p.m. As a further aid to the CW operator, audio peak and notch filters are included as standard features. The peak control used in conjunction with the narrow CW filter and shift/width controls enables signals to be pulled through almost impossible interference. The notch filter is useful to eliminate the heterodyne caused by stations tuning up close to your operating frequency. It does, however, have two slight disadvantages. Firstly, being an audio filter as distinct from an IF filter it is limited in the extent that it can remove a strong heterodyne from a weak signal due to receiver AGC action. The other factor is that its top frequency response is about 1.6 to 1.7 kHz. Above this frequency it is necessary to use the shift control, which I must admit, is most effective.

But perhaps the most incredible part of the FT-ONE is the tuning and memory system. The ten separate VFOs or memories if you prefer can be set up on each of the amateur bands, perhaps one on your favourite AM broadcast station, one on VNG to check on the accuracy of the digital readout (it's always spot on) and still have one to spare. You can even receive on one amateur band and transmit on another. The owner of an FT-ONE really needs a prolific imagination to sort out all the possibilities.

Some of the other nice additions you will find include the monitor system. This is great for checking microphone quality or compression level. If you record and replay other amateur transmissions it is an indispensable feature. Wear your headphones for microphone checking. The AMGC or Automatic Microphone Gain Control has been a feature on some Yaesu transceivers now for several years. With no close speaking input to the microphone the output from the speech amplifier is reduced to zero. Great to cut out that background from the family if you are lucky enough to have the gear inside the house.

Mention must be made of the excellent metering on the FT-ONE. Both meters are softly but clearly illuminated, the right one for "S" and ALC and the left a multi-functional meter for IC, voltage, discriminator (centre zero), processor compression and forward and reflected output indication for the transmitter. Top marks, Yaesu!



Close-up of operating controls, left hand side.

# SPECIFICATIONS

## TRANSMITTER

### Frequency range:

|           |                   |
|-----------|-------------------|
| 160m band | 1.8 to 2.0 MHz    |
| 80m band  | 3.0 to 4.0 MHz    |
| 40m band  | 7.0 to 8.0 MHz    |
| 30m band  | 10.0 to 11.0 MHz  |
| 20m band  | 14.0 to 15.0 MHz  |
| 17m band  | 18.0 to 19.0 MHz  |
| 15m band  | 21.0 to 22.0 MHz  |
| 12m band  | 24.0 to 25.0 MHz  |
| 10m band  | 28.0 to 29.99 MHz |

### Tuning steps:

Selectable 1 MHz, 100 kHz, 100 Hz, 10 Hz

### Emission types:

LSB, USB (A3J/J3E\*), CW (A1/A1A\*), AM (A3/A3E\*), FSK (F1/F1B\*), \*\*FM (F3/F3E\*)

\* New emission designation per WARC '79

\*\* With optional FM unit installed.

### Power output (minimum):

160m through 15m      10m

|         |            |           |
|---------|------------|-----------|
| SSB, CW | 100W (PEP) | 90W (PEP) |
| AM      | 25W        | 25W       |
| FM, FSK | 50W        | 50W       |

### Carrier suppression:

better than -40 dB below peak output.

### Unwanted sideband suppression:

better than -50 dB below peak output, (measured at 14 MHz, 1 kHz tone)

### Non-harmonic spurious radiation:

better than -40 dB below peak output

### Harmonic radiation:

better than -50 dB below peak output

### Audio response:

better than -6 dB from 300 Hz to 2700 Hz

### 3rd order intermodulation distortion:

better than -31 dB below peak output

### Frequency stability:

less than 300 Hz drift during the first 30 minutes after 10 minutes warm-up; less than 100 Hz every 30 minutes thereafter.

### Modulation type:

|      |                      |
|------|----------------------|
| A3J: | Balanced Modulator   |
| A3:  | Low Level Modulation |
| F3:  | Variable Reactance   |

### Maximum deviation (FM, optional Unit installed):

± 5 kHz

### FSK shift frequency:

170 Hz.

### Output impedance:

50 ohms, unbalanced (nominal)

### RF attenuator performance:

from 0 dB to 25 dB attenuation, continuously adjustable

### Dynamic range:

better than 90 dB with standard SSB filter  
better than 95 dB with optional 600 Hz CW(M) filter  
better than 97 dB with optional 300 Hz CW(N) filter

### Audio output power:

3-watts minimum (into 4 ohms, with less than 10% THD)

### Audio output impedance:

4 to 16 ohms

### Microphone impedance:

Low Impedance (500 to 600 ohms)

## RECEIVER

### Frequency range:

150 kHz to 29.9999 MHz (continuous)

### Clarifier range:

± 9.9 kHz

### Sensitivity:

(CW, SSB, and AM figures measured for 10 dB S+N/N)

(\*) 1.8 to 30 MHz      (\*\*) 150 kHz to 1.8 MHz

SSB/FSK(W)/CW(W)

\* better than 0.3  $\mu$ V,      \*\* better than 5.0  $\mu$ V

CW(N)

(with optional XF-8.9KCN filter installed)

\* better than 0.2  $\mu$ V,      \*\* better than 2.5  $\mu$ V

CW(M)/FSK(N)

(with optional XF-8.9KC filter installed)

\* better than 0.25  $\mu$ V,      \*\* better than 3.0  $\mu$ V

AM

\* better than 2.0  $\mu$ V,      \*\* better than 30  $\mu$ V

AM

(with optional XF-8.9KA filter installed)

\* better than 3.0  $\mu$ V,      \*\* better than 50  $\mu$ V

FM

(with optional FM unit installed)

better than 0.6  $\mu$ V for 20 dB of Quieting from 1.8 to 29.99 MHz

### Intermediate frequencies:

1st IF:      73.115 MHz

2nd IF:      8.9875 MHz

Width/Shift IF:      10.76 MHz

Noise Blanker IF:      455 kHz

FM IF (with optional FM unit installed):

455 kHz

### Image rejection:

better than -80 dB

### IF rejection:

better than -70 dB for all frequencies

### Selectivity:

-6 dB      -60 dB

SSB, CW(W), FSK(W)      2.4 kHz      4.0 kHz

CW(N)\*      300 Hz      900 Hz

CW(M)\*, FSK(N)\*      600 Hz      1.3 kHz

AM\*      6 kHz      11 kHz

FM\*\*      12 kHz      24 kHz

\* with optional filter installed

\*\* with optional FM unit installed

NOTE: These figures apply as maximum bandwidths with Width control set to maximum.

## FT-ONE AVAILABLE OPTIONS

Internal CMOS Keyer Unit

FM Unit

RAM Unit

IF Crystal Filters:

CW-N; 300 Hz\*, 8-pole, 8.9882 MHz

CW-M (FSK-N); 600 Hz\*, 8-pole, 8.9982 MHz

CW, FSK; 800 Hz\*, 6-pole, 10.7593 MHz

AM; 6 kHz\*, 8-pole, 8.9875 MHz

\* -6 dB BW

# Evaluation and On-Air Test of the FT-ONE

| CATEGORY                           | RATING | COMMENT                                                                                                                       |
|------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>APPEARANCE</b>                  |        |                                                                                                                               |
| Packaging                          | ***    | Double carton with foam inserts.                                                                                              |
| Size                               | **     | Largest transceiver yet reviewed.                                                                                             |
| Weight                             | **     | One kg heavier than the old FT-401.                                                                                           |
| External Finish                    | ***    | Typical very good Yaesu finish.                                                                                               |
| Quality of Construction            | ***    | Appears well put together.                                                                                                    |
| <b>FRONT PANEL</b>                 |        |                                                                                                                               |
| Location of Controls               | ***    | All come to hand easily.                                                                                                      |
| Size of Knobs                      | ***    | Better than most current gear.                                                                                                |
| Labelling                          | ***    | All easy to read.                                                                                                             |
| Meter(s)                           | ****   | Best of any transceiver yet seen.                                                                                             |
| VFO Knob Feel                      | **     | Rather stiff. No spin action.                                                                                                 |
| Dial Readout —                     |        |                                                                                                                               |
| Analogue                           | NA     |                                                                                                                               |
| Digital                            | ****   | Very easy to read.                                                                                                            |
| <b>REAR PANEL</b>                  |        |                                                                                                                               |
|                                    | **     | Most connections hidden below heatsink.                                                                                       |
| <b>RECEIVE OPERATION</b>           |        |                                                                                                                               |
| VFO Stability                      | ****   | Total drift below 100 Hz.                                                                                                     |
| Digital Dial                       | ****   | Shows exact frequency in each mode.                                                                                           |
| Analogue Dial                      | NA     |                                                                                                                               |
| Memories                           | ****   | Most effective and easy to use.                                                                                               |
| Sensitivity                        | ****   | Equal or better than other top line transceivers.                                                                             |
| RF Attenuator                      | ***    | Continuously variable.                                                                                                        |
| RF Gain Control                    | ***    | Smooth progressive action.                                                                                                    |
| Selectivity                        | ****   | Review transceiver contained all optional filters and, in conjunction with shift/width control, would take care of all needs. |
| IF Shift                           | ****   |                                                                                                                               |
| Pass Band Tuning                   | ****   | width control, would take care of all needs.                                                                                  |
| Notch Filter                       | **     | Only works up to 1.6 kHz heterodyne.                                                                                          |
| Optional Filters                   | ****   | Excellent range available.                                                                                                    |
| <b>SPURIOUS RESPONSES</b>          |        |                                                                                                                               |
| "S" Meter                          | *      | None audible.                                                                                                                 |
| AGC Performance                    | ***    | Ideal for DXpeditions. Gives everyone "S" 9 or better.                                                                        |
| Signal Handling                    | ****   | Very smooth.                                                                                                                  |
|                                    |        | Could not find any overload.                                                                                                  |
| <b>STATUS INDICATORS</b>           |        |                                                                                                                               |
| RIT Operation                      | ****   | 12 LED indicators.                                                                                                            |
|                                    |        | Separate digital readout to indicate offset.                                                                                  |
| <b>NOISE BLANKER</b>               |        |                                                                                                                               |
| Line Noise                         | **     | Reasonably effective on most types of electrical and appliance noise.                                                         |
| Auto Ignition                      | ***    | Almost complete elimination of ignition noise.                                                                                |
| Woodpecker                         | *      | Very little apparent reduction.                                                                                               |
| Effect on Signal Handling          | ***    | Slight cross mod. with full NB action.                                                                                        |
| <b>QUALITY OF RECEIVED AUDIO</b>   |        |                                                                                                                               |
| Int. Speaker                       | *      | Mounted in top of cabinet with very little baffling.                                                                          |
| Ext. Speaker                       | ***    | Much better quality from my own speaker.                                                                                      |
|                                    |        | Strangely, no external matching unit offered.                                                                                 |
| Headphones                         | ***    | Output level good for low imp. stereo phones.                                                                                 |
| <b>COOLING FAN NOISE</b>           |        |                                                                                                                               |
|                                    | *      | Fan noisy and operates at all times.                                                                                          |
| <b>TRANSMIT Operation —</b>        |        |                                                                                                                               |
| CW Power Output                    | **     | 160 80 40 30 20 15 10                                                                                                         |
| PEP Power Output                   | **     | 110 100 100 95 90 85 80 watts.                                                                                                |
| Audio Response                     | **     | As indicated on scope, within 10% of above.                                                                                   |
| Audio Sensitivity                  | ***    | On air reports very good.                                                                                                     |
| ALC Action                         | ***    | Plenty of MIC gain.                                                                                                           |
| Speech Processor                   | ***    | Smooth action. No flat topping on scope.                                                                                      |
| Metering                           | ****   | Effective RF processor.                                                                                                       |
| Cooling                            | ***    | Best yet.                                                                                                                     |
| Relay Noise                        | ***    | Heatsink always cold due to continuous fan operation.                                                                         |
| VOX Operation                      | ***    | Not obtrusive.                                                                                                                |
|                                    |        | Smooth VOX system. Controls not grouped on front panel.                                                                       |
| <b>MANUAL (Owner's Handbook)</b>   |        |                                                                                                                               |
|                                    | **     | See comments in text.                                                                                                         |
| <b>ACCESSIBILITY FOR SERVICING</b> |        |                                                                                                                               |
|                                    | ***    | Most boards are of plug-in type.                                                                                              |

\* Poor      \*\* Satisfactory      \*\*\* Very Good      \*\*\*\* Excellent

# Safety Precautions for Beryllium Oxide



The following information on the use and handling of Beryllium Oxide was kindly supplied by courtesy of Geoff VK3YFA and The Scalar Group. (Reproduced by arrangement from The Radio Bulletin, EMDRC, May 1982.)

Sintered beryllium oxide (beryllia) parts can be handled and used without any risk of toxicity providing a few simple rules are observed. There is, however, toxic hazard if dust or fume from the material are inhaled, resulting in a serious respiratory disease.

In addition to the hazard from inhaling beryllium products, there have been reported cases of skin reaction from contact with beryllium. These occur mainly from contact with water-soluble beryllium compounds and not beryllium oxide. However, it is a wise precaution to handle beryllia parts with gloves or similar protection. This is imperative if the operator has any cuts on his hands. If, due to a cut or abrasion, beryllia enters the skin, it should be dealt with immediately by washing and normal first-aid whence it will be generally found to cause no further trouble.

## CONTROL OF DUST OR FUMES

If dust or fumes are created in the operations carried out on beryllia, there must be adequate extraction of the contaminated air in the working zone to prevent it being inhaled. Should there be any doubt about liberation of dust or fume, it is recommended that air samples be taken to measure the contamination. It is laid down that the maximum permissible air contamination by beryllium is as follows:—

- (a) In a process area:—
  - (i) The maximum allowable concentration of beryllium in the breathing zone averaged over any 8 hour period is 2 micrograms per cubic metre.
  - (ii) The daily average must be within the above limit but even in exceptional circumstances the concentration must not exceed 25 micrograms per cubic metre.
- (b) Outside a process area:—

Concentrations must not exceed 0.01 micrograms per cubic metre averaged over a month and calculated with reference to the breathing zone. This level may be observed by stack

monitoring and by controlling discharge to an appropriate daily amount.

It is emphasised that these are maximum values and all exposures must be kept as low as is practicable.

The normal method of extraction is an enclosed working zone which is exhausted by a blower and the extracted air passed through an absolute filter. The extraction rate should be great enough to provide an inward flow of at least 150 ft. per minute at any aperture in the enclosure. The enclosure is most readily constructed from transparent acrylic plastic and may have an opening at the front sufficient to enable access of the hands for working with the parts.

This arrangement can be used for housing metallizing furnaces, grinding machines, etc., or any other operation giving rise to dust or fume. If beryllium oxide powder is being handled, an enclosed glovebox is recommended.

Handling of clean beryllia parts, such as in assembly or inspection need not be done in an enclosure since there is virtually no risk of toxic amounts of dust being produced.

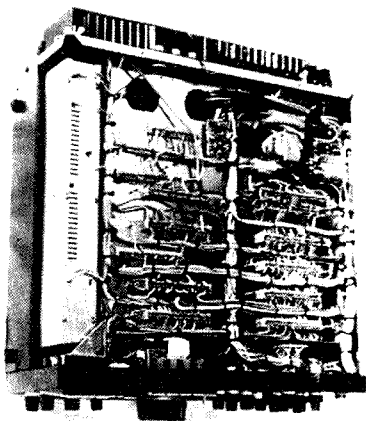
Sintered beryllia is very hard and slight abrasion does not normally create dust. However, continuous abrasive action should be avoided.

Very simple hand lapping operations can be done with the parts submerged in a liquid provided that safe disposal of the liquid can be arranged.

Liquids used for processing beryllia, e.g. acid cleaning solutions, electroplating baths, should not be disposed of through normal sewage unless the beryllium content is less than 1 part per million.

Scrap beryllia should be placed in polythene or similar bags otherwise suitably wrapped and sealed. We shall be pleased to advise about disposal of scrap. If beryllia is broken, the fragments should be gathered and treated as scrap.

Heating in a moist atmosphere, such as metallizing in wet hydrogen, may cause volatile  $\text{Be}(\text{OH})_2$  to be evolved. The rate of volatilization is not appreciable below about  $1,000^\circ\text{C}$  but in any heating operation of this sort attention should be paid to the possibility that a toxic contamination could arise. ■



Underside view of chassis

## MANUAL

I was somewhat disappointed with the standard of the FT-ONE handbook. While it covers the operating aspects of the transceiver quite well and also the installation of options such as the FM unit, keyer unit and the additional filters, there is no technical information. However, Bail Electronics inform me that they have just received stocks of the complete workshop manual for the FT-ONE which will be included with every transceiver sold and will be forwarded to all present owners who have purchased their "ONE" from Bail Electronics or one of their accredited agents. I look forward to seeing a copy of the manual and will comment on it in a future issue.

Yaesu also offers the FT-ONE(G) transceiver for use by government agencies and other users authorised to transmit on frequencies from 1.8 to 30 MHz. The FT-ONE(G) is a completely self-contained general coverage transceiver incorporating all of the features of FT-ONE plus the added capability of general coverage transmission. The FT-ONE(G) is available by special order through any authorised Yaesu dealer.

## CONCLUSIONS

The FT-ONE, as sold in Australia, represents very good value. If you consider that the selling price in the USA is around \$2,300 we are getting them at bargain price. The combination of facilities in the FT-ONE is not obtainable in any other transceiver.

It is of course up to you whether you can make use of the various facilities included in this transceiver.

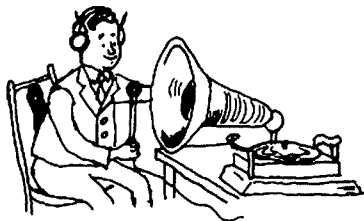
My thanks to Bail Electronics for the loan of the FT-ONE used to compile this review. All enquiries about price and availability should be directed to them or to one of their accredited agents.

**HELP** WITH INTRUDER WATCHING



## WARNING!!

Disposing of your old rig??  
Please ensure it goes **ONLY** to someone licensed to use it on **YOUR** bands.



# NOVICE NOTES

Compiled by Ron Cook VK3AFW  
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## Multi-Band Dipoles

The half-wave dipole is usually only thought of as a single band antenna. The ARRL Radio Amateurs' Handbook gives the length of a half-wave as  $143/f$  where the length is in metres and  $f$  is the centre frequency (in MHz) of the operating band. (The length in feet is given by  $468/f$ .) The feed resistance would be about 72 ohms if the dipole were in free space. In practice if the dipole is more than 0.5 wavelengths above open ground the feed resistance will be within 20 per cent of 72 ohms. If the height is less than 0.25 wavelengths the resistance will reduce from 72 ohms to 0 in proportion to the height above the effective ground. The apple tree and the clothesline, etc., all will have an influence too. The lowest VSWR can be obtained by successive measurements at the operating height after making small length adjustments.

Now how do we use the dipole on more than one band? If there is a three-to-one relationship as exists for 7 MHz and 21 MHz, then a dipole cut for the lower band also works well on the higher band. The radiation resistance may be higher but a good match is usually obtained without any adjustment. A gain of almost 2 dB can be obtained, in directions inclined at  $45^\circ$  to the line of the dipole, compared to a simple half-wave on the higher frequency. (7 MHz operators should keep their harmonic radiation very low to avoid interference to stations on 21 MHz.) Dipoles usually give an effective attenuation to second harmonic signals. Now how does the novice use a dipole on 3.6, 21 and 28 MHz?

A wire about 26 metres long gives medium reactances on all present VK amateur bands. If a combined length of feedline and half the dipole in this region is used an antenna tuner will easily give a good match. This system was very popular 25 years ago when transmitters used pi couplers in the final amplifiers. A VSWR of 3:1 could usually be properly matched to the PA valves. Today's transceivers will shut down if presented with such a load (yes I know some sets do still have LOAD and TUNE controls, but these are the last remnants of valve technology: modern dinosaurs). So in most cases an ATU (Antenna Tuning Unit) is required.

A most effective but simple and cheap multi-band antenna is the humble dipole. Verticals take up less space and can give a low radiation angle but can be more difficult for the novice to build and in a typical suburban installation lose a lot of signal by absorption in nearby trees, clotheslines, powerlines, etc.

A dipole, on the other hand, can usually be strung in a more satisfactory situation above the apple tree, clothesline, etc. Of course these practical problems can be avoided by buying a farm in open elevated grazing country and moving the station there.

### TUNED DIPOLE-FEEDER SYSTEMS

Different dipole feeder lengths will give different characteristics and will operate on several bands. The feedline must not be coax — the commercially available 300 ohm open-wire TV feeder or home-brew open-wire line should be used. Fig. 1 illustrates the arrangement. The accompanying table shows three different combinations of feeder and flat-top combination lengths.

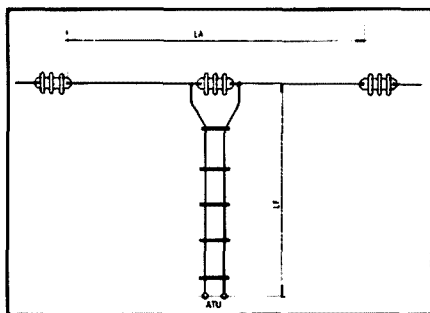


FIG. 1: Centre-fed Multi-Band Dipole.  
Flat-top — 16 SWG hard copper  
Feedline — 300 ohm open wire

| DIMENSIONS         |        |        |
|--------------------|--------|--------|
| Band (MHz)         | LA (m) | LB (m) |
| 3.5, 21, 28        | 41.1   | 12.8   |
| 3.5, 7, 14, 21, 28 | 20.4   | 20.0   |
| 3.5, 7, 14, 21, 28 | 31.1   | 10.1   |

The first example is a full-size half-wave on 3.5 MHz, three full waves on 21 MHz and four full-waves on 28 MHz. (If you experience trouble obtaining a match on 28 MHz with this system on your ATU then try a small value wide-spaced tuning capacitor in series with the feeder.) Operation on 3.5 MHz is of course the same as for a normal half-wave dipole. On 21 and 28 MHz the operation may be better or worse than a dipole, depending on the relative directions of the dipole wire and the direct (great circle) signal path. This is because of the lobes and notches that develop as the dipole length is increased.

One rule not widely known is that for a dipole there are two lobes and two notches in the radiation pattern for each half-wavelength of length. For a general purpose antenna the extra notches are a disadvantage as some stations may be attenuated by 20 dB (compared to a dipole).

The second example in Fig. 1 shows a dipole cut for fundamental resonance on 7 MHz and fed with a feedline half a wavelength long at that frequency. On 3.5 MHz the antenna operates as a shortened half-wave with its centre folded down in the upper half of the feedline. On 7 MHz it is of course a half-wave dipole. On 10.1 MHz the dipole is almost three-quarters of a wavelength long and operates accordingly, and on 14 MHz it is a full-wave dipole. On 21 MHz it is three half-waves long and two half-waves long on 28 MHz. This arrangement is a convenient size for the city dweller and performs well on 7, 10.1, 14 and 21 MHz, in particular with acceptable performance on 3.5 and 28 MHz.

The third example is a dipole cut to three half-waves for 14 MHz, and fed with a half-wave length of feeder. The length of half the flat-top plus the feeder is the "magic" length mentioned earlier. It has been known as the G5RV aerial for 30 years. If the feeder must be longer then multiples of quarter wavelengths at 14 MHz are recommended. The effective lengths for the various bands are:—

- 3.5 MHz — short  $\frac{1}{2} \lambda$ .
- 7.0 MHz — short  $2 \times \frac{1}{2} \lambda$ .
- 10.1 MHz — extended  $2 \times \frac{1}{2} \lambda$  (not originally designed for this band).
- 14.0 MHz —  $3/2 \lambda$ .
- 21.0 MHz — extended  $2 \lambda$ .
- 28.0 MHz —  $2 \times 1 \frac{1}{2} \lambda$ .

### TRAP DIPOLES

If you do not wish to use an ATU but still want multi-band operation, then you could use a trap dipole system as shown in Fig. 2. The trap dipole operates as follows. The centre of the dipole is a half-wave long for the highest band and operates as a normal dipole. Resonant, parallel tuned circuits are fitted to the ends of this dipole.

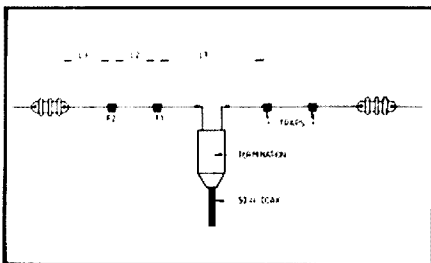


FIG. 2: Multi-Band Trap Dipole

- L1 = half wave on highest band.
- F1 = resonant trap at highest band.
- L2 = one quarter wavelength at second highest band less effective length of F1, less L1/2.
- F2 = resonant trap at second highest band.
- L3 = One quarter wavelength less L1/2 + L2 less effective lengths of F1, F2.

If these are resonant at the same frequency as the dipole then they have a very high impedance at that frequency. Connecting them to the dipole isolates it from any wire that may be added to the outer side of the tuned circuit. As the tuned circuits trap the RF at the resonant frequency in the dipole they are often called traps.

For operation at a second lower band a length of wire is added to each trap until half-wave resonance is obtained. Another set of traps may be made for this frequency and additional wire added to obtain half-wave operation on a third frequency.

The traps appear as a small inductance on the lower frequencies thus reducing the physical size for the dipoles for the lower frequencies. To obtain good efficiency the traps should have low losses. In conventional traps this means a high Q factor and consequently a narrow bandwidth. Thus if the antenna bandwidth were limited by the traps alone, traps with a Q of 300 would limit 14 MHz operation to about  $\pm 50$  kHz from the design frequency.

**ADVANTAGES OVER A TUNED FEEDER SYSTEM**

1. Low VSWR on all bands without an ATU.
2. Dipole radiation pattern on all bands.
3. Good efficiency as none of the radiator is folded up in feeder and there are no ATU losses.
4. A coaxial feeder can be used with consequent more convenient lengths and easier installation.

**DISADVANTAGES COMPARED TO A TUNED FEEDER SYSTEM**

1. Narrower VSWR bandwidth.
2. Loss of harmonic suppression that an ATU may supply.
3. Physically larger than some tuned feeder systems for the same bands.
4. More complicated flat-top construction requiring low loss (high Q), high voltage (5 kV or more), weatherproof capacitors.

There are a number of ways of making good traps. A quarter wave-length transmission line makes a good trap if the far

end is shorted. Coaxial cable can be used to make high voltage low loss capacitors.

A recent article in HAM RADIO by N3GO describes a new way to make traps which he claims give wider bandwidth without extra losses. Fig. 3 shows the construction of the N3GO traps. A length of RG-58/U coaxial cable is wound as a close spaced coil on a 3.2 cm (1¼ in.) diameter former. The braid forms an inductor which is resonated by the distributed capacitance between adjacent turns and the capacitance between the inner conductor and the braid.

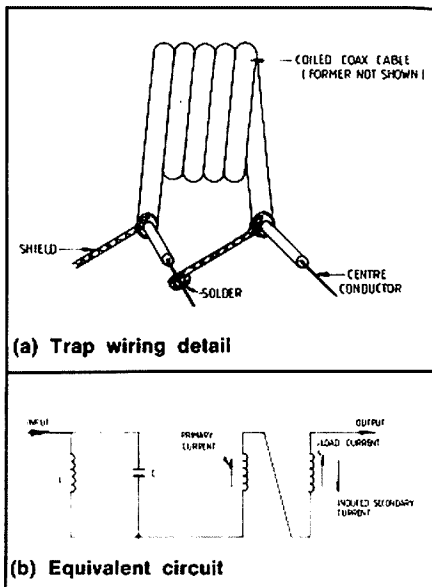


FIG. 3: N3GO Traps

By connecting the braid as shown in Fig. 3(a) the equivalent of the circuit shown in Fig. 3(b) is obtained. In addition to the parallel tuned circuit we have a transformer connected so that the primary current is made to flow through the secondary in the opposite direction to the induced secondary current. As the ratio is 1 : 1 no current flow would take place at all if the primary to secondary coupling were perfect. In practice it is not so, so an appreciable current can flow. N3GO claims that at resonance the coupling is increased. So we have the narrow band trap (high Q) being assisted by the transformer choking action to produce a high impedance over a useful bandwidth, one that is greater than would be achieved by the unusual connection of

one part of the antenna to the braid and the other part to the inner conductor.

In other respects the antenna functions as any other trap dipole system.

**CONSTRUCTING N3GO TRAPS**

The lengths of coax in Table 1 include 7.6 cm (3 in.) tails to extend beyond each coil for wiring of the trap and splicing to the antenna. The drill used in the following procedure was 5 mm (0.2 in.). RG-58/U cable was used. N3GO's instructions are as follows:—

"Form lengths given permit 1 inch (2.5 cm) to extend beyond each side of the coiled coax. This facilitates using the form as a support for each antenna section and can be adjusted to suit personal preferences. All traps must be close wound and should be as tight as possible to ensure mechanical stability. The coax lengths permit 3 inches (7.6 cm) to extend beyond each side of the coil, permitting antenna-section splicing and the wiring of the trap itself.

With the form and the coax cut as indicated in Table 1, assembly can begin. An 0.2 inch (0.5 cm) drill was selected to allow a snug fit for the coax.

1. Begin construction of the trap by drilling one hole approximately 1 inch (2.5 cm) from the end of the form.
2. Strip 3 inches (7.6 cm) of insulation off one end of the coax, and separate the shield and centre conductor.
3. Strip 2 inches (5 cm) of insulation off the centre conductor. Insert this end of the coax into the hole drilled in the PVC form until the coax jacket extends into the inside of the form no more than 0.25 inch (0.6 cm).
4. Very tightly wrap the coax around the form the specified number of turns and locate the point where the coiled coax should end. Mark this spot.
5. Move the coax end away, and drill a second hole at the marked location as near as possible to the next turn of the coil without cutting the jacket.
6. Tightly rewrap the coil to take up the slack that may have been introduced, and mark the end of the coax 0.25 inch (0.6 cm) beyond the hole just drilled.
7. With a sharp knife cut approximately halfway through the jacket material only, then completely around the coax at this location.

TABLE 1: Dimensions for N3GO Traps

| Centre Frequency (MHz) | Former length (cm) | Coax length (cm) | Number of Turns | Effective length (cm) |
|------------------------|--------------------|------------------|-----------------|-----------------------|
| 3.750                  | 15.2               | 312.6            | 19.8            | 305                   |
| 7.150                  | 10.7               | 179.6            | 10.9            | 165                   |
| 10.075                 | 9.1                | 136.4            | 8.1             | 122                   |
| 14.175                 | 8.1                | 105.3            | 6.0             | 92                    |
| 21.225                 | 7.1                | 79.3             | 4.3             | 66                    |
| 28.850                 | 6.6                | 65.0             | 3.3             | 51                    |

8. In a similar fashion make a cut lengthwise along the cable from the first cut to the end of the coax. Do not remove the jacket material at this point. Again, tightly rewind the coil and insert the prepared end of the coax through the second hole.
9. Pull the coax from the inside of the form until it lies flat at both ends. (Some massaging of the end of the coax where it passes into the form may be required.) The jacket may be easily removed from the coax at this point and shield and centre conductor separated.
10. Remove all but about 1 inch (2.5 cm) of insulation from the centre conductor. Twist together the centre conductor of one side and the shield of the opposite side. This connection should be internal to the coil form and tightly twisted to keep the leads as short as possible.
11. Cut off all but 0.5 inch (1.3 cm) and solder this connection.
12. Drill a hole 0.5 inch (1.3 cm) from each end and on the same side of the form. These holes are used to support the elements when used in a dipole or wire vertical.
13. Wrap a turn or two of the remaining end of the centre conductor through the hole on its end of the form, and do likewise with the remaining end of the shield through the opposite hole.

The trap is now complete and ready for installation in an antenna. A silicone-based caulk may be used to seal the traps against weather. I chose not to seal mine and they have been in service for more than a year without degradation in performance.

#### TUNING A TRAP ANTENNA

The last column in Table 1 provides the effective length of wire in the trap used. This length should be subtracted on all bands where the trap looks like an inductor to provide a reasonable starting length before tuning.

Start with the highest band used and construct a half-wave dipole using the traps for that band as end insulators. Tune the antenna as desired with the traps connected before going any further. Once tuned, any lower band can be added by connecting more wire to the opposite sides of the traps and extending the antenna from this point. Calculate the length of a quarter-wave section on the desired lower band, subtract half the length of the dipole just built, and finally subtract the trap's effective length provided in Table 1. The result is the length of wire required on the opposite ends of the traps.

Adjust the added sections only to tune the antenna so as not to affect the higher-band antenna that you have already tuned. Traps may be used as the end insulators for this new lower band, and another band (lower still) can be added using the same procedure. When completed, recheck VSWR on all bands. There should be little or no difference from where they were initially tuned."

#### CONCLUDING COMMENTS

So if you want multi-band performance and don't want to use a trapped vertical give these dipoles consideration.

To operate any of these systems on 1.8 MHz the two conductors of the feeder can be connected together and loaded up with the ATU against ground. The better the ground the better the performance.

If you don't want to make your own traps then SCALAR (an AR advertiser) can supply traps for several bands. Don't forget to tell them you saw their advertisement in AMATEUR RADIO.

There are other variations on the two themes discussed here. For example, if we use a single trap using 60 pF capacitors to get resonance on 7.2 MHz with the inner dipole also resonant on 7.2 MHz, then five band operation can be achieved if the outer dipole is resonated on 3.75 MHz. This is known as the W3DZZ multi-band dipole. Good matching can be obtained on 3.5, 7 and 21 MHz quite easily. I have found that the low VSWR and 14 and 28 MHz is elusive, particularly if you set the traps to 7.1 MHz and adjust the outer section for resonance a little lower, say near 3.6 MHz. Of course I shouldn't complain that it performs differently when the dimensions are changed but it should be possible for the dedicated experimenter to adjust the trap parameters and the resonance on 7 and 3.5 MHz so that acceptable VSWR can be obtained for the VK portions of the bands. SCALAR sell traps, with construction information, suitable for the W3DZZ dipole.

Most texts warn operators not to use an ATU with a trapped antenna system. I see no good reason for this. After all, if the trap is operated at its resonant frequency then it has the highest possible voltage across it and the highest circulating currents. Using an ATU at the shack end of the feeder will improve the operating conditions for the transceiver without any significant effect on the antenna-feeder system.

Of course if the VSWR is 3:1 or more on a coaxial feeder then the losses may begin to be noticeable so operation under those conditions is not recommended even if an ATU is used to reduce the VSWR for the transceiver.

Finally if you use more than two traps in a dipole the bandwidth on all bands is likely to be considerably reduced. Use two trap dipole systems with a common feeder if you want more bands. Spread the ends 2-3 metres apart to reduce interaction between the dipoles.

And if you have only one central support then the dipole systems described can be installed as an inverted V configuration. The last 1-2 metres at the ends can be bent back at angles of up to 90 degrees to fit the system in and no change of performance will be noticed. Don't put any sharp bends in open-wire feeders as this will change the feeder's impedance at that point and probably increase the VSWR.

73. VK3AFW.

#### REFERENCES

1. The Radio Amateurs' Handbook, ARRL, 59th Ed., 1982.
2. The ARRL Antenna Book, ARRL, 12th Ed., 1970.
3. "Trapping the Mysteries of Trapped Antennas", Gary E. O'Neill N3GO, Ham Radio, October 1981.
4. The Amateur Radio Handbook, RSGB, 3rd Ed., 1962.

## Electric Shock



The smallest current which can be detected through the skin ("threshold of perception") is generally considered to be approximately 1 mA RMS at 50 Hz AC and 5 mA DC. (The tongue is considerably more sensitive.)

On increasing the current a stage is reached at which severe muscular contractions make it difficult for the casualty to release his hold. This "threshold of muscular decontrol" is about 15 mA at 50 Hz AC and 70 mA DC; in the lower frequency ranges the effect increases with frequency, e.g. at 60 Hz the threshold current is 7 mA. Very high frequencies do not produce this effect. Increase in current beyond about 20 mA 50 Hz AC or 80 mA DC brings a danger to life.

The next stage is irregular contractions of the heart, leading to cessation of the pumping action. This occurs at about 100 mA for both AC and DC and is almost certain to be fatal. If the current through the body rises as high as 1 amp, severe burning results.

The electrical resistance of the body can vary enormously from person to person and in the same person at different times and under different conditions. This resistance can be as high as 10,000 ohms or as low as a few hundred, depending largely on whether the skin is dry or moist. Even with a resistance of 10,000 ohms the 230V AC supply will result in a current of more than 20 mA, which could be lethal. In fact, much lower voltages can be dangerous and death has been recorded from only 60 volts.

The above remarks apply essentially to current passing through the body, e.g. from hand to hand, or hand to foot. It is possible for part of the body, e.g. a finger, to short-circuit two conductors, which will not necessarily result in electric shock as described above, but which can inflict severe burns which require medical treatment. "The Propagator" — from Everett and Jenkins, "A Safety Handbook for Science Teachers".

**IS YOUR CALL SIGN  
SHOWN CORRECTLY ON  
YOUR AR ADDRESS LABEL**



# Exotic Modulations



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Many amateurs may have heard of the expressions Narrow Band Voice Modulation and AMTOR and wondered where they fitted into the amateur radio world. This article, based upon a shorter broadcast item used by VK1WI in late 1981, has been prepared as part of a general updating and education service to amateur operators. Suitable references are supplied for those who wish to read further into the subjects.

## NARROW BAND VOICE MODULATION

Narrow Band Voice Modulation (NBVM) or, to give it its new technical description, 2K00J3EKN modulation is a technique whereby speech processing permits normal voice contacts to be transmitted in a bandwidth of 2 kHz or less. NVBM was first presented to the amateur community in 1978 in a series of QST articles by Dr. Richard Harris of VBC Inc. and J. F. Cleveland WB6CZX (References 1, 2). The aim of NVBM is to narrow the occupied spectrum by employment of both frequency and amplitude companders. Compander is an acronym for compressor-expander, a process which compresses on modulation and expands at demodulation to achieve a greater dynamic range.

Spectrum analysis of normal speech shows high energy bands below 600 Hz and in regions or formants at 1600 to 2000 Hz and 2300 to 2600 Hz with little energy

beyond 4000 Hz. What is above 4000 Hz is called unvoiced energy, it is noise like in content and varies little with the actual speech content. This has been recognised and is discussed fully in Reference 3 from which Figure 1 has been produced. The distinct energy bands are clearly delineated on the wide-band (300 Hz BW) spectrogram (Figure 1A), whilst the individual harmonics of the voice excitation are evident on the narrow-band (45 Hz) spectrogram (Figure 1b).

Speech synthesis can be based on formant, also known as terminal analog synthesizers, or on acoustic tube analog synthesizers. The Texas Instruments "Speak and Spell" device is an example of the former process; an interesting offshoot of this is the voice ident employed on GB3CE, a UK 70 cm repeater which announced its identification and location (Reference 4).

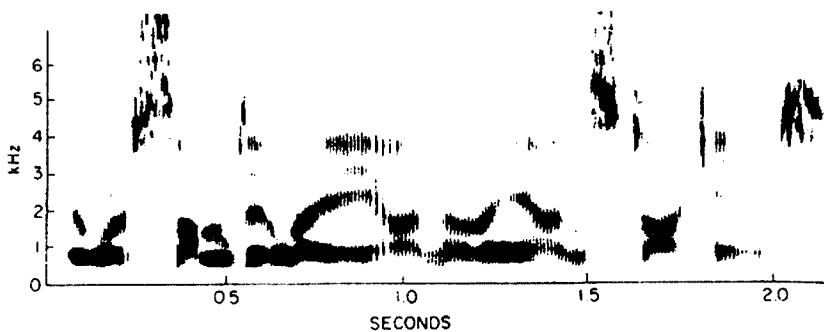


FIG. 1a: Wideband Spectrogram (BW = 300 Hz).

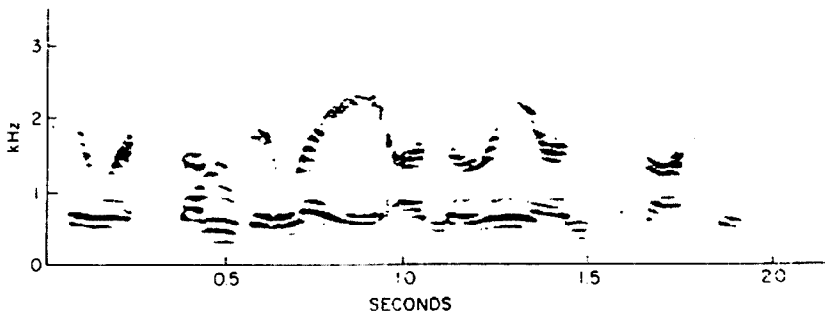


FIG. 1b: Narrowband Spectrogram (BW = 45 Hz).

FIG. 1: Speech Spectrograms of the utterance "There was some delay on the rayon stockings" (from Reference 3).

In order to create NBVM it is first necessary to filter off and retain the 350 to 600 Hz first formant. Then the second and third formants ranging from 1000 to 2500 Hz are inverted and down converted by use of a 3100 Hz local oscillator, to yield a 600 to 2100 Hz band as shown in Figure 2. Re-combining this signal with the first formant yields a signal extending from 350 to 2100 Hz containing the necessary intelligence. During the system development a lower maximum frequency of 1600 Hz was also tested. This was achieved by limiting the filtered higher voice frequency spectrum to 2000 Hz, rather than 2500 Hz and employing a 2600 Hz local oscillator.

Having been frequency compressed the audio signals are next amplitude compressed on a 1 dB out for 2 dB in basis and then radiated through a normal SSB transmitter at about 1750 Hz or the alternate 1250 Hz bandwidth.

Reception speech processing is the inverse of this transmission processing with system noise replacing the unvoiced sound above the upper input cut-off frequency.

Equipment construction is simplified by use of the NE571N amplitude compander from Signetics and purpose designed ICs made by VBC for the active filters, 3100 Hz local oscillator, balanced mixer, microphone pre-amplifier, CMOS analog switches and buffer amplifiers of the frequency compander. These last named functions are all contained in the one 40 pin VBC3000C chip.

Harris and Cleveland suggest that the speech processor can be built from discrete components and ICs, however it would be bulky and difficult to align. For example the filters alone would account for 26 active stages and the audio passes through about 20 operational amplifiers in each direction.

Little has been heard about NBVM in the past year, so one must ask was it a technical success? Have US amateurs shown reluctance to pay the cost of proprietary chips needed to easily implement the system? Readers are invited to write and describe their experiences with NBVM.

## AMTOR

Amateur Microprocessor Teleprinter Over Radio, abbreviated to the initials AMTOR, is an amateur radio implementation of CCIR Recommendation 476. Commercial implementations of CCIR 476 use trade names such as Spector, Sitor and Microtor.



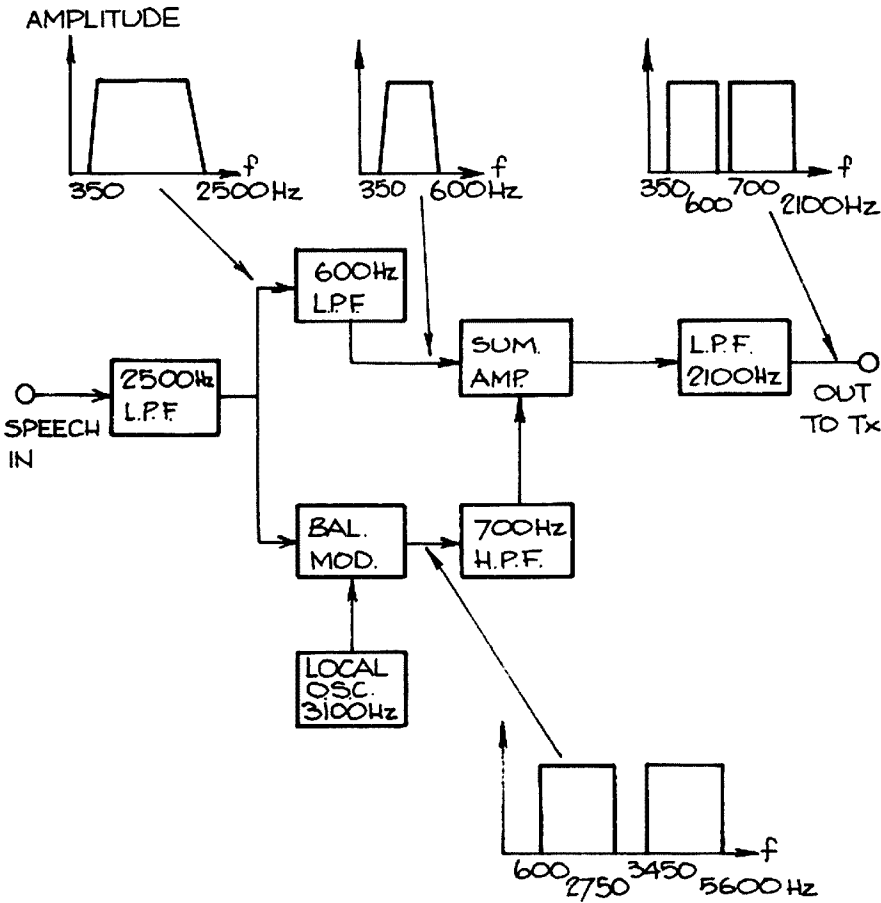


FIG. 2 BLOCK DIAGRAM OF FREQUENCY COMPANDER FOR TRANSMIT FUNCTION.

Should an erroneous block be received, as detected by the "zeros" count for each character not being 3, the same control signal as that last sent not the alternate is responded causing the sending station to repeat the three character block. See Figure 3a.

Should the acknowledgement signal not be received the sender sends three RQ, i.e. repeat request characters to trigger a repeated acknowledgement as shown in Figure 3a.

At the end of a message or transmission sequence the receiving station sends control signal 3 to indicate that it is ready to transmit a message. If the sending station is ready for the change over it replies with the sequence, beta, alpha, beta, which effects the change in role between sender and receiver as shown in Figure 3b. The system could thus be described as under positive control at all times.

As the bearer circuit path deteriorates the repeat cycle will be invoked more and more frequently thus ensuring that an almost perfect message is received but at a reduced overall rate.

Statisticians will observe that with only random noise as input some 34 out of the 128 possible codes will be printed as valid, hence 100% perfect copy is not achievable in theory with system noise present.

AMTOR operates in three modes, A B and L, Mode A has two substates, master and slave, and is used for one to one contact as described above.

Mode B is a facility to cater for broadcast or multi-receiver situations. The sending station sends two streams of single characters in an alternating interlaced sequence without reply breaks. The second stream is a repeat of the first stream delayed by 350 msec to counter interference bursts. Any character mutilated in both streams is replaced by a blank by the the processor logic. The output is an improvement over conventional RTTY due to the dual stream or time diversity and character parity check but not as good as Mode A. Mode L is a listening capability which provides no error correcting features other than to suppress repeated blocks; it has general call applications.

The AMTOR signal processor is constructed using a 6802 microprocessor and two 2708 ROMs pre-programmed with the

AMTOR was first publicised by J. P. Martinez, G3PLX in the RSGB journal Radio Communication in 1979 (Reference 5). The aim of the system is to provide highly reliable radio teleprinter communications over circuits where duplex operations are not possible, for it will be appreciated that error correction techniques are very simply implemented on duplex circuits.

AMTOR uses a seven bit data element code to transmit information, hence there are 128 possible combinations and of these only 32 are recognized as valid characters to match up with the conventional teleprinter 5 unit code. By applying a form of parity check to the AMTOR characters and only accepting code sequences which contain three "zeros" and four "ones" the system can test for invalid characters. Actually this yields 35 valid characters from a 7 unit code format, that is the 32 teleprinter characters plus 3 special characters, known as RQ or repeat request, the alpha idle character and the beta idle character. Three control characters, No. 1, 2 and 3, having identical format to the teleprinter characters L, blank and N are also defined but are only used on the reverse or acknowledge path from receiver to sender so are not confused in the system.

The AMTOR system functions by sending bursts of three characters in blocks over any convenient bearer, usually as frequency shift keyed data, with a block acknowledgement single control character sent in the reverse direction. This acknowledgement is either control signal 1 or control signal 2 sent alternately after each completed 3 character block. Perfect reception then results in continuous passage of the message, broken down into 3 character blocks separated by a control signal response. This is shown in Figure 3a.

Typical recorded performance figures are as follows:—

| Useable Signal | % Message Correct | Spurious Characters Received | Relative Transmission Time |
|----------------|-------------------|------------------------------|----------------------------|
| 100%           | 100               | 0                            | 1                          |
| 80%            | 99.8              | 0.5                          | 1.25                       |
| 50%            | 99.2              | 1.9                          | 2                          |
| 20%            | 96.8              | 7.5                          | 5                          |
| 5%             | 85.2              | 35.6                         | 20                         |

Table showing AMTOR Performance

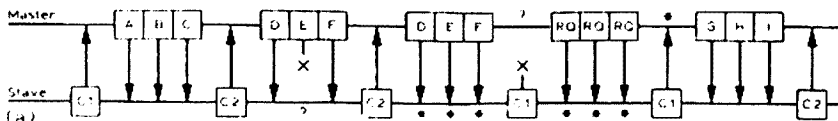


FIG. 3a: Master sending to slave with errors.

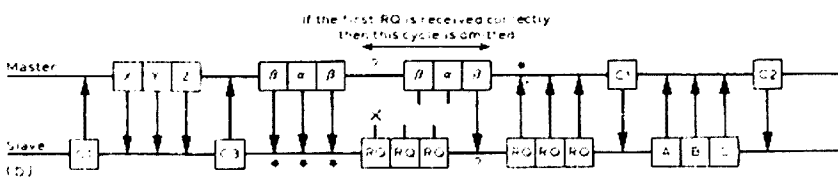


FIG. 3b: Change over from master to slave sending.

FIG. 3: AMTOR Character Streams.

(Any error at points marked \* cause a repeated cycle until the signal gets through and then the next cycle proceeds.)

AMTOR software. Contacts for the purchase of full or partial kits to implement the system may be found in References 6 and 7. It is believed that AMTOR is used in Australia by some members of ANARTS.

#### REFERENCES

- Harris, R. W. and Cleveland, J. F.: A Baseband Communication System, QST, Nov. 1978.
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- Oppenheim, A. V. (ed): Applications of Digital Signal Processing, Prentice Hall, N.J., 1978.
- Dilworth, I.: Synthesized Speech on GB3CE, Radio Communication, May 1981.
- Martinez, J. P.: Amtor, an improved radioteletypewriter system, using a microprocessor, Radio Communication, Aug. 1979.
- Martinez, J. P.: Amtor, the easy way, Radio Communication, Jun./Jul. 1980.
- Martinez, J. P.: Amtor — a progress report, Radio Communication, Sep. 1981.

## Military English and its Meaning



Under consideration . . . Never heard of it.

Under active consideration . . . Will have a shot at finding file.

Snowed under . . . Unable to take more than 1½ hours off for lunch.

Have you any remarks . . . Can you give me an idea of what this is about?

An expression of public opinion . . . Favourable comment in the press.

Putting him in the picture . . . A long and highly inaccurate statement to a newcomer.

Ordnance have it in hand . . . You had better try and do the job yourself.

Rather in the air . . . Completely ignorant of the whole situation.

You will remember . . . You have either forgotten or you never knew.

D.A.D. — Greek term meaning not available at present.

Concur generally . . . Have not read the documents.

Passed to you . . . You try nursing this baby — I am bored with it.

Yes, I think this is the answer . . . A sudden inspiration by a higher authority nullifying your previous suggestion.

From "Jimmy", Journal of Royal Signals ARS (VK/ZL Chapter), April/May '82

## Multi Band Exponential Antenna

The article by U. Matyichenko UW4HW 'A MULTIBAND VERTICAL ANTENNA' ('Radio', 1968, No. 12, page 21) is widely distributed among radio amateurs. For reproduction of this antenna, it is not unusual for difficulties to arise in construction of the mast (it must not be entirely metallic) and the supporting isolator, being capable of sustaining significant wind loading. The UW4HW antenna, built for the 28, 21, 14 and 7 MHz bands, is free from transfer of harmonics and its input impedance on all bands is around 75 ohm.

The construction of the antenna is shown in the diagram (Fig. 1). The mast is assembled from two or three tubes of different diameter inserted one in the other. The lower section from the base to the spreaders is made of steel tube, diameter not less than 30 mm. At a distance of 10 cm from the base are attached with screws six ceramic insulators, equally spaced around the circumference of the tube. At a distance of 1.6m from the base are welded six long bolts (heads to the mast), of diameter 8-16 mm. The spreader sections are slid over the bolts and may be constructed of any metal. On the ends of the spreaders are fastened insulators with holes for the conductors. The upper part of the mast is constructed from more light tubing with a diameter of 16-20 mm at the apex. All sections must have reliable electrical continuity between them. Six radiators of copper wire, section 1.5-2 mm and isolated from the base pass through the insulators of the spreaders and attach to the apex of the mast. Feeding the antenna is achieved with 75 ohm coaxial cable. The central conductor is attached

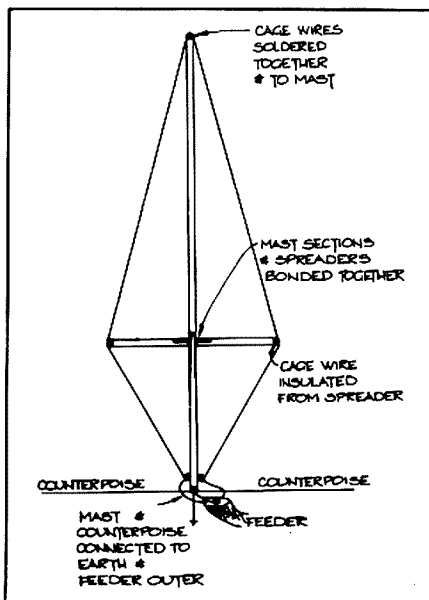


FIG. 1

to the copper ring and the shielding to the base. From the base in a horizontal direction diverge six counterpoises of length 5.6 mm. The base of the antenna must be earthed.

Measurements supplied by the designer show that the input impedance, close to 75 ohm, is preserved across the 10 metre band for about 7 MHz bandwidth, and in the 40 metre band for more than 0.5 MHz bandwidth.

The reactive component of the input impedance is the 28, 21 and 14 MHz bands is close to zero. On the 7 MHz band the reactive component increases but the antenna works perfectly satisfactorily. The SWR on frequencies from 28 to 29 MHz is in the range of 1.05-1.2 and at 29.7 MHz increases to 1.5. The designer also provided SWR figures for a frequency of 144.5 MHz, which resulted in an SWR of 1.08 for a coaxial cable length of 12-14 metres.

The antenna constructed on a flat reinforced concrete roof has low power loss and obtains good reports from DX stations.

U. Zolotariev UA6HKH.

From "Radio", No. 9, 1981, page 22.

Translation courtesy of R. Hancock VK5AFZ.

#### TECHNICAL EDITOR'S NOTE

The Technical Editor supports the note attached by the Editor of Radio, which points out the importance of the radial system for correct and efficient operation of the antenna. The Editor of Radio also requested reports of 7 MHz performance.

# Be Prepared for the 25th JOTA



Each year in October amateurs join with the scouting movement world-wide to participate in Jamboree-on-the-Air. This year, 1982, celebrates the 75th anniversary of scouting, the 125th anniversary of the birth of the founder, Lord Baden-Powell and the 25th Jamboree-on-the-Air.

Robert Baden-Powell, later to become Lord Baden-Powell of Gilwell, founded the Scouting movement so that boys of all classes could attain a wide knowledge in habits of observation, obedience, self-reliance, crafts and public services which would assist them to become good citizens. The Scouting movement has many branches — Cubs (Junior Scouts), Rovers (Senior Scouts), etc., and in 1925 the movement was extended to accommodate girls as the Girl Guide Association. Today there are more than 16 million Scouts in more than 150 countries and territories.

Since beginning in 1958, when twenty stations in ten countries participated, Jamboree-on-the-Air has expanded until it is now the largest meeting of Scouts and amateurs in the world. In 1981 approximately 250,000 Scouts from 80 countries took part.

CONTACT A GROUP CLOSE TO YOU NOW!!!

- DATES: 16th and 17th October, 1982.
- The various State Branch organisers and Liaison Guiders are:—

## VK1

Scouts: VK1WH, Mark Whittaker, 22 Clancy Street, Evatt, 2617.

Guides: As for VK2.

## VK2

Scouts: VK2KUR, Eric Van de Weyer, 70 Dowling Street, Arncliffe, 2205.

Guides: Mrs. Valda Lambert, 76 Ula Crescent, Baulkham Hills, 2153.

## VK3

Scouts: VK3TR, QTHR.

Guides: Mrs. Bev Cuff, 5 Hamilton Street, Mont Albert, 3127.

## VK4

Scouts: Les Weller, 110 Cardiff Street, Darra, 4076.

Guides: Mrs. Ruth Wait, 9 Stirling Street, Sunnybank Hills, 4109.

## VK5

Scouts: VK5ADD, QTHR.

Guides: Miss Janet Simmons, C/o GGA, 278 S. Terrace, Adelaide, 5000.

## VK6

Scouts: VK6HU, QTHR.

Guides: Mrs. June Retallick, 224 The Strand, Bedford, 6052.

## VK7

Scouts: Colin Walker, 41 South Street, Bellevue, 7018.

Guides: VK7NRG, QTHR.

## VK8

Scouts: VK8FT, Frank Turnham, Box 38266, Winnellie, 5789.

- AUSTRALIAN SCOUT NET: 1st Sunday each month 23.30 UTC on 7.090 MHz, then at 00.11 on 21.190 MHz, 00.30 on 14.290 MHz to 02.45. Net control — VK4SAA/VK4BNL.
- SCOUT JOTA NET: 3rd Sunday each month, same frequencies/times/net control.
- JOTA opening address from VK1BP at 04.00 UTC Saturday, 16th October, on 7.090, 14.290, 21.190 MHz ± QRM by the Chief Scout, the Governor-General, from Government House, Canberra.
- Listen for VK4SAJ during JOTA, operating from the site of the 13th Australian Jamboree.

## JOTA 1981

Tasmania was well represented on the airwaves last Jamboree when the North Midlands Group of Tasmania entertained the 1st Evandale Scouts and Cubs, the 1st Ravenswood Scouts, the 1st Perth Scouts and the 1st Campbelltown/Ross Scouts for their first JOTA participation.

The station was manned by VK7OM and VK7JM, both of whom were made honorary Scouts of the 1st Evandale Scout Group in appreciation of a great time which was had by all participants and, according to Jan VK7JM, they will all be back again this time.



Enjoying JOTA 1981 are the 3rd Richmond (Vic.) Brownie Guide unit with their Leader (Brown Owl) Jeanette Rice VK3VKU. Jeanette has participated in the last two JOTAs.

For JOTA 1981 Campbelltown, Liverpool and Districts Amateur Radio Club took an amateur station, complete with two generators and antennae, including a three-element yagi on 10 metres, and operated completely portable.



Athol VK2BAD and a Scout Leader during JOTA 1981.



The Liverpool Amateur Radio Club portable JOTA shack.



Mitchell District Clubs (NSW)

Photo — VK2AMV

# Amateur Radio Licensing in Pacific Countries

R. Forrester VK3VU  
Box 600, Ballarat 3350

During a recent trip around the Pacific area on a vacation/DXpedition I was able to observe at first hand the problems of obtaining an amateur radio licence in different places. There are also other problems that I also encountered so I hope that I will be able to assist any would-be travellers with some relevant information.



## PLANNING

The trip that my friend (VK3DET) and I embarked on was designed to allow us to visit as many Pacific countries as possible without spending a fortune on air fares. Initially the trip was intended to include Wallis Is. (FW0), but there are problems with air transportation to the island, so rather than be stuck without transport it was decided to spend extra time on one of the other islands instead. There are two airlines with regular schedules around the islands and they have agents in most parts of the world. Air Pacific based in Suva, Fiji, and Air Polynesia based in Apia, Western Samoa, both offer a high standard of service and reasonable fares.

## ITINERARY

The itinerary that was eventually settled on was as follows:—

- First stop: 5W1 Western Samoa
- Second stop: ZK2 Niue Island
- Third stop: A35 Tonga
- Fourth stop: 3D2 Fiji Islands

The total length of the trip was to be seven weeks and all equipment to be carried with us without the payment of excess baggage charges. This was to be the cheapest trip that we could arrange.

## NOW FOR A LICENCE

Having decided where we wanted to go and having worked out an approximate time frame the problem of arranging licences now arose. Having been to Tonga in 1980 and operated from there meant that I had some experience in this procedure. The first thing we did was to obtain several copies of our VK station licences and certificates of proficiency (which shows what the standard of the licence is). Each copy was signed by us as being genuine.

When this was done a list of the major items of equipment was gathered together and typed up. Several copies of this list were made also. Having all this information at hand, the time had now come to write to the authorities in each country and formally apply for a licence. With each application the following information was included.

- (a) Copy of VK licence.
- (b) Copy of certificate of proficiency.
- (c) List of equipment to be used, including serial numbers, etc.
- (d) Details of duration of stay.
- (e) Location of station whilst in the country.

Remember, you must allow at least six months for the arranging of overseas licences. With the exception of Fiji, all the authorities replied relatively quickly and indicated there would be no problem with arranging a local licence. The reply from Fiji took some time because an import permit had to be arranged with the P. and T. Department to allow us to operate our equipment. This import permit is a different permit to that issued by the Fiji Customs. It is more like a type approval certificate. Once again, a large amount of lead time is required. I will talk a little more about the customs side of things later in the article.

The Western Samoa (5W1) ticket was arranged through Graham 5W1DQ, who took our paperwork to the post office and had them issue the call signs. You have no choice of calls but rather you are issued the next one in alphabetical order. You can have your licence issued "over the counter", but it is a good idea to get it done beforehand. The fee is WS\$12.00, which is payable when you go to collect the paperwork.

The licence for Niue was already issued for me when I arrived. You can nominate

the call if you wish or take the one they issue for you. The fees is NZ\$3.00. The manager of the Telecommunications Department was Brian Drumm ZK2BGD, and he was happy to issue a reciprocal licence provided one has at least 10 w.p.m. Morse and your home licence is not of a novice standard.



Outlook, just before dawn, from the shack of A35RF and A35TN, Tonga.

The Tongan (A35) ticket presents no problem. Simply go along to the Telephone and Telegraphs Department and produce your original home licence. They will then issue you with a receipt and the call. The



The shack of ZK2BA and ZK2BB, Niue Island.

paperwork is usually posted to you at a later date, when it has been signed by the Prime Minister. The charge is T\$12.00.

The Fiji authorities issued the licence by mail with the payment of FJ\$10.00. You may ask for a particular call and if it is available then they will issue it to you. You must tell the P. and T. Department where the station is located and how long you will be staying. They also require details of equipment, etc. The procedure takes quite some time so it is a good idea to get started in plenty of time.



Dick VK3VU operating as 3D2RF in Fiji.

#### CUSTOMS

As extra insurance, I also wrote to the Customs Department in each country indicating what I intended to do and included a declaration as the non-commercial nature of amateur radio and also attesting to the fact that I would promise to take all the gear out of the country with me when I left. This was sufficient for everywhere except Fiji, where I very nearly had to pay a deposit on the equipment, and it was only the intervention of a friend that allowed me to get on the air at all. However, if you intend to bring equipment into Fiji to operate, then be prepared to lodge a security deposit with the authorities. This will be returned to you when you arrive back in your home country. It is usually in the region of \$400 per transceiver.

It is wise to get a certificate of export from your home country also if you take gear with you. This will avoid delays and the chance of paying duty when you re-enter your country. (It is essentially proof that the equipment was in your possession when you left.) In Australia, a customs form G110 suffices. This is obtainable before your date of departure.

#### EQUIPMENT

To select the equipment was a difficult task. It had to be capable of running at least 100 watts output and be able to operate into a variety of antennas. This suggested that an FT101 or similar would be appropriate. However, such a rig would be heavy and may result in excess baggage charges. Facilities for split operation were also required. The final choice was an Icom IC720A, coupled with a Kenwood AT200 antenna tuner. Ernie VK3DET decided on an Icom IC730 and a Kenwood AT120 tuner. Antennas included a Hygain 14AVQ (which proved useless) and an assortment of wire dipoles. The vertical was not successful because of the problem of obtaining an adequate earth on coral islands.

Subsequently it took up valuable luggage space and was not used at all. Ernie took along a complete OSCAR station also but met with limited success due to the best satellite passes being in the middle of the night. Icom power supplies were used to power all the equipment. No difference was noted between the switch-mode supply and the transformer type, although the switch-mode type has a weight advantage.

The transceivers and power supplies were carried on board the aircraft as "carry on" baggage and thus were not part of our weighed in luggage. By doing it this way it was possible for all the equipment to be included in our 20 kg allowance. At no stage on the trip was any excess baggage charges paid. It is a good idea, however, to explain to the check-in clerk the nature of the equipment and have him attach a label to the gear indicating it is approved as cabin baggage. This then will help you go through security without too many questions.

If anybody requires any more information then feel free to write to me via the Call Book address and I will be only too pleased to help you out. Listed are the addresses of the various government departments. In the main I found them all very helpful and willing to help me out.

#### FIJI

Permanent Secretary  
Posts and Telecommunications Department  
PO Box 40  
Suva, Fiji.

#### WESTERN SAMOA

The Director  
Western Samoa Post Office  
Apia, Western Samoa.

#### TONGA

Telephones and Telegraphs Department  
PO Box 46  
Nuku'alofa, Tonga.

#### NIEU

Telecommunications Department  
Government of Nieu  
PO Box 37  
Nieu Island, South Pacific.

## Amateurs Ain't Amateurs, Sol!

To listen on the amateur band in recent times is to take a lesson in sales talk. There was a time to even mention on air the brand of valve one used was just not on. Are we slipping? Do you give a wry smile when you hear the loud-mouthed gentleman on 20 say — condescendingly — "Congratulations, OM, on the rig and the signal. My rig is a Gonzo 2001, which of course is a more highly sophisticated version of yours, plus a linear final feeding a five element beam, which gives me the few wanted S points that go to make all the difference in a big contest. You've got to have it today to be in the race." What race? Is it an amateur event or a professional handicap? A sporting rivalry or a comparison of a bank balance? Hang on a tick till I put my boots on.

From Westlakes ARC Newsheet, Dec. 1981



# QSP

#### COMMONWEALTH GAMES STATION

All difficulties now having been resolved there will be a special station operating at the Games. The call sign used will be AX4QCG.—QTC August.

#### DON'T SET FRIENDS UP FOR ROBBERY

In this day and age when household robberies are plentiful, thieves use many and varied ways to discover safe places to burglarise.

All amateurs should be careful with their words whilst on air if they are to leave their house unattended for a short time. Not only should you be careful not to say that you are away but take care of your friends as well if you know they are out of town, and don't say well-intentioned, innocuous phrases like "Have a nice trip" or "Call me when you get back from your vacation", as this could be a tip-off to an alert listener and an invitation for an unwelcome visit.

#### TRY THIS FOR A LULLABY

As many of you know, small harmonics sleep very soundly as long as the car is in motion, but try to stop for petrol or traffic and chances are they will awaken. One idea that works is to leave the broadcast radio on and opening the squelch on the two metre rig to a comfortable level masks the changes in the noise created by stopping, thus letting the little one continue sleeping. Be sure to choose an unused frequency or an unwanted call could spoil the whole effect.—World Radio, October 1981.

#### MOTEL TYPE 2 METRES

Many amateurs when travelling will take the two metre rig out of the car and use it in the motel room. The antenna may be the classic "wire coat hanger cut to 19 inches" and soldered into a coax connector. They then expect the chassis of the rig to be ground. WISHFUL THINKING!!!!

Take 19 inches of wire (and a bit more for the wrap) and attach it to the barrel connector. Now you have a whole antenna instead of half an antenna. Watch the radiation increase greatly. This should also be quite useful for those who just run a rubber duck into the antenna receptacle. Just let the added wire hang down and you will have a vertical dipole. Much better????—World Radio, December 1981.

#### COAXIAL CABLE

In TT of Rad. Comm. April 1982, Pat Hawker G3VA discusses a number of important points on the lines that RF cable should not be handled as if it were mains power cable. Ingress of moisture into any coaxial cable creates major losses, especially at VHF or UHF. High losses can also arise due to general deterioration, particularly to connectors. Naturally any kinking of coaxial cable must be avoided as well as sharp bends — a bend ratio of 5 times the cable diameter is generally considered an absolute minimum. If cable is secured too tightly with fixing staples this, too, can cause losses due to impedance changes as well as damage. Sharp bends and tight staples tend to produce standing waves and significantly increase the attenuation. Carefully solder connectors to the cable as a push-fit is likely to deteriorate later to form a "diode"; better still, use a crimping tool correctly, for connectors designed for crimping.

#### UK LICENCES — POWER LEVELS, ETC.

In the new UK licence as set out in recent editions of Rad. Comms. it appears that permitted powers are expressed in "dBW" as carrier power supplied to the antenna. The base level is 1W, which is 0 dBW, doubling the power results in adding 3 to the dBW figure. For example, on the HF bands (except 160 metres) G stations are permitted 20 dBW (100W) or 26 dBW for SSB.

A note 16 relating to disasters states that on the 80, 40, 30, 20, 15 and 2 metres in the event of natural disasters, non-amateur stations may use these bands to meet the needs of international emergency communications.

# HOW'S DX

Ken J. McLachlan VK3AH  
PO Box 39, Mooroolbark 3138



Early in 1981 plans were announced by Bob Read SV0BV, from his Athens QTH, that he would probably be going to CE0 San Felix with a DXpedition later in the year. As the year progressed so did the plans and the usual expedition "on again/off again" problems were mentioned from time to time. Approximately 12 months ago it was announced that it was a "goer" and up to ten operators were going to participate. Shortly after this announcement Bob stated that he would be going alone because of licence difficulties and security clearances, as his Company had a contract to carry out a survey on the electronic equipment on the Island, which is under the control of the Chilean Navy.

Promises were made that he would check into the ANZA Net on 21 MHz without fail, when he was there, as the licence only allowed 48 hours operation from San Felix Island, so of course everyone within hearing distance that heard about it, from a friend who told a friend, including myself, concentrated on 21.204 MHz on Saturday, 17th October. He had been heard and worked by VKs the previous evening on 14.195 MHz and some of the multitude that gathered on the net frequency intimated that he was presently active on 14 MHz, where propagation was poor and he was barely readable and a few optimistically forecast that he could be shortly on the 21 MHz net frequency. Everyone on frequency was savouring the thought of a new and extremely rare country being within their grasp.

Of course he didn't appear on the ANZA Net, so transceiver dial mechanisms and band switches were given a reliability test in the ensuing hours in efforts to even hear and maybe get a report before the "pile ups" started and the licence expired. Some DXers formed groups and phone numbers were freely exchanged to give a greater scan of the spectrum, anyone using the family phone for more than 10 seconds got an icy stare from the station licensee and meals were partaken of at the operating position.

The following week news spread that "it" was over and Bob Read was back in the States as he had to leave suddenly after making about 800 contacts. An ensuing QSO with the operator using his SV prefix intimated that the operation had been very "dicey" and he had been told to leave by the Commandant of the Naval Force on San Felix.

Little more was thought about the events of that weekend and the ensuing QSO with the operator, until considerable correspondence in both Spanish and English was received at this QTH from Patricio Fernan-

dez CE3GN, the International Relations Director of the Radio Club de Chile. This correspondence revealed the truth regarding this clandestine operation.

The perpetration of this hoax, as claimed and backed up by copies of official documentation from the Chilean Society is ably captured in the cartoon that graced the front cover of the Society's monthly magazine with a feature article entitled "The Mockery of the St. Felix Island DXpedition". The cartoon is reproduced in these notes, with the copy of the licence as received.

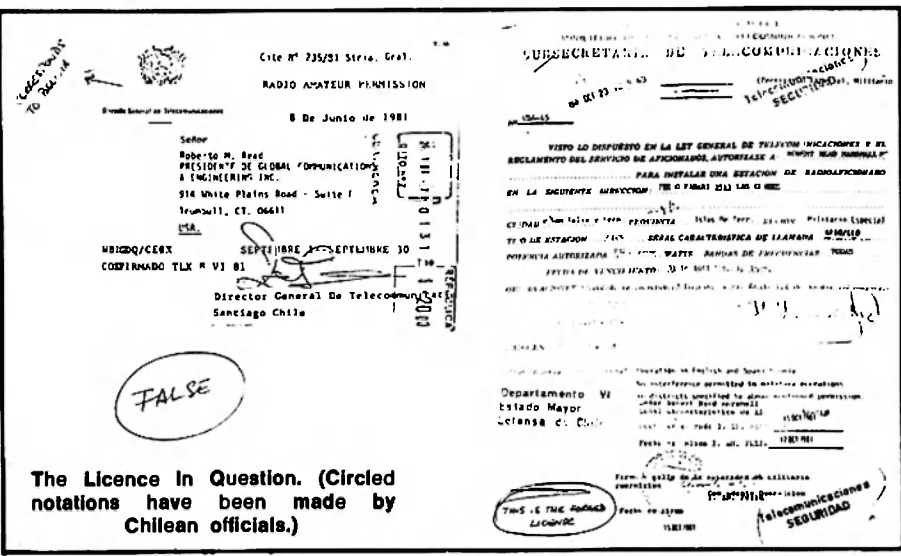
The lengthy magazine article, which was professionally and kindly interpreted by Louis VK3ZLD, lays out the facts that surround this fiasco which has incited the Chilean Society to speak out on behalf of, particularly their members, and the amateur fraternity as a whole.

The salient points of all the correspondence in both Spanish and English that transpired over this unfortunate incident are set out that you may know all the facts:—

- ✧ Robert Marshall Read had been in Chile.
- ✧ Robert Read was granted a licence WB1GDQ/CE3 under a Reciprocal Agreement existing between the USA and Chile.

- ✧ He was authorised to operate WB1GDQ/CE3 by the Chilean Authorities from an application submitted in August 1981.
- ✧ No contract existed between the Chilean Government, Navy or anyone else regarding work for his Company or himself on San Felix.
- ✧ He never put a foot on San Felix Island.
- ✧ When confronted by the ARRL as to the validity of his KF1O/CE0X operations, he produced copies of "authentic" documents marked TOP SECRET to validate his claims.
- ✧ Patricio CE3GN flew to the States to discuss the matter with the ARRL. Patricio proved that five letters and documents were falsified, which included "phantom" signatures, an altered CE3 licence, certificates from non-existent Chilean organisations and altered documents from Government sources.
- ✧ The WIA and the ARRL have both disallowed this operation as a DXCC credit.
- ✧ According to copies of correspondence that transpired between





The Licence In Question. (Circled notations have been made by Chilean officials.)

the Chilean Society and the ARRL, the same person was sought for alleged fraud involving some non-amateur business transactions.

☆ The Chilean Society in a letter to the FCC have asked for the cancellation of his American licence as, quote, "we think that he quite clearly demonstrated that he has no right to belong any more to the Radio Amateur Fraternity".

The Ironical part of this farce is that, whilst half the DXers in VK and ZL were waiting for the "new Country" to appear on the ANZA Net, Pat CE3GN, with an audience of thousands, was explaining to the station purporting to be on, San Felix Island, that according to the information he had at hand in Chile, "no one could be transmitting from the Island and to his belief the whole operation was a mockery and a discredit to CE". The call sign went QRT from whatever QTH he was using and was not heard of again.

You, the reader of this column, can draw your own conclusions from the information above, but personal views for what they are worth is that the embarrassment caused to the Chilean amateurs and amateurs world-wide is something we could do without. Some reader who has an interest in psychology may be able to establish the thought behind the planning and perpetration of this psychical act which has frustrated thousands of DXers and given good "mileage" to many in spreading unnecessary rumours.

Perhaps the magnification of the microscope that all DXCC cards and operations are subjected to will be dramatically increased after this sojourn.

To a brighter note, whilst still on the subject of San Felix. Even after all these problems over the last few months THERE will be an expedition to San Felix by the Chilean Society in the near future.

**JAN MAYEN**  
Rag JX7FD has returned home to LA-land after his usual stint in the area. It is be-

lieved that the active stations on Jan Mayen for the near future will be JX4GN and JX5EEA. These stations should be active as our summer approaches.



Some typical visitors Rag entertains during his trips around the Arctic.

**QRP**  
QRP operators can be found any hour of the day or night on authorised amateur frequencies. Some use solar cells, others dry cell batteries and quite a few use the mains as the basic power source. For those wishing to listen for and chat to this ever growing group, the internationally recognised frequencies are listed for your convenience.

CW: 3.540, 7.040, 14.060, 21.060, 28.060 MHz.

SSB: 3.585, 7.185, 14.284, 21.385, 28.885 MHz.

**TOGO ACTIVE**  
Ted 5V7HL is around for the occasional

QSO. Ted and his XYL, Laura, are engaged in missionary work in the country and it is only occasionally that QSOs can be fitted in during the day's duties. QSLs are 100 per cent, if you are lucky enough to catch a quick report/exchange. QSL to Rev. Ted Schultz, BP 8062 — Tokon Lome', TOGO, West Africa.

**EI7CW**

Clair EI7CW, frequently heard on 20 metres, describes herself as a newcomer to the hobby. Clair operated firstly in 1972 as VP2LAP and on gaining her EI licence in 1975 has operated with the OM Ken EI9AB, using different rigs. The present set-up is a Drake TR4C, KW2000B linear, a trap dipole for the low bands and a TA33 JNR for 20, 15 and 10 metres complete the HF set-up.

Clair's main interest is "rag chewing", yet it is known that she does check into a couple of the YL nets on a fairly regular basis and she admits that she hasn't got caught up in the "pasteboard" warfare, although a few cards are proudly displayed and one award in particular takes pride of place, that being the Tasmanian Devil Award.

Clair is one of 15 YLs presently licensed in the Republic of Ireland and recalls that, when she came on the air in 1975, she was much sought after as she was the only EI YL active at that time and, together with the OM Ken, were the first OM-YL team in EI.

Other hobbies which are pursued are playing Bridge, collecting stamps and in the summer both Ken and Clair enjoy sailing, both being members of the Crosshaven Royal Yacht Club, in Cork, which is the oldest yacht club in the world.



Clair EI7CW

**SENEGAMBIA**

Still no clarification on what is going to happen with regards the amalgamation of 6W8 and C53. Both prefixes are currently being used. Next year it is tipped to be the year for lopping off a few of the countries on the current DXCC list and whisperings are that Spratly also will be one of the current countries that will be placed under very close scrutiny.



# Heard Island Update



from notes supplied by Nick VK6XI

Amateurs the world over have a distinct tendency to take for granted the rare, isolated and at time desolate locations that appear on their "most wanted countries" list. This apathy has been further exacerbated by the so-called DXpeditions that simply involve a commercial airline ticket, hotel booking and convenient power outlet. Even those expeditions involve hardship and danger and are normally of so short a duration that the planning, victualing, etc., are really of secondary importance.

Our destination, however presents one of the most daunting challenges imaginable. It is impossible to fly there, hence transportation is, by necessity, nautical, however sheer economics prevent any thought of powered vessel usage, hence the decision to utilise a "maxi" yacht — "ANACONDA II".

There are, of course, considerable limitations that accompany such modes of transport, the most obvious one being cargo space — perhaps a question can be posed at this time — Consider, how heavy was your shopping trolley the last time you bulldozed round the local supermarket, with just one week's shopping for four people? How about multiplying that by four — the party will consist of 16 members, then try to visualise 12 weeks worth of groceries — that's a whole pile of food and it doesn't take into account the butcher, baker, milkman and the trips down to the neighbourhood general store for the bits and pieces you forgot. The expedition cannot afford to forget even the smallest item as the nearest shop to Heard would probably be in South Africa and the quickest in excess of 12 days hard sailing to Bunbury, Western Australia.

Even using modern, vitamin retaining, frozen dried foodstuffs, the quantities required are somewhat frightening — almost 2 tonnes. The food intake has to be adjusted due to the cold weather which will be experienced, and it is not just a minor adjustment but almost twice the daily caloric intake to the average person here in VK.

Forgetting the food, the next thing is special protective clothing, necessarily bulky due to the climatic conditions, which eats away at the available space and then, of course, the ever important radio gear and generating equipment has to be catered for. That was thought to be the easy part but the latter caused quite a headache. Most surprising was the fact that a 1 kV petrol driven unit chews virtually the same quantity of fuel per hour as a diesel unit with three times the supply capability, also diesels don't worry very much about driving rain and sleet, etc., whereas a petrol unit requires absolute protection from water ingress into the electrical system.

Fuel is therefore obviously diesel, but for ease of transportation, only small drums



Next stop Heard Island for, (l. to r.) Alistair McGregor, expedition artist and environmental study co-ordinator; Dr. Ross Vining, chairman and co-leader of expedition, mountaineer and scientific study co-ordinator; William Blunt, convenor and co-leader, mountaineer; Martin Hendy, mountaineer and glaciologist; and Dave Shaw VK3DHF, DX operator and meteorological observer, showing off the expeditions tee shirts at a recent get-together in Melbourne.

can be considered (one can't exactly man-handle a 44 gallon drum in rough weather, let alone get it through heavy surf to the beach head without risk to life and limb).

What about radio equipment? Obviously the huge advances in technology and miniaturisation were of great assistance to the planning but some problems need to be overcome. Antennas will require specific strengthening to withstand the onslaught of continuous gale force winds and even plain simple three-core flex required research, as many makes become exceedingly brittle at temperatures below freezing point. Condensation on radio equipment is another problem and the solution — THE OPERAT-



Practising landing with inflatable rubber boats

HIE Photo '82



ANARE Heard Island Base Station in snow.

G. Budd 1964. Photo: Courtesy of ANARE



ING POSITIONS WILL COME COMPLETE WITH ELECTRIC BLANKETS. The provision of the blankets is not for the operator's comfort (although their knees and elbows should be nice and warm), but to ensure damp problems are kept to a minimum. Pens and paper have been considered and experimented with, some writing implements just do not work when cold or the ink runs if the paper gets wet. Such items must be considered when regular precipitation and a hazardous sea landing are involved.

Well, we hope the foregoing has whet your appetite and enlightened you on the extent of thought, planning, experimentation and leg work going into the radio equipment component of the expedition. Perhaps you will now offer your help, as donations are urgently required and all will be acknowledged or perhaps you work for a company that may be able to assist with something which is needed for the trip — food, clothing, equipment, fuel, you name it, it is required. With an amateur population of some 15,000 in Australia everyone must know someone who may be able to assist, so how about relieving some of the burden and drop the group a line if you think you can help.

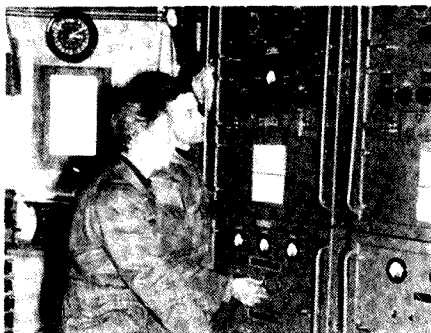
Donations and assistance given will be published monthly. Will your name appear soon to help HEARD being HEARD in 1983?

Pledges and donations received as at 23rd July, 1982, which is listed in alphabetical order:—

**PLEDGES:**  
 CDXA Can\$ 1,000.00  
 IDXF US\$10,000.00  
 NCDXA US\$10,000.00  
 Virginia Century Club US\$ 100.00

**DONATIONS:**  
 John J. Johnson (Maryland, USA) \$ 10.00  
 J. Dean Paterson (KH60A) \$ 25.00  
 K4UEE \$ 20.00  
 Eric Trebilcock L30042/BCRS195 \$ 50.00  
 VK5ANW \$ 5.00  
 VK6IW \$ 15.00  
 VK6FS \$100.00  
 VK6ACP \$ 10.00  
 VK6NEB \$161.00  
 W.I.A. VK5 DIVISION \$100.00  
 W.I.A. VK6 DIVISION \$500.00

**SPECIFIC PURPOSE DONATIONS:**  
 For the purchase of Amateur Radio Equipment in the activation of Heard Island by VK0HI, CW and MD.  
 W.I.A. VK6 DIVISION \$1500.00



Commercial equipment installed at Heard after the return of the Pioneer Expedition in February 1949.

ANARE Photo Courtesy VK3YL

**BY ACTIVITY**

Still active on both 15 and 20 metres CW. Cards are being returned very promptly and QSOs not in the log due to the "phantom" operations of other "BY1PKs" are receiving courteous notes with a suitably endorsed BY1PK card. Many DX Managers and operators could follow the diplomacy and learn from our new amateur friends.

**ALAND ISLAND**

QSLs for G4JVG/OH0, which was activated last month, go to G4JVG QTHR or via the RSGB. Lynn ex KA6YL and DA1GF, who has operated from the island and other prime DX location on many occasions with the OM Bob ex KA6RI and DA1GR have finished their tour of duty in Berlin and have returned home to the States. Lynn will be signing her home call WB6BRW and will be heard above 14.175 MHz when the bands are open.

**AX LORD HOWE**

Prefix hunters will be happy to know that Lord Howe Island will be activated from the 30th September until the 8th October by AX3DHT/LH, who proposes using all bands 80 through 10 metres, with possibly some 6 metre activity. The QSL route is PO Box 304, Ringwood, Victoria 3134.

**PACIFIC DX JAUNT**

Ernie VK3DET is going back to the Pacific area for another DX tour. The schedule is 12th October, two days signing 3D2TN, then on to Tonga where Ernie will sign A35TN for a period of six to eight weeks. Next stop 5W1DW for one week before a one week operation in American Samoa, probably operating VK3DET/KH8. The KH8 phone operation will be restricted to the American portion of the bands.

Ernie will be mainly looking to give VKs and ZLs a contact but allcomers will be welcome. All nets will be catered for as time permits and special emphasis will be placed on operating in the Novice section of the bands. All QSLs 100 per cent via Dick VK3VU, PO Box 600, Ballarat 3350.

Good DXing and an enjoyable trip, Ernie, and thanks from all the much forgotten Novice operators for considering their needs.

**THANKS**

Information for these notes has been derived from magazines including cqDX, DX BULLETIN, RADCOM, Geoff Watts NEWSLETTERS, CABALLEROS DEL AIRE, WORLD RADIO and amateurs DJ9ZD, G3NBC, ON5NT, WA3HP, VK3UX, YL, PBA, 4AIF, 6HD, IH, NE, YL, XI and L30042.

Thanks to one and all but more reports and information are required. Can YOU contribute, please?

Good DXing and 73. ■

**QSL ROUTES:**

A4XIU (G4GIR), A6XJA (PA0LP), EL8H (SM7F1G), HC8GI (W3HNK), HV2VO (I0GPY), OJ0AM (OH2BAD), ST2SS (YU2DX), TL8CK (F6EWM), TL8DC (F6EWM), ZD9BV (W4FRU), ZD9YL (W4FRU), ZY3YCX (PY3AA), 4N7ARG (YU7AJW), 5N9FDR (DF2YA), 6W8AR (OJ3AS), 6W8HL (WA4VDE), 9Q5GD (DL9IL).  
 NOTE: Managers shown in brackets.

**QTHs YOU MAY NEED:**

A92Z, PO Box 26855, Bahrain.  
 FY7AN, PO Box 746, Cayenne.  
 SV5FD, PO Box 349, Rhodes.  
 4D0DBT, PO Box 299, Manila.  
 5H3DM, PO Box 9112, Dar es Salaam.  
 5Z4CX, PO Box 90661, Mombassa.

**SSB WORKED ON THE EAST COAST**

20 METRES  
 457EA, 4X4FB, 6W8AR, A35WH, CT1LS, CT2AK, CT2CE, E17AJ, FB8WG, HB9ACP, XT2AU, Y11BGD, ZB2GC, ZL3PA/C.

15 METRES

3D2CS, 3D2DB, 4D1PJS, 4X4DF, 5W1EL, 707LW, 9H1FC, 9H1GR, 9H1GT, 9M2FR, 9U5JM, 9V1TL, A35WM, A4XHZ, EA8OZ, FROFLO, H440B, HC1RE, HG5A, KA6NFI/KH0, P29BS, S83W, T19VVR, VK9NYG, VK9ZA, VP9JY, VO9CI, VQ9PG, VO9SB, YC0VK, Z21GL, ZK2KH, ZK2WM.

10 METRES

5H3DM, 5Z4CM, A35WM, EP2TY, FB8WG, FB8YJ, KA6NFI/KH0, P29BS, VK9NYG, VS5GA, XE1EFT, YJ8MP, Z21GL, ZK2WM.

**CW WORKED ON THE EAST COAST**

20 METRES

ZC4YC.

**CW WORKED ON THE WEST COAST**

20 METRES

4U1UN.

15 METRES

CR9T, XZ9A.

40 METRES

3B9CD, BY1PK (hopefully the real McCoy at last), DL4TA/HB0, N5RM/NH0, OH2DP/OH0, VQ9XX.

80 METRES

3D2DX, GM3PFO, UA0ZCJ, UM8PAC, VO9XX.

**SSB WORKED ON THE WEST COAST**

10 METRES

5H3OM, 5NRTF, 9K2BE, 9U5JM, FB8YJ, TR8RS, UK2FAA, VO9IB, ZL4PO/C.

15 METRES

4X6IH, 7Q7LW, 9U5JM, A71AD, A92BW, EA8PX (YL), FB8WG, I00CD/IG9, JD1ASZ, SV5FD, VQ9SB.

20 METRES

COTAM, FOCH/FC, FH8CL, FY7BB, HH5CB, J6LIH, J73PD, J88AR, K5YY/J8, UP2EF, V2AU, XZ9A.

40 METRES

A35WH, JH1HVJ/JD1, VP2VD, YS9RVE.

80 METRES

8Q7BN, HS1AMH.

**CW LISTENING WITH ERIC L30042**

10 METRES

JA7PCH, KH6AT, N5RM/NH0, UK5MAG, UK6LAA, UK7PAL, VK6YA, WA6KFX, ZK2KH, ZL1BKF, ZL2AUM, ZL4KI.

15 METRES

4Z4DX, 9V1OK, EA5BZM, ELOAV/MM (Bahamas), FK0AF, FK8EH, FO8AZ, ISOAGP, KA1CB, KH6GI, N5RM/NH0, NP4BU, VK6NAI, YC0VM, YV5AE, Z5SMY.

20 METRES

3D2HG, 9M2FR, 9V1TL, CT1LN, DL1DO, DU6JM, FK8BU, FM7CF (XYL), FO0TM, HI8LC, HL2HN, HT1JCC, KX6OB, LU9CV, NP2AM, OK1XJ, R6L, T30AT, T32AI, VE1SPI, VQ9PG, XE2ALZ, XZ9A, YT3L.

30 METRES

C31HD, DL2GG/YV5, DL6NB, EA6KW, F6ARC, G3RFE, GJ3ELE, GM3JDR, GW3ARS, HB9BCI, ISYI, JR6UPU, KM2XDU, OE5BOL, OZ9XD, PA3BTH, VE1ASJ/1 (St. Paul Island), VE1SPI, VE3LUG.

40 METRES

3D2DX, A35WH, CM2VG, EA7DS, F6FJI, FO8GM, G2CSN, G13OQR, HA1XW, HI3JIF, HK1MY, I3VHO, J73D, K5YY/J6, K5YY/J8, KP4EC, KV4AA, LU6DJX, LZ1KDP, NOZ0/DU2, N5RM/NH0, OK1JCV, PY1MAG, SMSAQB, T30AT, T32AF, UA2FCB, UA6PAA, UD6CN, UF6FFX, UP2BJM, UQ2GFM, VK9NS, VP2MIX, VP9BO, Y39XO, YC0VA, Y07BI, YU4EBL, ZK2KH.

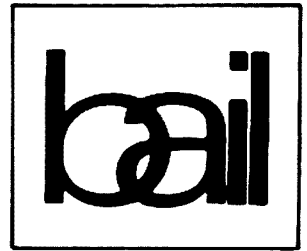
80 METRES

G5RI, SM7ALC, UK2BCR, UK3SAB, UK5IBB, UK5MAG, UW3HV.



**THINK!!!**

if you have good colour photographs suitable for front cover PLEASE loan them to AR.



## YAESU FT-102 HF ALL MODE TRANSCEIVER

### IF Transmit Monitor

An extra product detector allows audio monitoring of the transmitter IF signal, which enables precise setting of the speech processor and transmit audio so that the operator knows exactly what signal is being put on the air in all modes. A new "peak hold" system is incorporated into the ALC metering circuit to further take the guess-work out of transmitter adjustment.

### New VFO Design

Using a new IC module developed especially for Yaesu, the VFO exhibits exceptional stability under all operating conditions. The circuit design is extremely simple, using only axial-lead components.

### Better Dynamic Range

The extra high-level receiver front end uses 24 VDC for both RF amplifier and mixer circuits, allowing an extremely wide dynamic range for solid copy of the weak signals. For ultra clear copy on strong signals or noisy bands the high voltage JFET RF amplifier can be simply bypassed via a front panel switch, boosting dynamic range beyond 100 dB. A PLL system using six narrow band VCOs provides exceptionally clean local signals on all bands for both transmit and receive.

### Total IF Flexibility

An extremely versatile IF Shift/Width system, using a totally unique circuit design, gives an infinite choice of bandwidths between 2.7 kHz and 500 Hz, which can be tuned across the signal to the portion that provides the best copy sans QRM. A wide variety of crystal filters for fixed IF bandwidths are also available as options for both parallel and cascaded configurations. The 455 kHz third IF also allows an extremely effective IF notch tunable across the selected pass band to remove

interfering carriers, while an independent audio peak filter can also be activated for CW reception.

### New Noise Blanker

The new noise blanker design enables front panel control of the blanking rules width, substantially increasing the number of types of noise interference that can be blanked, and vastly improving the utility of the noise blanker for all types of operation, including woodpecker blanking.

### Transmitter Audio Tailoring

The microphone amplifier circuit incorporates a tunable audio network which can be adjusted by the operator to tailor the transmitter response to his individual voice characteristic before the signal is applied to the superb internal RF speech processor.

### New Standard of Purity

Three 6146B final tubes in a specially configured circuit provide a freedom from IMD products and an overall purity of emission unattainable in two-tube and transistor designs, while a new DC fan motor gives whisper-quiet cooling as a standard feature.

### FV-102DM Synthesized, Scanning External VFO

The FV-102DM provides the FT-102 with the advanced frequency control necessary for optimum operating convenience where seconds count. The PLL synthesizer steps at a 10 Hz rate, while slow or fast scanning can be controlled either from the push buttons on the front panel or directly from the microphone connected to the FT-102 (when a scanning microphone is used). Up to twelve frequencies can be memorized by the FV-102DM, entered from the FT-102, FV-102DM VFO or from the front panel numerical keyboard. Additional front panel controls include plus-and-minus 5 kHz and plus-and-

minus 20 kHz stepping buttons; VFO dial lock, last digit blanking, and transmit/receive Main/VFO/ memory selector buttons to allow any combination of frequency controls. The VFO dial can also be activated as a clarifier for a selected memory, while the five digit fluorescent display shows the operating frequency with resolution to 10 Hz, if desired.

### FC-102 Antenna Coupler

The FC-102 is a newly designed antenna tuner. With a power handling capability of 1.2 kW, the bandswitched L-C pi-network will match a wide variety of antennas (including a single wire) to your transceiver or linear amplifier on all HF bands. New design features include an in-line wattmeter with three ranges (20, 200 and 1200 watts full scale), and a "peak hold" system that enables the operator to observe peak power. A separate SWR meter is also built in for antenna tuning indication. The FC-102 includes internal relays to provide low-loss push button selection of two different antennas (and two transmitters), while the optional FAS-1-4R Remote Antenna Selector may be mounted either inside the FC-102 or right on your tower, to allow selection of four additional antennas. When remotely installed, the FAS-1-4-R is connected by a control line to the FC-102, eliminating the need for costly multiple feedlines.

### SP-102 External Speaker/Audio Filter

The SP-102 features a large (120 mm) high-fidelity speaker with selectable low-and-high-cut audio filters allowing twelve possible response curves. Headphones may also be connected to the SP-102 to take advantage of the filtering feature.

### SP-102P External Speaker/Phone Patch

The SP-102P provides a combination shaped response speaker and hybrid phone patch for simple interfacing. Gain controls and an audio level meter are included on the SP-102P.



**BAIL ELECTRONIC SERVICES**  
**38 FAITHFUL STREET, WANGARATTA 3677**  
 Telephone: (057) 21 6260 — Telex: 56880

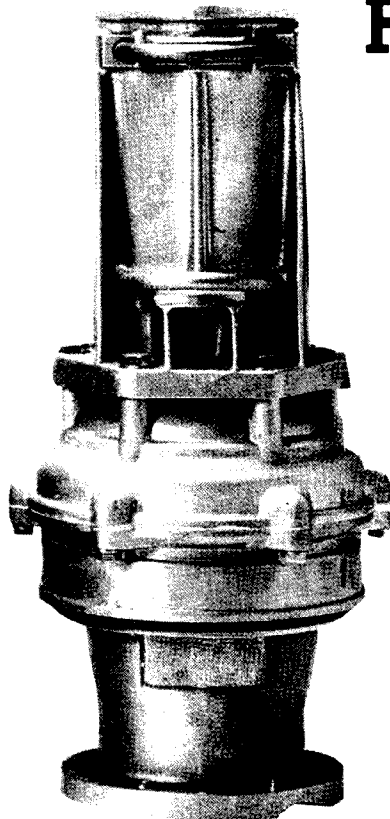


Stan Roberts  
 VK3BSR

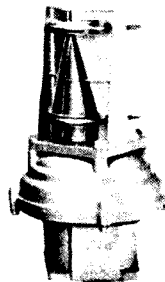
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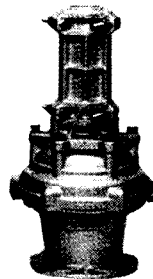
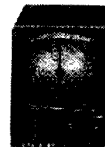
## EMOTATOR ROTATORS FROM BAIL



103SAX

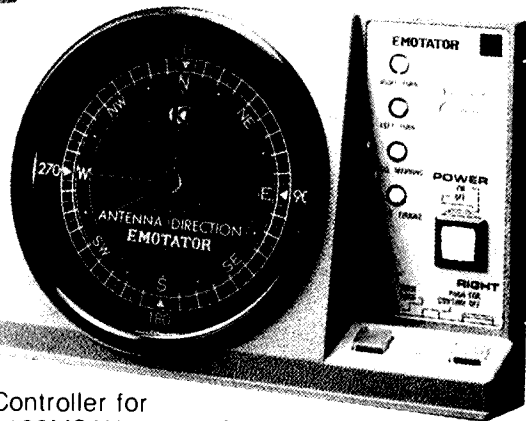
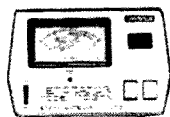


502SAX



**SAX MODELS  
HAVE GREAT  
CIRCLE MAP  
CENTRED  
ON  
S.E. AUSTRALIA**

1102MXX  
1103MXX



Controller for  
1102MSAX, 1103MSAX

**CONTACT THE AUSTRALIAN  
AGENTS FOR EMOTATORS  
AND ALL ROTATOR  
ACCESSORIES . . .**

| Model           | A<br>M <sup>2</sup> | GD <sup>2</sup><br>Kg M <sup>2</sup> | Braking<br>Torque<br>Kg Cm | Rotation<br>Torque<br>Kg Cm | Vertical<br>Load<br>Kg |
|-----------------|---------------------|--------------------------------------|----------------------------|-----------------------------|------------------------|
| 103SAX          | 0.7                 | 75                                   | 1500                       | 450                         | 150                    |
| 502SAX          | 1.5                 | 130                                  | 4000                       | 600                         | 400                    |
| 1102MXX<br>MSAX | 2.5                 | 300                                  | 10 000                     | 800                         | 400                    |
| 1103MXX<br>MSAX | 2.5                 | 700                                  | 10 000                     | 1000                        | 400                    |

A: Allowable Antenna wind area  
GD<sup>2</sup>: Allowable Flywheel effect

# bail

**BAIL ELECTRONIC SERVICES**  
38 FAITHFUL STREET, WANGARATTA 3677  
Telephone: (057) 21 6260 — Telex: 56880



Stan Roberts  
VK3BSR



# Drama on the High Sea

Dick Boxall VK5ARZ  
4 Greenasche Gr., Seacombe Gardens 5047

Every night, South Australian time, at 1730 or 0800 UTC, I try to tune in to the British Maritime Net on 14.303 MHz, and Friday, 9th July, was no exception to my routine.

Over the last few weeks the 20 metre band has been poor to England, so on Friday, as I could not hear the net control station, I had a tune around the band, which was flat with little or no signals to be heard. I tuned back to 14.303 MHz, still no net station, so I tuned to 14.314 MHz for the inter-island net. There were only two stations in QSO, the time was 0808-0809 UTC, then a station called "Is anyone there? This is T18MH/MM/R3". I did not take much notice, and the other stations carried on with their QSO. The station came on again "Can anyone hear me? This is T18MH/MM/R3", still no answer, then "Pan Pan Pan T18MH/MM/R3 Pan Pan Pan". The other stations carried on with their QSO, no other stations went back.

I called T18MH and he informed me that he had gone through very rough seas and that his seven-year-old daughter was very sick and could not take or keep down any food or water, also she was unable to talk and could only make signs with her head. The name of his ship was "Frisia" and he gave his position as 30° 43' 64" South, 176° 30' 15" East (64 seconds is less than a mile out).

I phoned the Adelaide Police and gave them the information I had received, then I went back to the set. VK8NE (George), in Darwin, called in to say that he was hearing the "Frisia". The police phoned me back to say that they were on the phone to Marine Operations in Canberra, and more information was required, such as the number of people on board, and the Port of departure. This was given to the police and I was told that Canberra would phone me.

By this time, VK6ART (Arthur) and KH6ITL (Joe) called in. KH6ITL was getting a doctor to his shack and medical information was passed between him and "Frisia".

Marine Operations wanted more information, and also a re-check of what they had. The "Frisia" had two adults and three children on board, and had left Whangaarii, New Zealand, on Tuesday, bound for Fiji on her maiden voyage. She was also New Zealand registered.

By this time VK5DD (Guy) called at my house and we took turns to man the radio and phone. H44FE and T30BS came on air and T30BS tried to get helicopter assistance, but "Frisia" was out of range. YJ8DB called in to offer assistance. By this time

propagation was changing from Adelaide and "Frisia", so traffic was handled in relays.

At about 10.00 UTC the band opened to the USA and other stations called in for a QSO, they were asked to QSY, which they did. Checks were made with "Frisia", the signals were down but propagation was back.

At 1010 UTC VK6ART called he had lost "Frisia", most of the other stations had gone, YJ8DB and VK8NE were there, but only VK8NE could hear "Frisia". With the changes in propagation W6HK (Ted) called in, by this time "Frisia" required a doctor on air, the operator's wife and other daughter had gone down with the same illness. W6HK made a phone call to W6CCP (Seymour), who came on air and once more medical advice was given direct or by relay.

At about 1200 UTC a message came through via W6CCP, from VK6ART, who had picked it up from YJ8DB and a VK4 (I could not hear either YJ8DB or the VK4) — the New Zealand Maritime Centre had made contact with "Tuicakauq No. 2" who had a doctor on board and said that she would rendezvous with "Frisia" at 0700 New Zealand time. A check was made of the "Frisia's" position and this was passed on to Canberra.

At 1330 UTC I lost signals with "Frisia", and W6HX took over, and I closed my station down at 1345 UTC.

On Saturday 10th I made contact with ZL1AT (Tony), who made contact with the New Zealand Maritime Operations Centre, and was informed that the sick from the "Frisia" had been taken off and were on their way to New Zealand, they had chronic sea-sickness and severe dehydration.

At 05.45 UTC on Saturday, the Marine Operations Centre phoned me to say that they had had a call from Marine Operations in New Zealand saying that the three female members had been taken off the "Frisia" and to thank me, and others, very much for our effort.

In turn, I wish to thank VK5DD (Guy), VK8NE (George), VK6ART (Arthur), VK5ZD (Bill), KH6ITL (Joe), H44FE, T30BS, YJ8DB, ZL1ATE (Tony), W6HX (Ted) and W6CCP (Seymour), whose medical advice saved a life, the SA Police Department, the Marine Operations, Centre, Canberra, the Marine Operations Centre in New Zealand, and others who were on the frequency that wanted to help.

All these and others helped to save the life of a seven-year-old child, 600 miles out at sea from New Zealand. ■



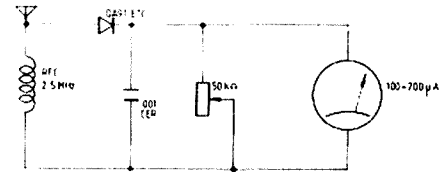
# TRY THIS

From Westlakes ARC Newsletter, May 1982

## RF MONITOR

A handy piece of gear to have around the shack describes the RF Monitor. This small device can be put to good use around the shack tuning up transmitter stages, tuners, BFOs and oscillators. It does not need to be a tuned circuit but rather an instrument to test whether a stage is in fact operating.

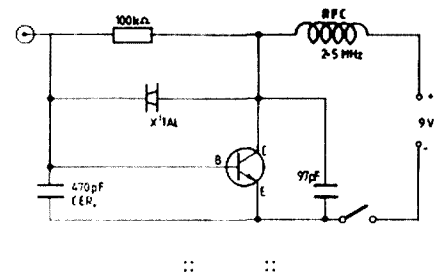
Just a few feet of hook up wire placed near the antenna socket output will pick up an indication on the RF meter. In more stubborn cases, a short length wrapped around the coax antenna cable can give the required results. ■



## TUNE UP SIGNAL INJECTOR

Used in conjunction with the correct crystal, front end alignment of those VHF transceivers can be a breeze.

Output is taken directly to the antenna terminal and harmonics of 8 and 24 MHz crystals can be heard in the 2 metre band. The unit can be used on fundamentals or harmonics with either a short length of wire or whip to act as an antenna. The transistor used could be a Fairchild NPN type BF115, 2N3464 or similar. The unit is enclosed in a small metal case. ■



Do you know why cowboy boots are pointed?

So they can squash the cockroaches in the corner.

# COMMERCIAL KINKS

## CONSTANT CURRENT CHARGING FOR THE ICOM IC-2A

By Paul Newland ZL2TVV

The do's and don'ts of charging nickel-cadmium cells (nicads) is a subject that we have all discussed at one time or another. One fact that is made clear by most of the "experts" is that a constant current charge is desirable. Small nicads should be charged at their 10-hour rate for 15 hours. For example, the charging current for a 250 mA cell, as used in the Icom IC-BP3 battery pack, should be one-tenth of 250; that is, 25 mA.

The Icom IC-2A instruction manual recommends the use of the BC-25U/E wall charger or a stable 13.8V DC source for charging the IC-BP3 battery pack.

With a 13.8V DC input the initial charging current, assuming the battery voltage to be 6V, is about 80 mA. At the rated battery voltage of 8.4V, the charging current falls to about 53 mA. When the batteries have reached their maximum voltage (about 10.4V on charge), the charging current is about 31 mA. For the same battery voltage range the charging current may be anywhere between 11 mA and 93 mA for an input voltage range of 12V to 15V. Charging current from the BC-25 U/E wall charger varies between 40 mA and 20 mA as the cells are charged from 6V to 10.4V. These figures suggest that the nicads are not being ideally treated, especially when being charged from an external DC source such as car battery.

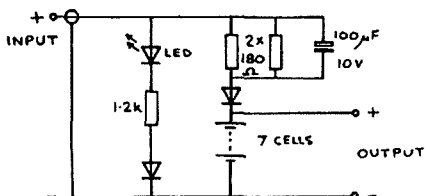


FIG. 1: IC-BP3 battery pack Circuit

The charging current is limited by the two paralleled 180-ohm resistors and the diode in series with the cells. This is a far from ideal charging circuit when we consider the small voltage differential between the charging source and the battery voltage. Small variations in charging voltage, or battery voltage, cause relatively large changes in the charging current.

This circuit charges the cells at a constant 25 mA over the same 12V to 15V input range, regardless of the cells state of charge

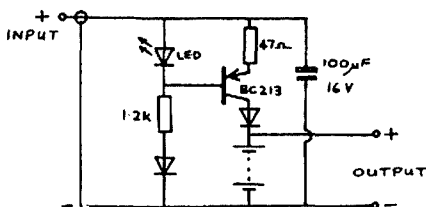


FIG. 2: Modified circuit of IC-BP3 battery pack to give constant charging current

The circuit works as follows:—

Current through the light-emitting-diode causes a voltage drop of about 1.8V across it. This voltage is independent of the input voltage to the charger and is used as a reference voltage for the base of the transistor. The forward voltage drop of the base-emitter junction is about 0.6V, so this leaves a constant 1.2V across the 47-ohm resistor.

Charging current, determined by the voltage across the resistor, flows through the transistor and the diode to the cells. This charging current is:—

$$I = V/R = 1.2/47 = 25 \text{ mA}$$

To modify the battery pack, remove the two screws from the bottom of the pack and the two screws from the same half at the top. Separate the two halves. Remove the cells, being careful not to short them!

Remove the two 180-ohm resistors and the 100 µF electrolytic capacitor from the PC board.

Mount a 47-ohm resistor on the component side of the PC board with one lead soldered into one of the vacant holes in the copper strip from the positive input terminal. The other end of the resistor passes between the board and the cells to the emitter of a BC213 or a similar PNP transistor. The base and collector leads are soldered to the appropriate points on the copper side of the board. The resistor lead should be sleeved to avoid contact with the other parts.

Solder a 100 µF 16V electrolytic capacitor between the negative contact plate and the positive strip on the copper side of the board. Fig. 3 shows the new components in position. Check your wiring and replace the cells.

To test the operation of the circuit, connect the wall charger (or a DC supply) to

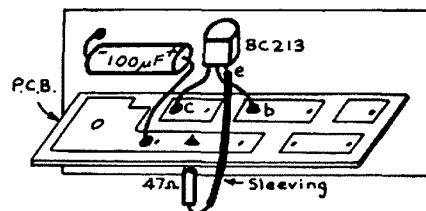


FIG. 3: Diagram showing location of additional components

the input and measure the voltage across the 47-ohm resistor. A voltage of 1.2V, plus or minus a few percent, indicates that all is well. Note that the total current from the supply will be about 35 mA because the LED circuit takes about 10 mA.

After carefully re-assembling the case, your new constant current charging circuit is ready for use. To get maximum capacity and long life from your battery pack, charge it only when the cells have been fully exhausted and remember to stop charging after 15 hours.

This article first appeared in Break-In Jan.-Feb. 1982

## REMEMBER



## CALL BOOK DATA

The Editor is aware that there are still a small number of errors, duplications and omissions as well as uncorrected addresses in the current edition.

The data in the Call Book is only as accurate and complete as the information supplied to the Institute.

PLEASE tell us about any errors, etc., and please tell your amateur friends to tell us too. Write to —

WIA

Box 150, Toorak, Vic. 3142



# THUMBNAIL SKETCHES



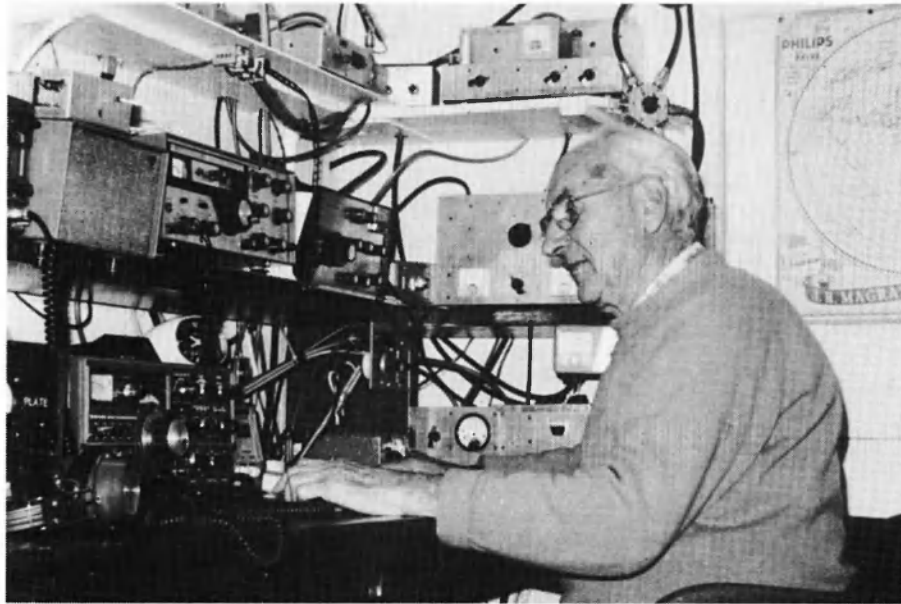
## **HAROLD HOBLER, ex 4DO 1923, VK4DO (Life member of WIA)**

Harold was born in 1906 and became interested in radio before the age of 17.

Would any other amateur in Australia have such a long and active career in amateur radio as Harold?

Harold was first licensed in March 1923 as 4DO, but like many others was active before then. AOCIP certificate 110. Wavelength was 240 metres and power 10 watts.

Since 1923 Harold has achieved a record far too long to show here but includes contest wins, many rewards for service to amateur radio, including Life Membership of the Queensland Division, WIA, operating certificates, etc. Refer AR January 1981. "VK4DO—57 years a radio amateur." The photo was taken when Harold was in a Brisbane hospital recently before he returned home to Rockhampton, where we wish him continued speedy recovery.



**Col in his operating position. Col has a present DXCC Countries list confirmed of OPEN — 312/344, PHONE — 310/328 and CW — 266/296.**



**Harold VK4DO**

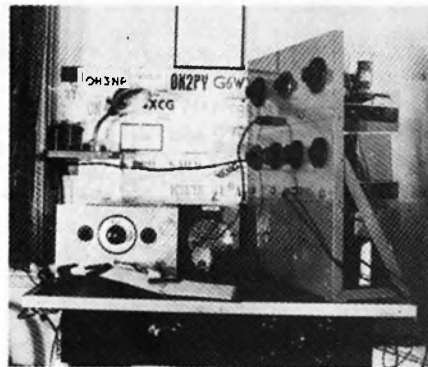
## **COL WRIGHT VK7LZ (Life Member of WIA)**

Col's AMATEUR OPERATOR'S CERTIFICATE OF PROFICIENCY IN RADIO TELEGRAPHY is dated 9th March, 1933, and is No. 1099. He joined the Tasmanian branch of the WIA in the same year and has been distributing QSLs to the Northern Branch members ever since.

When Col was licensed the authorised power was 25 watts (Col is still wondering if it was in or out) and his first transmitter was a 245 valve in a Hartley oscillator circuit with 300 volts on the plate.

Col used many types of receivers, among them a PL 34, which used 4 volt valves and was a RF detector with two stages of audio and also a two valve regenerative receiver from QST 1934 (a copy of which he still has).

During World War II, Col served in the RAAF and upon discharge decided not to come back to the amateur bands, but he was not reckoning on the persuasive powers of the late Crosby Walsh VK7CW.



**This photograph shows a superhet receiver which was described in a 1936 Radio Handbook which was built and used by Col until 1939. Also shown is a transmitter which used two 53s, a 6L6 and a 210 final.**

Crosby gave the encouragement needed and Col has not been off the air since, on all bands from 1.8 MHz to 432 MHz.

In the days before repeaters, when contacts from Tasmania to the mainland on 432 were DX, Col made the first VK3/VK7 direct contact with VK3AEE using a 64 element beam. Quite a feat.

Col is still very active with his interests mainly guided toward satellites and DX (both CW and SSB), using a TS520S, homebrew linear and a TH3.

## **Region 3 Conference Manila 1982**

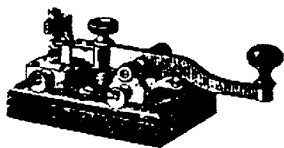


**Australia's representatives at the Conference table: David VK3ADW and Peter VK3KAU. See AR, June, page 16.**

**HAVE YOU CHECKED  
YOUR CALL-SIGN  
IS CORRECT  
ON YOUR  
AR ADDRESS LABEL?**

# POUNDRING BRASS

Marshall Emm (VK2DXP)  
PO Box 362, Goulburn, NSW 2580



## THE CW QSO

### PART 1 — ESTABLISHING CONTACT

Establishing a contact on CW is basically no different from phone operation. There are only limited ways to do it — One can call "on sked"; one can make or answer a CQ call; one can tail-end a QSO in progress. The first option is mentioned just for the record, but as on phone, there is an art to making or answering CQ calls on CW.

If you are calling CQ, the traditional three by three call is your basic tool. Calls can be longer or shorter, depending on band conditions and your expectations of getting an answer. For example, if the band is empty, extending your call increases the odds of someone hearing you. On the other hand, if you have heard someone tuning up or the frequency has just become vacant, a one by one call may be adequate. If you are using a suffix, such as "/QRP", it severely lengthens the identification portion of the call and it doesn't hurt to stick one more CQ in before AR, e.g. "CQ CQ CQ DE VK2DXP/QRP (three times) CQ AR". This is done so that a station picking you up during your identification doesn't have to wait for your next call to know that you are in fact calling CQ.

If you are answering a CQ, you need only send the other station's call once, or at most twice, because the odds are he knows it fairly well. Send your own call at least twice (depending on conditions) and conclude with KN (more about the procedural symbols, or prosigns, later). Keep in mind that you don't even know if he can copy you at all yet, and you may be S2 to him even though he's just blown your front-end!

In tail-ending it is important to observe the same rules as on phone — be sure the channel is clear (in other words the stations must be finished, not finishing),

and try to determine whose frequency it is. The trick is to be sure to wait long enough not to interfere, but to get in before the other guy QSYs or goes QRT.

Probably the least understood of all procedural symbols are CT and AR. On balance CT is probably over-used and AR misused. CT is generally understood to be "the commencing signal", but there are only two places it really needs to be used — in the DOC Morse Code examinations, and in formal message traffic. It really has no place in the ordinary QSO, and its use before a CQ call is superfluous. It means one is about to send some sort of information, but if a receiving station has copied the CT he has already begun to copy information. So why use it at all in a QSO?

AR is generally understood to mean "finishing signal", but it has a more strictly defined meaning as "End of Message". There is no consistent pattern in its usage. It can be used after a CQ call as an invitation to any other station to transmit, and in that case does not need to be followed by K. Of course it goes without saying that CQs are very often followed by AR K. AR does not have to be used at the end of

each over. Some ops. put it before the call signs, some after. But if it is used after the call signs it is again a non-specific invitation to transmit, and if it is followed by KN (named station only to transmit) then you have a contradiction. I generally follow the Japanese style and put AR BEFORE the call signs to indicate the end of the actual message as opposed to station identification.

And now for a word about speed. The Golden Rule is: Call at the speed you want to work; answer at the speed of the other station. If everybody does this, you will never ask or be asked QRS (that's the theory).

If you have absorbed the above, you should have no trouble establishing contact. Think it over, and if the above procedures make sense to you, use them and don't worry about the other guy's sloppy procedure. Next month we will get into the "heart" of the QSO; till then 73 ES CUL.

When listening, tune back and forth across your sending frequency with the RIT (NOT VFO) — the other station may be outside your pass-band. ■



## Communication

D. J. Button VK3VNL  
2813 Christopher Court, Loch Sport 3851

Nothing doing on fifteen  
And nothing doing on ten  
As I roamed around the different bands  
In my hand I held a pen

I arrived on eighty metres  
On three point five six o  
To hear a conversation  
The most touching QSO

It appears a chap named Alan  
Had a problem with his speech  
To co-ordinate his thoughts to voice  
Was not quite within his reach

To hear him struggle gamely  
To put his point of view  
Assisted by his patient friends  
My respect for radio grew

This problem made him wary  
It caused him some restraint

From using of the airways  
The result of heart complaint

So he looks for understanding  
Or for someone that he knows  
To help him with his trouble  
He may have during QSOs

Now I felt like I was prying  
While I listened to this net  
Such a greater bunch of fellows  
I am sure I haven't met

While I listened to them talking  
I thought I'd put to verse  
Of their camaraderie and understanding  
In helping him converse

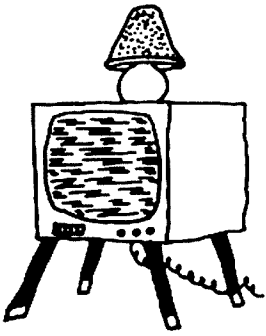
A lump appeared within my throat  
I found the need to swallow  
While I listened to this QSO  
WHAT a bunch of fellows. ■



## QSP

### SOFT ERROR

The development of very large scale ICs, especially RAM circuits, has brought with it a specific problem in the dense memory circuits (64k chips now commercially available) related to the "temporary" loss of stored information brought about by alpha-particle emission. This effect, known as "soft error", are entirely random and could result in system malfunction. The alpha-particles originate from naturally occurring radioactive uranium and thorium which may be present in minute quantities in the silicon chip itself or in its associated interconnections and packaging materials. The UK Atomic Energy Authority's Harwell research laboratory has developed a highly sensitive technique suitable for detecting the presence of uranium as the source of low alpha-emission rates. More complex and denser memory circuits — 256k and 512k RAMS — are under development and the "soft error" problems are expected to become more acute.—Info. Tech. from Birtain, press release 14th April. ■



# NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ  
Federal EMC Co-ordinator  
38 Wattle Drive, Watsonia 3087

## CABLE TELEVISION — NORTH AMERICAN EXPERIENCE

Two-metre Amateur Radio outlawed? Not yet, but it could be very soon. Here's why.

A problem of significant importance to Amateur Radio is cable leakage from Community Antenna Television (CATV) systems. Interference FROM leaking cable systems into Amateur stations (and the reverse situation of interference TO cable systems) is becoming an issue of increasing magnitude. Incidents of interference from leaking cable systems operating on mid-band frequencies to legitimate Amateur Radio operations, especially in the 144-148 MHz band, have increased at an alarming rate. The problem is aggravated by the inherent proximity of the cable systems to Amateur stations. Both operate in residential areas, and co-location is unavoidable.

Cable television is technically a non-broadcast, or closed, service, and therefore no interaction between cable systems and any radio service should occur. In fact, however, this is far from true, and interference between cable systems and Amateur stations, often resulting in law suits against Amateurs in local courts, is increasing at a rate that demands FCC attention.

The cable television service is regulated by Part 76 of the FCC rules, just as the Amateur service is regulated by Part 97. Section 76.605 (a) (12) of the Commission's rules limits cable leakage to 20 microvolts per metre measured at a distance of ten feet from the cable at frequencies of 54-216 MHz. The main concern of the FCC is primarily with the potential for harmful interference to ground/air communications and navigation services. A leak measured at 20 microvolts per metre at ten feet can cause interference to a nearby Amateur receiver and, by the same token, such a cable leak will allow a significant amount of signal to enter the cable from a nearby high-power Amateur transmitter.

To further aggravate the situation, a Notice of Proposed Rule Making has been released by the FCC, the intention of which is to relax the cable leakage requirements to a maximum level of 100 microvolts per metre measured at ten feet from the cable. The ARRL has taken a strong stand in this matter and has filed a brief opposing the proposals to relax leakage standards. An increase in permissible cable signal leakage will have a more profound effect on Amateur Radio operations than on any other radio service.

The portion of a cable system that creates the biggest problem, in terms of cable leakage interference, is the drop cable from the pole to the home. The shielding of this flexible coaxial cable is less effective than is the solid aluminium hardline shielding around the cable on the pole. The drop cable moves around in the wind because of its flexibility, and the connectors used, being low-cost items, are far more subject to corrosion than are the communications-grade devices familiar to Amateurs. And all of these weaknesses are present in high-density areas, close to Amateur VHF stations. An increase in permissible leakage levels to 100 microvolts per metre at 54-216 MHz may not increase interference to aeronautical stations, but it most certainly will create or increase interference to Amateur 144-148 MHz operation. Further, cable leakage interference works both ways. Since Amateur stations are primarily located in residential areas, increases in the number of cases of interference to cable subscribers by local Amateur VHF transmissions will result.

Cable television (CATV) was known originally as "community antenna television". Today it represents the broad area of entertainment and other services carried over coaxial cable networks to various subscribers. As implied by the name, the original purpose of CATV was to serve communities with entertainment television service where TV reception was poor. The idea was to find one good receiving site, pick up signals from local and distant TV transmitters, and relay these signals by way of coaxial cable to residents of the community. This concept was applied widely, and many people enjoyed satisfactory TV reception through these systems.

In the early days a few channels were distributed within the VHF band. The limit was generally the 12-channel capacity of the standard VHF television receiver. Many 12-channel cable systems are still in operation. Cable television has not always been an economic success. Therefore, in recent years, systems have been enlarged to carry many more channels with particular emphasis on premium entertainment services such as Home Box Office and Show Time.

Today, sophisticated CATV installations offer high capacity and quality in essentially closed communication systems. A wide variety of quality equipment is available from a number of manufacturers to construct the systems and implement the

services. CATV systems serve mainly residential subscribers; they are installed on a franchise basis in each community. There are nearly 20 million cable homes across the United States. Cable TV systems have also proved popular in Canada. Large CATV installations can be found in various other countries around the world.

Many of the recent franchise requirements have called for increasingly sophisticated systems with high capacity and interactive services.

Amateurs and other users of the radio spectrum have become victims of a new strain of RFI virus — CATVI, cable television interference. And, FCC antigens have been rendered ineffectual in combatting it. It seems that with every turn made by the home-entertainment industry to meet the omnipresent demand for its goods and services, infringement of the rights of radio amateurs is a pronounced side effect. We saw it in the 1950s, and are seeing it again today in the form of CATVI.

On paper, cable systems are non-broadcast facilities; that is, OFF-AIR carriers of television programming contained within their pathways, CLOSED to the outside RF environment. By this definition, then, the decision of which frequencies to utilize in the system becomes purely one of economics — the configuration that yields the least costly means of distribution will be chosen. No other factors need to be considered. Channel arrangements are generated within industry boundaries with minimal government intervention, and often include amateur frequencies.

### TWO-WAY CABLE

The newest CATV systems provide bi-directional capability. If the description of a typical system did not excite your interest, notice that we are now adding an upstream path from every subscriber to the head-end. All kinds of two-way services may now be implemented. Currently these include home security, power company load control, meter reading, traffic control, point-to-point communications, surveillance camera control and a host of others, including the broad scope of interactive services to the home. These services will include banking, shopping, graphics, home computer services, catalogue displays and services that have not yet been conceived.

To provide bi-directional transmission, the cable is fitted with reverse amplifiers, usually covering the range of 5 to 30 MHz.



The configuration of 50 to 300 MHz or more downstream (from the head-end) plus 5-30 MHz upstream is referred to as a "subsplit" CATV system. In cases where there are numerous industrial users or multiple residential cables, the "midsplit" system is often employed. Typical frequencies for a midsplit system are 5 to 120 MHz upstream and 174 to 300 MHz or more downstream.

Perhaps you begin to sense a potential problem. Some CATV systems are now operating in all of the amateur frequencies from 7 to 28 MHz where high power and large antennas are generally employed. One of the worst problems that operators of two-way cable systems have had to date is with citizens band transmissions. There are many CB transmitters, mostly mobile, making it difficult to locate the source of the interference. The matter of leakage from the cable system to the amateur on the upstream frequencies so far has been almost non-existent because of limited use of two-way operation to date.

Interference entering the cable system on upstream frequencies results in an interesting problem. In the earlier description a typical system was shown to resemble a tree whose root is the head-end. The system branches to feed different areas until finally it reaches the subscriber, which you might liken to the end of the twig on a branch. Consider signals being transmitted from subscribers to the head-end. There is

a situation where there can be thousands and thousands of "twigs" generating signals that all come together at the head-end. Should an interfering signal enter the system, it is impossible to tell where it originated. This means that curing the interference may take a long time. In that time it can do a lot of damage since an intruding signal in an upstream data channel can totally obliterate the service. Cable operators are becoming aware of this problem and are taking steps to avoid it. The most flexible solution utilizes remotely controlled switches to selectively divide the system into areas. This technique can be used to locate the vicinity of interference entry. This section is then shut off, allowing the rest of the system to function while corrective action is taken.

**AUSTRALIA**

The WIA submits that it is essential that a comprehensive set of technical regulations and standards be prepared prior to the introduction of any form of subscription cable or pay TV service. These should be laid open for public comment before their adoption.

**THE TECHNICAL REGULATIONS SHOULD INCLUDE:—**

- (a) A set of standards for the design, installation and operation of the system compliance with which will ensure high immunity to and from interference involving other services, particularly

the Amateur Service.

- (b) Specified inspection requirements, and a means by which adherence to the standards can be enforced.
- (c) A requirement that all TV distribution using the RF spectrum, whether by cable or radiation, use channels in accordance with internationally accepted tables of frequency allocations to the Broadcasting Service.

**It is absolutely essential that a single authority be responsible for the specification of adequate standards and have adequate power to ensure compliance with those standards. Such an authority should be responsible for all technical aspects of the system including —**

- (a) A responsibility for ensuring Immunity to interference to and from the normal operations of other users of the radio frequency spectrum, and
- (b) A responsibility for ensuring that prompt corrective action is taken should such interference arise.

If there is still anyone who has any doubt about the devastation which can be caused by a sub-standard cable or pay TV system we strongly recommend that they obtain a copy of Federal Communications Commission's report number 2504 — "Three cable systems notified of apparent liabilities for forfeitures for VIOLATION OF AERONAUTICAL FREQUENCY USE RULES". ■



**TRY THIS**

**MAKING GOOD PRINTED CIRCUITS**

By D. R. Archer ZL2BIX

Much has been written about printed circuits and "easy" ways of making them. I would like to clarify a few points.

The "easy" methods generally produce mediocre boards at best. Really good boards require an expertise that is like CW, it takes time to master.

If you are smacking up an amplifier to see how it performs, and it uses only transistors and no ICs then you will probably do what I do, and draw it directly on to clean board with a felt tip. It won't get into any art exhibition but it most likely will do the job satisfactorily.

But what if you've decided on that 500 MHz counter with a zillion ICs? Ah ha, now that's a different matter.

You can get a negative from the pattern in the article by two methods. One is to overlay the pattern with mylar or drafting paper and stick the donuts and tracks on till you have built up a same-sized positive. To turn that into a negative you must lay it on top of, and touching, a suitable piece of ortho film. Now this film can be used in the presence of a RED safe light. One of its characteristics is that the black areas come out really black and the "whites" are actually clear. There are no grey tones.

That's why ordinary film is pretty hopeless for the job.

The second method, and the one I use most often, is to take a photo of the artwork in the article. It is possible to use an ordinary camera with close-up lens fitted but that is outside the scope of most hobbyists. You would still have to enlarge the negative back to its original size, so that's a lot of work. I use a 1:1 copier which I made. The only hard-to-get part is the lens, which needs to be a long focal length one.

I just happened to have an 8½ in. one on hand. You can play around for weeks trying to find suitable distances to put the copy, the lens, and the negative. The simplest way is to go to a library, look it all up and discover that if you want your negative the same size as your copy you place your copy 2x the focal length away from the lens, and likewise the negative is also 2x the focal length away from the lens. You don't have to be a mathematical genius to figure out that my distances were both 17 inches.

The copy needs to be illuminated with 100 watt lamps angled at 45 degrees, one on each side.

The film is developed and fixed in the

usual manner and hung up to dry. You now use this to print your board with.

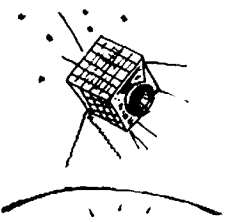
Always check for flaws in the neg. and touch up as necessary.

Pre-coated board is available in many centres. If you intend coating your own board with either liquid or spray, don't do it in the winter as the low temperatures result in highly unreliable results. However, during the warmer part of the year there's no problem. Just clean your PCB with dry steel wool. Keep water away altogether. Lightly wipe it to remove dust, apply the photo resist, allow to drain for about a minute and then place it in a box to keep light out. The photo-resist is not affected by light while it is wet; only after it has dried. Ordinary house lights don't affect it at all.

If you coat your own you will need to develop the board after exposure with a liquid called trichloroethylene, or "tricho" for short. The pre-coated board uses a developer available from the same supplier.

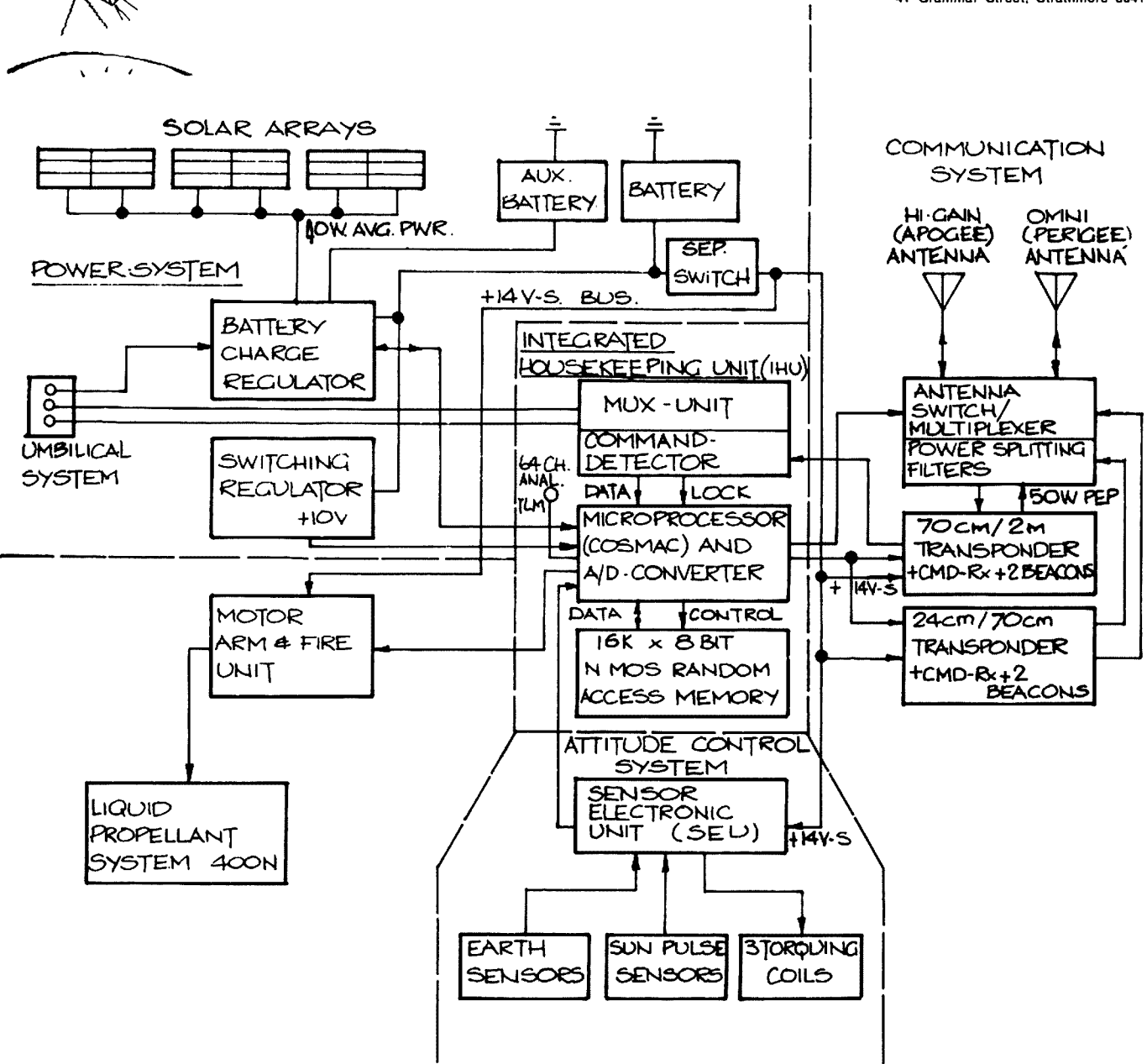
If you live where there's a lot of sun you can expose your boards for 60 seconds or less if it's totally cloudless.

Reprinted from Break-In March 1982 ■



# AMSAT AUSTRALIA

Bob Arnold VK3ZBB  
41 Grammar Street, Strathmore 3041



**PHASE IIIB S/C FUNCTIONAL BLOCK DIAGRAM**

The complete Phase IIIB spacecraft functional block diagram. You might want to study this diagram for familiarity and to keep the diagram handy. We will be referring to it frequently in future issues as we pick up the Phase III countdown series. The next instalment will be on perhaps the most complex and least understood of all the spacecraft functional units: the Sensor Electronics Unit (SEU). The complexity and elegance of this unit will amaze! The block diagram is part of a complete documentation package produced by AMSAT DL to whom we extend "viele danke!"

**NATIONAL CO-ORDINATOR:**  
Chas Robinson VK3ACR.

**CORRESPONDENTS:**  
VK3YQX, VK5AGR.

**INFORMATION NETS:**

**AMSAT AUSTRALIA**  
Control: VK3ACR.

1000 UTC Wednesday and Sunday, 3.680 MHz winter, 7.064 MHz summer.

**AMSAT PACIFIC**  
Control: JA1ANG.  
1100 UTC Sunday, 14.305 MHz.

**AMSAT SW PACIFIC**  
Control: W6CG.  
2200 UTC Saturday, 28.880 MHz.

**NEW SATELLITE DX RECORD CLAIMED**

An all-time satellite DX record is being claimed by VK4TL and WH6AMX for their RS-8 QSO early Saturday, 3rd July. Details were incomplete at press-time, but it seems certain at least that this is the first VK-WH6 QSO via satellite ever. It remains to be verified, however, but the QSO represents

the longest satellite DX on record. Congratulations to John and Rick in any case!  
COURTESY AMSAT SATELLITE REPORT.

### SATELLITE STATUS REPORT

RK0Z has not been heard since early July and it is presumed that the satellite has re-entered the earth's atmosphere and has been destroyed.

There have been no reports of this satellite being operational whilst over Australia.

UOSAT UO9 has not changed. Tones continue to be heard from the beacons on 2m and 70 cm, and AMSAT-UK reports that three independent listeners heard a distinct change of note of the 145.825 MHz beacon at 1342 UTC on 20th June.

K1WHS has received a package of data to enable him to attempt to switch the 145 MHz system from transmit to receive. K1WHS has some 3 kW of RF at the required frequency and uses an antenna having 35 dB gain.

Thanks to AMSAT-UK for this report.

AMSAT OSCAR 8 is working according to schedule. Generally switched off on Wednesdays.

RS SERIES 3 TO 8 are operating satisfactorily.

### OSCAR NEWS

Once again I have been gloating over the latest edition of Oscar News published by AMSAT-UK. As usual, it is a most informative publication. In the near future AMSAT-UK will be issuing a revised edition of "THE GUIDE TO OSCAR SATELLITE OPERATION FOR THE RADIO AMATEUR" and I hope to obtain an early copy for review.

If you wish to learn more of the UK approach to satellite operations why not join AMSAT-UK by sending a draft for £12 to Ron Broadbent, Secretary, AMSAT-UK, 94 Herongate Road, Wanstead Park, London E12, 5EQ.

By the way, AMSAT-UK is not a greedy organisation, most of your money will be spent on mailing charges. ■



AUSTRALIAN LADIES AMATEUR  
ASSOCIATION

ALARA

Margaret Loft VK3DML  
28 Lawrence Street, Castlemaine 3450

Well, our first on-air Annual General Meeting, held last night, was an outstanding success, to the delight of the committee. Twenty-two YLs, including VK2, 3, 4, 5, 6, 7 called in to register their vote and three postal votes were received. This was a very heartening response and certainly makes the efforts of our executive committee worthwhile.

Geraldine VK2NQI very capably chaired the meeting and is to be commended on the efficient and smooth running of the agenda; the constitution was unanimously adopted with the amendments as per July newsletter.

### OFFICE BEARERS

All officers indicated they were willing to continue in their respective positions for a further 12 months, so the following list is for 1982-83: President, Geraldine VK2NQI; Vice-President, Joyce VK2DIX; Secretary, Jessie VK3VAN; Treasurer, Valda VK3DVT; Editor, Marlene VK5QO; Awards Cust., Mavis VK3KS; Publicity Officer/Contest Manager Margaret VK3DML.

ALARA'S thanks were conveyed to all these girls for their past contributions and best wishes for the next 12 months by Bev VK6NYL after the business part of the meeting and this was endorsed by all on frequency.

Jenny VK5ANW has volunteered to be Historian for ALARA, so thanks to you, Jenny, and hope you enjoy compiling our records. If anyone has any item of interest or photos of earlier meetings of LARA please get in touch with Jenny, she will be very happy to receive them.

State Reps.: VK2 !!, VK3DMS Marilyn, VK4 !!, VK5ANW Jenny, VK6YL Gill, VK7HD Helene.

### PHOTOS

Girls, have you a spare photo of yourself I can include in my column, maybe a group taken at a convention, Field Day or barbecue? The photos I have received have been very popular in AR, it is so much nicer to be able to see a face with a voice. So please look through your album or even a negative will do. I will return them if requested.

Best wishes to all who sat for the exam in August and we do hope you were successful and look forward to hearing some new call signs on air very soon.

### VK8

VK8 YLs where are you? I am frequently asked if there are any; so please if you know of a YL in VK8-land let me know. If anyone is trying to work all States YL you will be very popular, also in ALARA's contest on Saturday, 13th November, 1982, from 0001 to 2359 UTC, details of rules, etc., will be in contest columns in AR and associated magazines.

ALARA membership in July 1982 is VKs 92, DX 53, in 10 countries. Valda VK3DVT, our Treasurer, would be very pleased to hear from prospective members. The address is Ms. V. Trenberth, PO Box 4, Brighton 3186. Also available from Valda are teapoons, badges and charms with the ALARA logo. These would make a nice gift.

Maybe a spoon and a subscription to ALARA would be an incentive to your YL to join you in your hobby.

Do hope everyone is well and not too many been a victim of the flu this winter, by all accounts it is a nasty experience.

Until next month 73/33/88 to all.

Margaret VK3DML. ■



This photo was taken at the QTH of Valda when Jenny was in Melbourne at the Federal Convention in May. Back row (left to right): Joyce VK3VBK, Jessie VK3VAN, Raedi YF/VK3BHL, Jenny VK5ANW, Mavis VK3KS. Seated: Valda VK3DVT, Kate Duncan.

## WIA INSERTS INTO AR



### NOTICE TO WIA ZONES, CLUBS AND GROUPS

WIA Zone, Club and other Group Secretaries are hereby notified that inserts into AR henceforward will be accepted ONLY direct from a Division and then only by prior arrangement with the Secretary.

All inserts must comply with Postal Regulations and must be received not later than the 26th of the month preceding publication date.

# HF, UHF and VHF ANTENNAS BY ATN

|                              | Gain dbi | Boom  | Price incl. balun |
|------------------------------|----------|-------|-------------------|
| <b>15/11/10 Mx</b>           |          |       |                   |
| ATN 20-30-1 rotary dipole    |          |       | \$40              |
| <b>10/11 Mx model</b>        |          |       |                   |
| ATN 28-29-3B 10 Mx           | 10.0     | 3.5M  | \$75              |
| ATN 27-18-3B 11 Mx           | 10.0     | 3.5M  | \$75              |
| ATN 27-30-3B 10/11 Mx        | 10.0     | 3.5M  | \$90              |
| <b>6 Mx</b>                  |          |       |                   |
| ATN 50-52.5-5                | 11.9     | 3.5M  | \$95              |
| ATN 50-53-8                  | 14.2     | 5.5M  | \$149             |
| ATN 50-53-11                 | 16.2     | 9.0M  | \$189             |
| <b>2 Mx</b>                  |          |       |                   |
| ATN 144-148-8                | 12.7     | 2.2M  | \$59              |
| ATN 144-148-11               | 14.6     | 3.8M  | \$69              |
| ATN 144-148-16               | 17.0     | 6.3M  | \$89              |
| ATN 144-148-13WS             | 17.3     | 7.0M  | \$89              |
| <b>70 cm Model (N Conns)</b> |          |       |                   |
| ATN 420-470-6                | 10.2     | 0.6M  | \$45              |
| ATN 420-470-14               | 14.2     | 1.5M  | \$65              |
| ATN 420-440-11               | 15.7     | 1.85M | \$69              |
| ATN 420-440-15               | 16.7     | 2.85M | \$79              |
| ATN 420-450-27               | 16.7     | 3.05M | \$99              |
| ATN 432-16LB                 | 17.2     | 3.7M  | \$85              |
| <b>UHF CB (N Conns)</b>      |          |       |                   |
| ATN 47-5                     | 9.2      | 0.65M | \$45              |
| ATN 47-11                    | 17.0     | 1.7M  | \$65              |
| ATN 47-15                    | 17.8     | 2.8M  | \$75              |
| <b>Amateur TV Translator</b> |          |       |                   |
| ATN 580-14 (N Conns)         | 17.5     | 2.0M  | \$69              |

**ALL LISTED HF ANTENNAS** use top grade 6063-T83 seamless tapered and swaged tubing elements with non-brittle ABS tough weather resistant insulators. Booms are 2" OD (longer booms use guys supplied) and elements taper from 7/8" OD or 3/4" OD depending on length. Longer elements use positive rake on insulators to reduce unsightly sag. The best possible materials have been chosen to suit tough Australian weather conditions.

**OSCAR PHASE III** Complete kit of Circularly Polarised 16EL for 2 Mx + 28EL for 70cm + Phasing Harnesses + Fibreglass Crossarm + Bracket \$435.

**TRAPLESS TRIBANDERS, 13-30 MHz, Continuous Coverage**  
(Includes new WARC & CB) (LOG PERIODICS)

| Model   | Elements | Boom (metres) | Gain dbi Minimum | Price with 2kW PEP Balun |
|---------|----------|---------------|------------------|--------------------------|
| 13-30-6 | 6        | 6.0           | 7.5              | \$319                    |
| 13-30-8 | 8        | 8.5           | 9.0              | \$399                    |

**TRAPLESS DUOBANDERS, 20-30 MHz, Continuous Coverage**  
(Includes new WARC & CB) (LOG PERIODICS)

|           |   |     |      |       |
|-----------|---|-----|------|-------|
| 20-30-6S  | 6 | 4   | 7.5  | \$199 |
| 20-30-6L  | 6 | 6   | 8.5  | \$229 |
| 20-30-8   | 8 | 8.5 | 10.2 | \$299 |
| 14-14.4-3 | 3 | 6   | 9.2  | \$179 |
| 21-31.5-3 | 3 | 4.5 | 9.2  | \$119 |

**MONOBANDERS — For 14 and 21 MHz**

|           |   |   |      |       |
|-----------|---|---|------|-------|
| 14-14.4-4 | 4 | 7 | 10   | \$269 |
| 21-21.5-4 | 4 | 6 | 9.9  | \$199 |
| 21-21.5-5 | 5 | 8 | 11.2 | \$289 |

Also available power dividers/couplers, quarter wave sleeve baluns and matching harnesses for stacks of two or more arrays; also 1:1 and 4:1 baluns in 200W or 1 kW and insulators for homebrew. Write for free catalogue.



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Dealer requests invited

## WANTED NOVICE RADIO OPERATORS

(to be)

The **Novice Operators Theory Handbook** is recently released and is just the thing for anyone who wishes to get their NAOCP. It is in fact a course book which follows closely the Dept. of Communications syllabus. Plenty of clear diagrams are used and the text is written in simple to follow language. There are sample exam questions at the end of each chapter too. This book would make an ideal gift for any budding Novice.

To obtain your copy, Write:  
**SANDY VK2AD** 110 Rosemead Rd. Hornsby 2077 if you are in NSW, QLD, or ACT. or:  
**GRAEME VK3ZR** 11 Balmoral Cres., Surrey Hills 3127, if you are in Vic., Tas., SA, WA or NT (or Regions 1, 2 or 3)

Name: \_\_\_\_\_ \* Amateur Radio 82.  
Address: \_\_\_\_\_

NOVICE OPERATORS THEORY HANDBOOK (\$7.50 incl. post) ...  
Novice Morse code Tape (\$5.00 incl. post) .....

8/10/15 WPM " " " " .....

10 WPM exams " " " " .....

15 WPM " " " " .....

10-20 WPM " " " " .....

30 WPM " " " " .....

## "THE RADIOCOMMUNICATIONS ACT"

Communications and Electronics have progressed dramatically since the Wireless Telegraphy Act was written.

After many attempts to re-write the old Act, there is now every indication that the Bill for the new Act will be 'tabled' in Parliament during the Budget Session (17 Aug.-25 Nov.).

The Bill will be given its first reading by the Minister for Communications, the Rt. Hon. N. A. BROWN — "The Bill is then open for public comment."

The National EMC Advisory Service would like to remind all Amateurs of the importance of this — "Bill for the New Act" — and the direct effect this new Act could have on the Amateur Radio Service.

The "Bill" is the "Act" in draft form; therefore it can be amended many times, before it becomes an Act... Copies of the Bill should become available at the Government Printer's Office after the first reading.

Every member of the Amateur Radio Service should, in the interest of the continued well-being of our Service, ensure that he or she is familiar with all aspects of the Bill, which directly or indirectly affect the Amateur Radio Service.

The National EMC Advisory Service is assisting the Federal Executive in setting up a committee to handle the Institute's response to the Bill. The committee has been instructed to take account of opinion from all areas when responding to the Bill.

If, after studying the contents of the Bill, you feel that you have a contribution, or may be in a position to assist the committee with any facet of this important response, please WRITE to your Division, or direct to:

CHAIRMAN, C.A.S.P.A.R.  
(Communications Act Special Planning and Response) Committee, P.O. Box 150, Toorak, 3142.



# EDUCATION NOTES

Brenda Edmonds VK3KT  
Federal Education Co-ordinator  
56 Baden Powell Drive, Frankston 3199

## FEE INCREASE

The proposal to increase examination fees has been around for some time. There are a few comments I would like to make. I think we have to accept that the present fees are unrealistically low — that they cannot cover a fraction of the costs involved in the processing of applications, arranging exams, providing papers, marking and notifying results. The ones who have gained most from the low fees have been the candidates who needed "EXAM PRACTICE", or to overcome "EXAM NERVES".

If the fees are significantly increased, candidates will presumably be less likely to enter unless they think they have a reasonable chance of passing, and so will miss this experience. I do not think there will be any marked drop in the number of attempts per candidate — those who need the exam practice will be those who will most likely need to have two attempts at the exam.

It will be interesting to see whether increased fees will result in a higher pass rate.

## MAY NOVICE RESULTS

Statistics for the May Novice exams have

been released recently, and are available on request. As usual, pass rates vary with the section — being highest for CW sending (range 52.6 per cent for VK7 to 93.2 per cent from VK5/8) and lowest for theory (36.8 per cent VK7 to 58.2 per cent VK4). Nationwide averages work out at — theory 50.2 per cent, regulations 69.1 per cent, CW sending 79.9 per cent, CW receiving 59.5 per cent. The total pass rate for all sections of Novice level was 1,007 out of 1,608 candidates sitting — 62.6 per cent.

However, when we look at the pass rate in terms of applications received, it is a very different story — 2,277 candidates applied — over 650 did not actually sit. This would seem to be where the main reorganisation is needed. Obviously a "drop out" rate of 30 per cent must account for a large part of the administration costs.

The point that immediately comes to mind is the long time gap between the closing date for applications and the exam date. It is to be hoped that DOC consider this aspect as well as just the fees. Perhaps they will also consider evening or weekend exams.

## INSTRUCTIONAL GUIDANCE

Plans are proceeding for the production of an instructor's kit to be made available to persons running classes at either level. By the time this appears, Divisions should have been notified in more detail of what is happening, but I would like to appeal here to anyone who feels they can contribute anything to this project to contact me direct. If you have run a course — Novice, AOCF or bridging — what sort of assistance would you have appreciated — which sections of the course were lacking in resource material? What input can you offer to a group that is trying to take some of the effort, and loneliness, out of the instructor's role? Would you like to be part of the group? Do you have any particular talents you can offer the group? We are looking towards having material ready for trialling by early 1983, but we are going to need help. I can be reached QTHR, by phone (03) 787 5350, or on the Education Net, Wednesday evenings 12.00 UTC, 3.685 MHz. I will be looking forward to hearing from YOU.

73. Brenda. ■

WHEN YOU THINK OF



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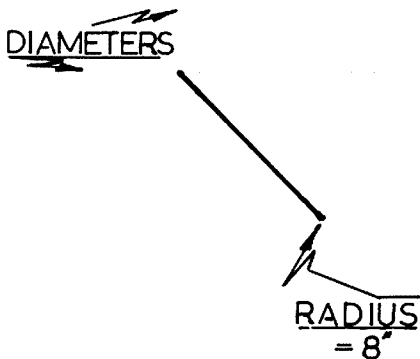


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# June AR Competition Winner

The Problem was:  
Find the radius of this circle



The correct solution: 8 inches — as illustrated

Mr. W. E. CATCHPOLE VK5AU  
74 Church Terrace  
Walkerville, SA 5081  
was the lucky winner of the MFJ-402 SOLID STATE ECONO KEYS kindly donated by GFS ELECTRONIC IMPORTS for the Competition announced in JUNE AR. Congratulations to our winner, thanks to the overwhelming number of members for the entries submitted and GFS ELECTRONIC IMPORTS for making the prize available.

### CORRECT SOLUTION

The correct solution as shown was 8 inches. A perusal of the entries after the drawing showed answers ranging from 3 to 53.17864 inches. If you missed out on winning or entering, turn to page 25 August AR and try your hand at a different type of brain teaser and a chance of winning Competition No. 3.

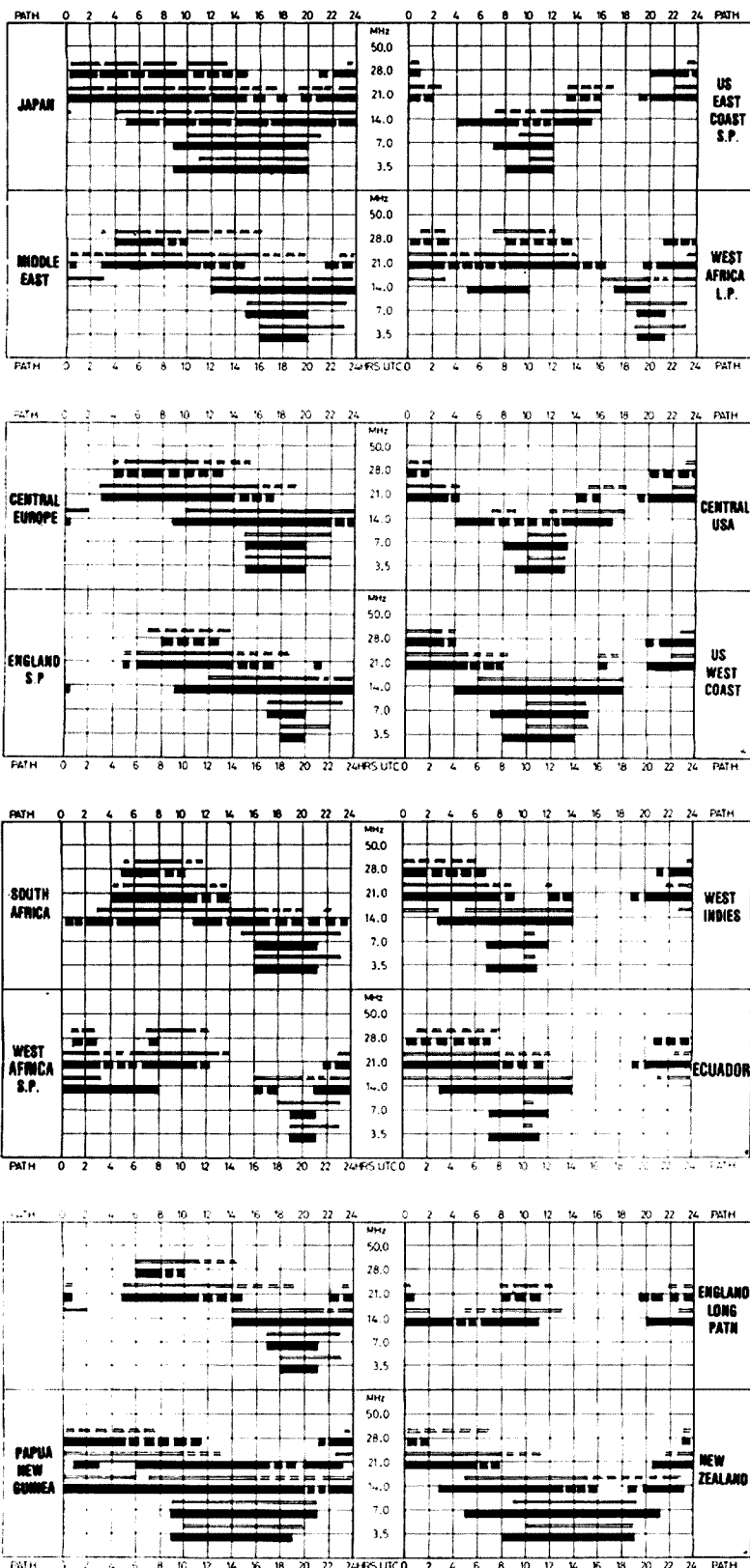
**WIA**  
**COMPETITION**  
# 2



Bruce VK3UV drawing the correct winning entry.

# IONOSPHERIC PREDICTIONS

Len Poynter  
VK3BYE



# WICEN NEWS



R. G. Henderson VK1RH  
171 Kingsford Smith Drive, Melba, ACT 2615

"It is some three years since this column contained an example of a formal message sent by radio. Listening recently to the bands I am of the opinion that it's time to print a reminder of that procedure."

The formal message example chosen is from the ACT WICEN course lesson notes and the accompanying sender's script is self-explanatory. VK1RH was the sender and VK1ZDF the receiver.

The procedure used is that given in the "little grey book", Civil Defence Communications, Part III, 1969. As always, the aim is to clearly and quickly convey the contents of the formal message over the network.

## FORMAL MESSAGE — SENDER'S SCRIPT

VK1ZDF — THIS IS VK1RH — LONG MESSAGE — OVER.

VK1RH — THIS IS VK1ZDF — SEND — OVER.

THIS IS VK1RH — PRECEDENCE ACTION — ROUTINE — TIME TWO SEVEN ONE FOUR ZERO ZERO KILO JUNE 82 — ORIGINATOR'S NUMBER BRAVO SIERRA 7 — FROM BRINDABELLA SEARCH HQ — TO CES — BREAK — EXERCISE.

PARA 1 — STOP — SEARCH CONTINUES AS PLANNED — STOP — ROGER SO FAR — OVER.

VK1ZDF — ROGER — OVER.  
VK1RH — PARA 2 — STOP — RESUPPLY REQUIREMENTS FOR NEXT FIGURES 24 HOURS FOLLOW — STOP — ALPHA STOP — MEALS FOR FIGURES 25 SEARCHERS AND FIGURES 5 FOR HQ STAFF TO BE DELIVERED TO THIS HQ IN SEPARATE HOT BOXES — STOP — ROGER SO FAR — OVER.

VK1ZDF — ROGER — OVER.  
VK1RH — BRAVO — STOP — WATER COMMA FIGURES 10 PLASTIC JERRICANS — STOP — CHARLIE — STOP — PETROL COMMA FIGURES 44 GALS WITH PUMP — STOP — DELTA — STOP — FIGURES 25 WATERPROOF SMOCKS — STOP — ROGER SO FAR — OVER.

VK1ZDF — ROGER — OVER.  
VK1RH — ECHO — STOP — FIGURES 6 BY FIGURES 12 VOLT CAR BATTERIES FOR RADIO BASE — STOP — FOXTROT — STOP — FIGURES ONE HANDSET TYPE 1 SPELL HOTEL UNIFORM FIGURES 38 — STOP — ROGER SO FAR — OVER.

| Department of Defence<br>MESSAGE FORM                                                                                          |   |                                                                                 |      |                                  |          |                      |      | SECURITY CLASSIFICATION AND<br>SPECIAL HANDLING INSTRUCTIONS |        |          |                         |
|--------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------|------|----------------------------------|----------|----------------------|------|--------------------------------------------------------------|--------|----------|-------------------------|
| QC 33<br>Introduced Mar 77<br>Formerly<br>CM109, F Sigs 52-1, A224<br><i>Note: Shaded areas are for Comman/Stigs use only.</i> |   |                                                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
| LINE 1                                                                                                                         |   |                                                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
| LINE 2                                                                                                                         |   |                                                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
| LINE 3                                                                                                                         |   |                                                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
| LINE 4                                                                                                                         |   |                                                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
| LINE 5                                                                                                                         |   |                                                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
| PRECEDENCE - ACTION<br>ROUTINE                                                                                                 |   | PRECEDENCE - INFO<br>ROUTINE<br>2                                               |      | DATE - TIME GROUP<br>271400JUN76 |          | MESSAGE INSTRUCTIONS |      |                                                              |        |          |                         |
| ROUTING INDICATORS                                                                                                             |   | FROM <u>BRINDABELLA SEARCH HQ</u><br><i>(Write only one addressee per line)</i> |      |                                  |          |                      |      | SIG/ORIG NO                                                  |        |          |                         |
|                                                                                                                                |   | TO CES                                                                          |      |                                  |          |                      |      | BS7                                                          |        |          |                         |
|                                                                                                                                |   |                                                                                 |      |                                  |          |                      |      | GR                                                           |        |          |                         |
|                                                                                                                                |   | <u>EXERCISE 1. SEARCH CONTINUES AS PLANNED.</u>                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>2. RESUPPLY REQUIREMENTS FOR NEXT 24 HOURS. FOLLOW.</u>                      |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>A. MEALS FOR 25 SEARCHERS AND 5 FOR HQ STAFF</u>                             |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>TO BE DELIVERED TO THIS HQ IN SEPARATE HOT</u>                               |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>BOXES.</u>                                                                   |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>B. WATER, 10 PLASTIC JERRICANS.</u>                                          |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>C. PETROL, 44 GALS WITH PUMP.</u>                                            |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>D. 25 WATERPROOF SMOCKS.</u>                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>E. 6 BY 12 VOLT CAR BATTERIES FOR RADIO BASE.</u>                            |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>F. 1 HANDSET TYPE HU38.</u>                                                  |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>3. IF HIKERS NOT FOUND BY 281200K WILL NEED TO ROTATE</u>                    |      |                                  |          |                      |      |                                                              |        |          |                         |
|                                                                                                                                |   | <u>SEARCHERS AND REST PRESENT PARTY FOR 24 HOURS.</u>                           |      |                                  |          |                      |      |                                                              |        |          |                         |
| PAGE NO                                                                                                                        |   | DRAFTER'S NAME AND TITLE                                                        |      |                                  |          | PHONE NO             |      | REF FILE NO                                                  |        |          |                         |
| 1                                                                                                                              |   | HENDERSON                                                                       |      |                                  |          |                      |      |                                                              |        |          |                         |
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|                                                                                                                                |   |                                                                                 |      |                                  |          |                      |      |                                                              |        |          |                         |

Stock No 7620-66-094-6819

Message Form sample

VK1ZDF — ROGER — OVER.  
VK1RH — PARA 3 — STOP — IF HIKERS NOT FOUND BY TIME 281200 KILO WILL NEED TO ROTATE SEARCHERS AND

REST PRESENT PARTY FOR FIGURES 24 HOURS — STOP — OVER.  
VK1ZDF — ROGER — OVER.  
VK1RH — ROGER — OUT.



# INTERNATIONAL NEWS

## 10 MHz BAND

A count in June showed that amateurs in 29 countries were operative on, or could use, the new 10 MHz band. Most amateurs will, by now, be aware that all three IARU Regional organisations are encouraging the use of narrow band modes only for this band.

## 18 AND 24 MHz BANDS

So far only four countries have authorised the use of this band by their amateurs — Denmark, W. Germany, Netherlands and Switzerland.

## FOUNDATION DATES OF SOCIETIES

- WIA — 10/3/1910.
- RSGB — 5/7/1913.
- ARRL — 18/5/1914.
- SRAL (Finland) — 14/4/1921.

## IARU REGION 3 ASSOCIATION

Arising from the Manila Conference in April the new IARU R3 Secretary is Masayoshi Fujioka JM1UXU, replacing David Rankin 9V1RH/VK3QV, who is now Chairman of Directors.

## JAPAN

A letter from Joe Speroni, the President, advises that the Tokyo International Amateur Radio Association (TIARA) has been formed for alien amateurs resident in Japan. The address is given as PO Box 119, Akasaka, Minato-ku, Tokyo 107. Visitors are very welcome to attend TIARA Club meetings held on the last Friday of every month. Also mentioned was the fact that alien amateurs who are resident in Japan and citizens of USA, West Germany, Finland or Eire can operate in Japan via Japanese club licensing procedures. Negotiations for full reciprocal licensing with twelve countries are under way.

## 5Y4ITU TO OPERATE AT ITU CONFERENCE

To commemorate the Plenipotentiary Conference of the ITU, which will be held in Nairobi from September 28th to November 5th this year, the Radio Society of Kenya (RSK) plans to set up and operate a special event station in the Jomo Kenyatta Conference Centre, Nairobi, which is the venue for the ITU Conference. It is planned to operate the special station during a period of four weeks, starting October 12th. The RSK is requesting a change of prefix for the duration of this event from 5Z4 to 5Y4 to be effective for all amateur stations operating in Kenya and also permission to use the special call sign 5Y4ITU for the Conference Centre station.

Fifty first day covers, which will be issued by the Kenya Posts and Telecommunications Corporation to commemorate this event, will be purchased so that one may be sent with the QSL card to the first 50 stations making a QSO with 5Y4ITU.

From ITU Calendar No. 112

## JAPAN: REPEATERS AUTHORISED

The introduction of repeaters into the amateur service in Japan was approved by the Ministry of Posts and Telecommunications on January 23rd, 1982. The policy the ministry announced as to the licensing of repeaters includes the following conditions:—

- Licensees should be the Japan Amateur Radio League.
- Repeaters should not be operated portable but be fixed stations.
- Repeaters will be licensed only in the 430 MHz and 1.2 GHz bands.
- Antenna power is limited to 10 watts on 430 MHz and 1 watt on 1.2 GHz.

The first repeater, JR1WA, located at the JARL headquarters in Tokyo, was licensed on March 5th. Its input frequency is 434.92 MHz, and the output 439.92 MHz. The JARL intends to establish a repeater in each of the ten call districts and in Okinawa Prefecture: a total of eleven.

## Chuckle Corner



I have been rather busy lately with a thorny antenna problem. Some new people moved in recently a few houses away, and in the first week a dipole appeared behind the house. It was slung high in the trees in such a way that I can just see the feed point and transmission line as I leave my driveway in the mornings.

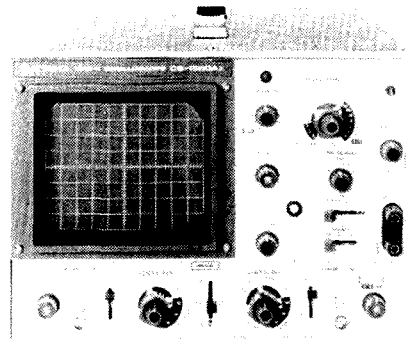
Before I had a chance to talk to any of the people there, I noticed that the feed point on the antenna was in a different position from the day before. In fact, it was different almost every day. By estimating the distances of the feed from each end of the antenna, and by listening for a loud nearby station, I tried to work out how the antenna was able to radiate on several of the ham bands. It would appear that the antenna is of very flexible design with one "leg" measured to resonate on the desired frequency while the other might be grounded. Or perhaps the resonant part naturally takes the signal because the impedance is low, while the impedance is too high in the non-resonant part.

I have had several quite reputable engineers working on the problem, as is a rather large computer at a certain nearby college. So I was amazed yesterday as I walked out of the house to ask the owner about the wonderful all-band antenna, and found a large hairy dog attached to the end of the down lead. I understand that it is called a dog trolley or dog walker. The animal's leash is looped over its overhead rope so he can move around the yard. I hope that none of my friends find out about this.

From The Spark Gap (Wellesley ARS) by N1A0X



# CS-1560A<sub>II</sub> 130mm Triggered Sweep Oscilloscope



SPECIAL OFFER!

# \$599.00

Including 2 probes, sales tax and delivery anywhere in Australia

## FEATURES:

- \* Sweep times are selectable in 19 ranges from 0.5  $\mu$ s/div to 0.5 s/div. A x 5 sweep magnifier expands its application range considerably and makes the instrument truly easy to use.
- \* A low vertical-axis input capacitance and a high deflection sensitivity of 10 mV/div. The frequency range is broad enough to cover from DC to 15 MHz.
- \* Automatic selection of Chopped or Alternate sweep modes.
- \* To provide high electron-beam permeability, a high luminance cathode ray tube is used.
- \* Trace rotation is included to simplify angular corrections for bright lines.
- \* A wide selection for synchronization (INT, CH1, CH2, LINE and EXT).
- \* During Lissajous measurements, the instrument uses a high deflection factor X-Y system with CH1 used as the Y-axis and CH2 as the X-axis.
- \* Permanent oscilloscope trace records are readily available with the furnished bezel adaptor and scale illuminator when using a camera.
- \* A newly designed blanking circuit permits clear and clean trace observations for signals with a sharp risetime.
- \* Extensive application of ICs has simplified circuitry and improved instrument reliability.

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# AR SHOWCASE

## A True ZL Repeater Story



By Fred Johnston ZL2AMJ  
From Break-In June 1982

Repeater stuck on transmit . . . strong signal on input . . . "Happy Flyers" DF gear brought into use . . . bearing taken . . . move to new site . . . cross-bearing taken . . . motor to intersect of bearings . . . park . . . look about . . . looks like a radio amateur's house . . . untidy dipoles . . . monitor on hand-held . . . excessively strong signal . . . knock on door . . . hear the knocks coming back from the speaker in the hand-held! . . . obviously the house! . . . no one home . . . call on neighbours . . . phone the house . . . hear the telephone bell ringing in the hand-held! . . . neighbour tells of a relation of the occupant down the street . . . phone relation . . . time of return of occupant and present whereabouts not known . . . house on market . . . suggests use of land agent's key to gain access . . . call on land agent . . . get key . . . return to premises . . . enter . . . disable transceiver . . . looks like a fault in mike pressel switch . . . leave note at rig . . . leave another note in letter-box . . . return key to land agent.

The later explanation by the amateur concerned was that the rig (a hand-held) was put on to charge during a shopping visit. Moral of story: Don't make work for others.

Check that your gear is NOT left on transmit;

Remember that pressel switches, extension mike leads, and so on, can develop faults;

Expenses incurred in this DF activity could be reasonably claimed against the offender — or a donation to club funds could be expected in lieu.

A simple cure would be to chop the coax at the antenna — but respect for an expensive rig and possible damage led to the time-delaying key-finding cure. Every user of a transceiver carries a responsibility to NOT lock-up a repeater.

CHECK, CHECK, CHECK. This is a warning. Don't be next!

### A NEW IC740A FROM ICOM

It is with pleasure Vicom International announce the release of an addition to the Icom family of HF transceivers.

The IC740A has all the well known features of the IC720A and IC730 but has added capability and flexibility. It is the big brother of the IC730, orientated toward a base station usage, as it has built-in features which are normally expensive options in other models.

Features included in the IC740A are 160 metres, continuously adjustable AGC, continuously adjustable noise blanker, notch filter on receive, standard IF shift and pass-band tuning, squelch on sideband and CW and FM.

With an optional FM module the FM 10 metre band can be worked. There is also an optional internal power supply and toward the end of the year an optional AC power supply will also be available.

The IC740A will be available in early October and all enquiries may be addressed to Vicom or any of their authorised agents.

### GROUND INDEPENDENT MOBILE ANTENNAE FROM SCALAR

UHF and VHF ground independent antennae are designed for use on vehicles where a standard whip antenna is not practicable because either a ground-plane is not available or is insufficient or if there are roof-top obstacles such as pack racks, ladders or beacon lights.

These antennae also overcome the necessity for drilling holes in the roof as they are specifically designed for fitting to the guttering, boot lid, ski bar or, on larger vehicles, the wing mirrors.

Two models are available, the GRH which covers frequencies 144-174 MHz and the GRN for 450-520 MHz. Both have a significant performance gain over quarter-wave length whips mounted in the same positions.

**CONSTRUCTION:** The GRN-1 utilises a fibreglass radome with additional protection of the stainless steel spring and the GRN-2 and GRH have a heavy duty coil section and stainless steel whip as a radiator.

These antennae are field tunable to frequency and are ideal for marine application or for amateur use on the 2 metre and 70 cm bands and are available from all Scalar offices in Melbourne, Sydney, Brisbane and Perth.

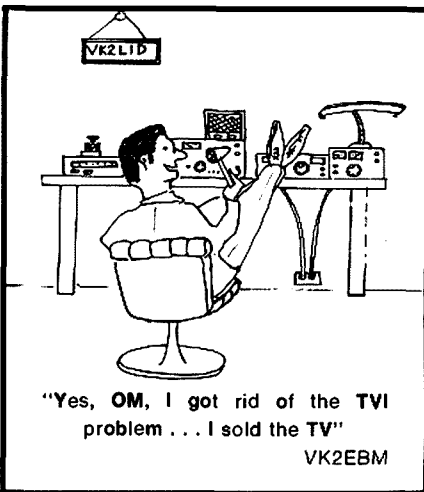
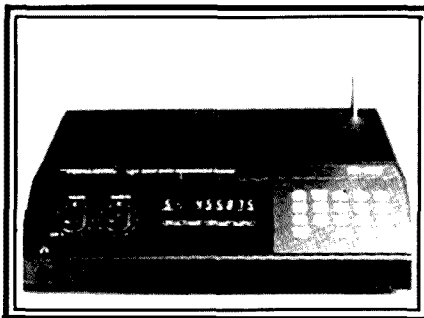
### ECONOMY SCANNER

The new Realistic "PRO-2009" scanner receives your choice of eight frequencies in the Australian low VHF band (68-88 MHz), amateur 2m band (144-148 MHz), VHF high band (148-174 MHz), amateur 70 cm UHF band (410-450 MHz) and commercial UHF bands (450-470 and 470-512 MHz).

Crystals are not required, instead frequencies to be listened to are keyed in on its calculator-like keyboard, and are then picked up by its built-in microprocessor. A nine volt battery backs up the scanner's "memory" so the programmed channels are not lost when the unit is disconnected from the 240 volt mains.

The scanner also has the ability to hunt for unknown channels with a built-in "search" feature. The user can key in a starting frequency and let the scanner search upwards to the end of the band for active channels.

For further information contact Tandy Stores and their nationwide dealers.



## CHANGE OF ADDRESS

If you have changed your address or if you intend shortly to change address —

**PLEASE**

Notify the Executive Office as early as possible:

**Do not leave this to be done when you pay your subscription at the end of the year.**

**EXECUTIVE OFFICE**

**P.O. Box 150, Toorak, Vic. 3142**



Journalist for the month:

Jenny Warrington VK5ANW  
59 Albert St., Clarence Gardens, 5039

## OOPS

Well, no one is perfect! I was very pleased to receive a number of complimentary remarks on my first column, but the one criticism I received was well deserved. I wrote about the WICEN "boys" and was smartly reminded that here in VK5 we have two WICEN "girls". Janet VK5NEI and Marlene VK5QO are both active members and can be heard regularly on the weekly nets. Sorry, girls, I should be the last person to forget the YLs.

## HISTORY

The upsurge of interest in things historical is proving to be infectious and Clarry VK5KL is one of those to have caught it, in fact at the time of writing Clarry looks like being a strong contender to win the "Name of the Presidents" competition. Tom VK5TL, George VK5RX and Shep VK5DC are amongst the "Old Timers" who have had the foresight to put their early memories down on paper. I find it very sad that so much has already been lost to us for ever. Amateurs are only mortal (although some of them may try to prove otherwise!), so act now! If you have items that are of historical interest, particularly papers and photographs pertaining to Amateur Radio, make sure that your next-of-kin know which they are, so that if you don't want to part with them at present, they can be ear-marked for the WIA, and won't end up in the incinerator. Brian Austin VK5CA has been having a great deal of success in contacting the relatives of some of our earliest Divisional Councilors. We have been able to borrow and copy early papers and photographers that would otherwise have been unavailable to us. Hopefully much of this will be published in future volumes of the WIA Book.

## TROPHY

Dick Baty VK5MD (formerly VK5MH) has donated his 1934 Fisk Trophy to the Division, and we will be pleased and proud to display it in the headquarters building. The trophy was for a 6-stage relay contest, the message was apparently passed from State to State and I think it eventually had to return to the originating station. I can't for the life of me see how one scored the thing or how they decided who had won. If there is anyone around who still remembers, perhaps they can explain it to me!

## OUT WITH THE OLD ED!! — WHERE IS THE NEW??

The last issue of our local Journal was the final one to be edited by Murray VK5TC. During the time Murray was the Editor, the Journal has improved out of sight, particularly with the photographs which Murray travelled far and wide to take. Thanks, Murray, for all the time and effort you put into it, and we hope that we shall soon be able to name a new editor — intending

applicants PLEASE contact your Councilors NOW!

## FORTHCOMING MEETINGS

28th September: Peter Brooks and Colin Ralph (VK5KCR), of Mac Audio Consultants, will speak on "Audio and Psychoacoustics".

26th October: Display of Member's Equipment. ■



David Johnston VK3YWZ  
62 Naples Road, Mentone, Vic. 3194

This month I am presenting extracts from the Annual Report of the Council for the year ended May 1982, tabled by Council's then Immediate Past President, Alan Noble VK3BBM.

## MEMBERSHIP

Although current VK3 membership fees appear higher than other Divisions, there are additional members services available within this Division.

All inward and outward QSL cards are handled free of charge through the Bureaux. Country members enjoy the extra service of a free posting of inwards QSL cards every three months. 20,000 unclaimed QSL cards have been transferred to the rooms from the QSL Bureau.

In Victoria the pensioner membership rate is available to people receiving small fixed incomes and superannuation which may be less than Government pensions. It is also available to any member over 65 who elects to pay the reduced fee.

The Division pays for licences, land rent and power costs for each repeater licensed in the name of the WIA. In addition, we are the only State to provide insurance cover on equipment and personal accident, and third party cover for members while engaged on repeater, WICEN or other official WIA business.

The following services are also available exclusively to members of the Institute: Disposals, library facilities and copying services, book purchasing and support with applications for antenna masts. Victoria has the largest membership of any State with 1,971 members. That is 43 per cent of the total number of licences issued by DOC in Victoria.

## RESOURCES

The financial position of VK3 Division is in line with forecasts with a surplus income of \$11,729 as at 31/12/81. Current liabilities are at a low level, particularly with the payout of the mortgage on Brunswick Street. Recent rises in interest rates prove the wisdom of this move.

The main assets of the Division are properties at 412 Brunswick Street, Fitzroy, and a lease over a double block of land at Bendigo. The Bendigo property contains an antenna tower and a Nissan hut which the Midland Zone has put to good use for its meetings.

Improvements to the rooms in Fitzroy include a security room to provide working space for the Secretary and for the Division records, including some new record systems which will permit better management facilities for the members.

The rooms have again been open from 10 a.m. to 3 p.m. each day thanks to the dedication of a team of volunteers. This team handles the day-to-day enquiries received from all over the State and provides a direct contact point for all members. All

## INTRUDER WATCH



**Do you know why it is essential to report intruders on your bands? If not, consider Regulation 342 of the ITU International Radio Regulations:**

*342: Administrations of the members shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations given in this Chapter or the other provisions of these Regulations, except on the express condition that harmful interference shall not be caused to service carried on by stations operating in accordance with the provisions of the Convention and of these Regulations.*

Harmful interference is defined by Regulation 163 as:—

*163: Harmful interference . . . seriously degrades, obstructs or repeatedly interrupts a radiocommunications service operating in accordance with these Regulations.*

What this means is that the Russians, Chinese or any other state can put its various services on any frequency it chooses, provided that it doesn't interfere with the official user of that frequency. Moreover, an intruder is not causing harmful interference within the meaning of Regulation 163 if there are no complaints!

The other "catch 22" in this situation is that the state allowing the intruder to operate on "your" bands can over a period of time claim that frequency for his own exclusive use on the basis that the frequency is obviously not being used as there have been no complaints of harmful interference.

There are an ever increasing number of intruders slowly but surely taking over "your" bands and, as sure as day and night, you will lose them eventually. So don't rely on other people to report all the intruders that you hear, they might be relying on you to report them. But, why worry, there is always UHF CB.

From VK1 Division ■

**JOIN A NEW MEMBER NOW!**

orders for books are handled by the team, including packaging for despatch by post.

The QSL Bureaux have been very busy throughout the year with a major impediment to the smooth running of the inwards QSL Bureau being the large number of cards remaining uncollected. The outwards Bureau has continued to provide handling of cards to rarer destinations on behalf of smaller States, particularly Tasmania.

#### COUNTRY MEMBERS

Council is pleased to note an increase in activity in most country areas over the last 12 months. The North West Zone, despite its geographic isolation, continues to show keen interest in activities, and has a particularly strong WICEN group.

The North East Zone, reactivated in 1980, is going well, with some particularly active members. The East Gippsland Zone appears fairly quiet, while the Eastern Zone has had a busy time this year.

The Western Zone appears to have some problems due to the "peppering" of its members over a large area of the State, but seems to meet most of its needs under the auspices of various active groups. Any recommendations from responsible groups for additional improvements will be welcomed by Council.

Most zones have participated in the zone net commenced in the last twelve months. The net, on Sundays at 1000 UTC on 3.610 MHz, will enable better communications between zones and with Council, if all appropriate support is given.

It may not be known generally that country zones receive a rebate of members' fees on a per capita basis. In addition, a number of country projects are financed by the Division either wholly or in part. Council has always been most sympathetic to the needs of the country member and will continue to support their activities.

Indeed, during the year a number of visits by various members of Council were made to country centres. Council attaches great importance to these visits and encourages country members to take full advantage of them.

#### AND ON THE AIR . . .

This year has seen some unfortunate events on the repeater scene. VK3RMM (Mt. Macedon) suffered from ills, including a major power supply problem. RML (Mt. Dandenong) was QRP for some time due to a weakness in another services equipment, as well as other minor problems.

RGL (Geelong) suffered a spate of thefts, including antenna, coax and filters. RBA (Ballarat) was taken out of service for transmitter maintenance and modifications, and subsequently the receiver was removed from service for a major redesign.

The Division obtained a site on Mt. Wombat for RGV, which is seeing sterling service, and RMA has received approval for a QSY from channel 7000 to 6800 to avoid QRM involving RNE, RGL and VK5RAD.

The beacon RTG will shortly be relocated in Dandenong, after its successful QSY to 144.430 MHz. It is expected also that RWU will relocate shortly to Mt. Wil-

liam. RGU at Carrarung came into operation, as did RWI, the portable WICEN UHF repeater.

Recent town planning legislation mooted for antenna masts over 8 metres high, or antennas over 3 metres in horizontal dimension, resulted in representations to the Minister for Planning. The Institute was invited to take a lead role in developing guidelines on this matter.

The Division is still conferring with the Municipal Association of Victoria as a result of various papers submitted. Assistance has also been given to amateurs making application for erection of antenna masts, as well as representations to the Town Planning Appeals Tribunal on behalf of members. So far all appeals have been determined in favour of the amateur.

To quote Alan Nobles' closing remarks, "This year the achievements of the Division have again rested on the shoulders of a few. Those few have families like you do, they have other commitments like you do. Will you make an effort in 1982-83 to do your bit so that the words 'What the heck with Vic. Div.—it doesn't do anything anyway are only heard from those who are not in touch?'"

Copies of the complete Annual Report have been sent to all Divisions and are also available from the Institute rooms at 412 Brunswick Street, Fitzroy.

Members are reminded that ALL communications for Victorian Division except renewal of subscriptions should be sent to "The Secretary, WIA Victorian Division, 412 Brunswick Street, Fitzroy 3042". The telephone number is 417 3535. ■

#### WIA VICTORIAN DIVISION FORWARD PLANNING

*A meeting of INTERESTED FINANCIAL members of VK3 will be held on Saturday, 25th September, 1982, at 1.30 p.m.*

**VENUE:**  
412 Brunswick Street, Fitzroy.

**SUBJECT:**  
*Where do we go from here?  
We must plan for the future.  
It does not just happen.*

*Council NEEDS and SEEKS your thoughts, opinions and ideas to enable it to plan ahead in the best interests of*

#### AMATEUR RADIO IN VK3.

*This is not someone else's responsibility. He died of overwork years ago. As a member of VK3 this responsibility rests directly on YOUR shoulders.*

*If you cannot attend, put your ideas in writing and forward them to the Secretary.*

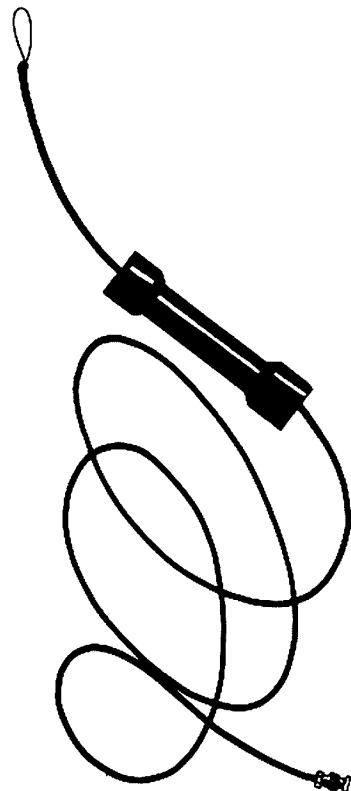
73. WIA VK3 Council.

Des Clarke VK3DES.

Secretary. ■

# \*NEW!

## 2 METRE "STOCKWHIP"



### Communicate with SCALAR

A fold away, flexible dipole antenna. Enables you to extend the range of your 2 meter hand held transceiver . . . At home, in the office, camping, caravanning, — all sorts of places!

You replace the transceiver stubby with the Scalar "Stockwhip" — hang it up by the convenient nylon loop — and listen to the improvement.



#### SCALAR GROUP

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PARRAMATTA

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LISTEN TO BROADCASTS  
FOR FURTHER DETAILS



Presentation to Virginia Matthews and Jean Adams at the July Council meeting. Left to right — Back: Peter VK2PJ, Athol VK2BAD, Jeff VK2BYY, Gordon VK2ZAB, Steve VK2PS; Front: Tim VK2ZTM, Virginia, Jean, Sue VK2BSB.

## COUNCIL REPORT

Divisional Council met on the 9th of July, this being the last meeting to be held at 14 Atchison Street, Crows Nest. All future Council meetings will be held at the new headquarters of the NSW Division at 109 Wigram Street, Parramatta.

Council noted that three positions existed within the Division for volunteers (see August AR and this month).

Twelve new applications for membership were received and accepted.

The move of the Divisional Office to Parramatta was discussed and Athol Tilley VK2BAD was appointed Property Officer for the new premises. Designs for the office and store room partitioning as well as the combined library/meeting area were discussed and Council authorised an expenditure of \$16,000 for this work. It was decided that the office would not be open until this work could be completed, but to maintain member service, all mail orders and enquiries would be regularly processed.

It was resolved that the personal Morse classes conducted by the Division were to be discontinued, due to the financial loss and low numbers. Council felt that the NSW Division provided adequate alternate avenues for Morse instruction, for example, the nightly slow Morse transmissions on 80 metres provided by the volunteers using VK2BWI, tapes produced by the volunteers from the NSW WIA Education Service and the VHF Morse beacon provided by the Hornsby and Districts Amateur Radio Club.

During the meeting, a presentation was made to two retiring employees. Jean Adams was our cleaner for 17 years, and Virginia Matthews was our Administrative Secretary for 4½ years. Divisional President, Susan Brown VK2BSB, made a presentation to each and spoke on the long and valued service each had provided to this Division. Council recorded its appreciation on behalf of members.

## HOMEBREW COMPETITION

Did you read the item about this competition in the August Mini Bulletin? Remember the closing date, the 30th of November, when your completed and marked entry form must be received by the Division.

## NEXT CONFERENCE OF CLUBS

Now is the time to consider which items you would like discussed at the next Conference of Clubs. These conferences are advisory policy making bodies of the Division and Council has implemented many of the recommendations of previous conferences. Discuss your ideas at your local affiliated club meeting or put them to your club committee.

The next Conference of Clubs will be hosted by the Westlakes Amateur Radio Club at Teralba, near Newcastle, on the 31st of October. Affiliated Clubs are reminded that agenda items must be received by the Division by the 17th of September to allow time for circulation.

## OSL CARDS

Members who normally had their QSL cards sent to and from Atchison Street should have received a letter from the QSL Bureau asking whether they still want their cards delivered to Parramatta. Any member who would like to send and receive their QSL cards via the new office at Parramatta can do so by advising the VK2 QSL Bureau at PO Box 73, Teralba, NSW 2284.

## VK2 SLOW MORSE SERVICE

Marshall Emm VK2DXP, the VK2 Slow Morse Supervisor, has provided the results to date for replies to the questionnaire on page 37 of June AR.

1. Text: Plain — 10 per cent; letter groups and number groups — 0 per cent; mixed letter/number groups — 10 per cent; combinations — 76 per cent; other (QSO format) — 4 per cent.
2. Speed: 3-4 — 5 per cent; 5-8 — 24 per cent; 10-12 — 52 per cent; 13+ — 19 per cent.
3. Status: Prospective Novice — 14 per cent; prospective Full — 48 per cent; Full call — 38 per cent.
4. All sessions should be same format: Yes — 10 per cent; Different — 76 per cent; no answer — 14 per cent.
5. Text should be read back on phone: Yes — 86 per cent; No — 10 per cent; no answer — 4 per cent.
6. Willingness to serve as relief operator: Yes — 38 per cent; No — 29 per cent; no answer — 23 per cent.

Marshall says it appears safe to conclude that people mostly want mixed material in different formats at speeds appropriate to their licence category (or aspirations) and prefer the text be read back on phone. The volume of response was disappointing, but it must be kept in mind that the survey was limited to readers of AR. Most prospective Novices would not be WIA members, so please don't conclude from the above that only 14 per cent of our listeners are prospective Novices.

Why not read June AR and respond to Marshall's survey, help him and the slow Morse service volunteers to help you.

## DETAILS OF CLUBS AFFILIATED WITH THE NSW DIVISION

**LIVERPOOL ADARC**

PO Box 690, Liverpool, NSW 2170.

Net: Mondays as 12.30 UTC on Channel 6550, 2m using VK2AZD.

Meetings: 2nd Tuesday of each month at 7.30 p.m. at the primary school, Bligge Street, Liverpool.

Classes: Novice and AOCF.

President: Jim VK2CEE. Vice-President: Bob VK2BYF. Secretary: Bruce VK2VRG. Others: Peter VK2YPU, Carl VK2YSX, Dave VK2DPJ.

Magazine: Bullsheat, published monthly. Editor: Bruce VK2VRG.

Field Day: Sunday, April 24, at Fairfield Showground (1983).

**WAGGA ARC**

PO Box 71, Koorlingal, NSW 2650.

Net: Saturdays at 0200 UTC on 28.490 MHz.

Meetings: Last Friday of each month at 8 p.m. at the Wagga Rescue Club, Bolton Street, Wagga.

Classes: NAOCP, between May and November.

President: Jeff VK2KBK. Vice-President: Alan VK2KAW. Secretary: Russ VK2AZR. Others: Bob VK2DJQ, Barry VK2VDU, Neil VK2YWR/VTD, Peter VK2DUS.

Magazine: QRM, 10 issues per year. Editor: Rex VK2YA.

Repeater: VK2RWG, channel 6750.

Field Day: Hosts SWARS Convention, October 2/3, 1982.

**SHOALHAVEN ARC**

PO Box 621, Nowra, NSW 2541.

Meetings: 1st and 3rd Friday of each month at 7.30 p.m. at the corner of Coomea and Birrilley Streets, Bomaderry.

President: Bill VK2BUY. Secretary: Jim VK2AJT. Others: Stan VK2BRZ, Reg VK2EMI, Harry VK2EGH.

Repeater: VK2RSD, channel 7200.

**SWARS CONVENTION**

The 30th annual convention of the South-West Amateur Radio Society will be held at Wagga on the 2nd and 3rd of October (the long weekend). The venue is at Borambola Park, 17 km east of Wagga on the Sturt Highway.

**ACCOMMODATION:**

On site dormitory type with some twin rooms available, supply own sheets, pillow slips, towels or sleeping bags. There is an enclosed play area for toddlers and the Department of Sport and Recreation will run supervised programmes for children. Tennis courts, swimming pool and parking for caravans are available.

**ACCOMMODATION FEE** (Including caravans):

Adults \$35.00, children under 16 \$25.00. Note: This is for the complete weekend, including all meals from Saturday morning to Monday morning inclusive.

**REGISTRATION FEE:**

\$7.00 per family for weekend or \$4.00 per day.

**CATERING:**

Persons requiring casual meals can arrange on site. Persons attending the Gala Satur-

day Dinner ONLY, \$10.00.

**ENTERTAINMENT:**

A bus tour of Wagga, Gala Saturday night Dinner, raffles, trading table, trade displays, treasure hunts for children.

**CONTESTS:**

Mobile, hidden transmitters on 2 and 10m, scrambles, pedestrian, blindfold, talk-in, quizzes and Morse speeds are all offered.

The convention is being organised by the Wagga Amateur Radio Club and they can be contacted at PO Box 71, Koorlingal, NSW 2650, for full details.

**COMING EVENTS**

**CLOSE OF AGENDA FOR 7th CONFERENCE OF CLUBS:**

September 17th.

**SWARS CONVENTION AT WAGGA:**

October 2nd/3rd.

**JAMBOREE-ON-THE-AIR:**

October 16th/17th.

**7th CONFERENCE OF CLUBS AT TERALBA:**

October 31st.

**HOME-BREW COMPETITION ENTRIES DUE:**

November 30th.

NSW members and clubs are invited to submit news for inclusion in this column to PO Box 1066, Parramatta, NSW 2150. Items for November AR must reach us by the 24th of September.

Athol VK2BAD. ■

**MAGAZINE REVIEW**

Roy Hartkopf VK3AOH  
34 Toolangi Road, Alphington 3078

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

**CO April 1982**

Special Antenna Issue (G).

**CO May 1982**

AR in the USSR (G). World Countries List (G).

**HAM RADIO March 1982**

Active Mixers (TG). Wave Analysis (G).

**HAM RADIO April 1982**

Active Mixers (P). Inductance Meter (C).

**HAM RADIO May 1982**

Fresnel Zone Plate (C).

**CQ-TV No. 118**

Digitising Video (P).

**73 MAGAZINE August 1982**

Tibetan Journey (G). 60 MHz Spec. Analyser (C). Squelch for SSB (C).

**QST March 1982**

Alaskan Adventure (G). TVI (P).

**OST April 1982**

300 Ohm Ribbon J. Antenna (C). 6 Metre Xmitter (C).

**QST May 1982**

Inductance and Capacity Measurement (C). Crystal Ladder Filters (P).

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# Historic BY1PK Visit

Kerry Adams VK2BXT (ex VK5SU of VHF lame) recently visited China and was the first Australian amateur to meet the officials of the amateur radio station BY1PK. The meeting lasted 2½ hours on 21st May 1982 at Kerry's Peking Hotel and everything said was translated. Here are some excerpts from Kerry's letter which was dated 6.7.82.

You will appreciate that the meeting was somewhat of an historic nature and of course I was treading very carefully at first until we all relaxed! The three officials took notes from the beginning of the meeting, but I only did this as time went on. In other words, I was trying to be VERY diplomatic!

Readers should re-read the news item that appeared in "AR" April 1982, page 34. This preface from "Wuxidian", issued by Cheng Ping, Secretary-General of the China Radio Sport Association outlines the Association's aims and ideals and the preparations leading up to the activation recently of BY1PK.

Since the "Cultural Revolution" began in 1966 there has been no amateur radio operation in China. BY1PK commenced operations in March 1982, and has since worked some 30 countries with some 350 QSOs. Many VKs have been worked, e.g. on April 14 contact was made on CW with VK9YC and VK3DEU, both on 28 MHz CW.

BY1PK works only CW at present on 40, 20, 15 and 10 metres. 80 metres is seldom used. Best time on 20 or 15 metres is around 08.30 UTC.

Equipment includes an FT107 presented by the President of JARL, a TH6DX antenna, and a general purpose Chinese made receiver.

The officials had met Japanese, American, Canadian and Swiss amateurs visiting China. I (VK2BXT) was the first Australian amateur to meet them.

Preparations are being made for a National Fox Hunting Competition to be held October 5th to 19th this year. A group of Japanese amateurs is to participate in this competition. All events will be on foot and there will be 5 (five) foxes. Boys enter 5 fox hunts, girls and children 4 fox hunts. Points are awarded. Boys' ages range up to 21, the average age being 18 to 19 years. Some men also enter the competition. All participants have to work to find the fox according to "International Regulations". The next International Competition will be held in Bulgaria (LZ). The last competition was held in Poland (SP).

BY is not a member of the international group as yet, but is planning to go to Yugoslavia this year for a different fox hunt competition. It is anticipated that the winner of the competition in Peking in October will be chosen to go to Yugoslavia

to represent China.

I mentioned VHF but this did not produce any reaction so I can only assume that there is no operation on these bands at present. The use of CW only on the HF bands would seem to tie in with the general aims and ideals expressed in the "Wuxidian" preface, January 1982, etc.

Cheng Ping has contributed spare time articles to "Wuxidian" since the 1950s.

1,800,000 plus copies of "Wuxidian" are distributed all over China and abroad each month!

Tong Xiaoyung, who is the head of BY1PK, is responsible for the station's operations and for the training of the several thousand radio enthusiasts in Peking.

NB: Peking is now known as BEIJING in China.

This was my second trip to China in two years, and the meeting with BY1PK took three days to arrange by my friend, who was afraid I might be thought of as a "spy"! Nothing could be further from the truth. The BY1PK boys laughed and said, "But we are all radio friends" when I asked if they wished our meeting to be reported as laid out above. The photo was at their suggestion. Amateur radio IS universal.

You Are Never too Old!!



If you are interested in Amateur Radio but feel you may be too old to study for a licence take a leaf out of Nelson VK4NGE's log book. Nelson passed the Novice examination in September 1981, when he was seventy-five years young and he is so pleased and proud that he intends to pass the AOCPL licence in the years to come.

REMEMBER  
REMEMBER  
REMEMBER



**AX PREFIX**

Don't forget you can use the prefix AX instead of VK for the period

15th AUGUST 1982  
to

15th OCTOBER 1982 inclusive

to mark the occasion of the Commonwealth Games in Brisbane.



Left to right — Wu Ai-Ping, interpreter and friend of VK2BXT; Wang Sun, Vice-Secretary-General of the China Radio Sport Association; Kerry Adams VK2BXT; Cheng Ping, Secretary-General of the China Radio Sport Association; Tong Xiaoyung, Head of BY1PK.



# VK4 WIA NOTES

K. B. Pounsett VK4QY  
33 Lasseter Street, Kedron, Qld. 4031

## AX4QCG — THE GAMES STATION

Coinciding with the Commonwealth Games, to be held in Brisbane from September 30th to October 8th, will be the operation of a special station representing the Queensland Division of the Wireless Institute of Australia. You will be able to contact AX4QCG on HF and VHF, to commemorate this very important international sporting event.

Negotiations have been under way for some months and finally the Games Authority has given the green light to operate from a Games venue. It will not be, as was first hoped, direct from one of Brisbane's new sporting complexes, but via UHF link for relay on HF and VHF.

Preparation and final siting are still under consideration at the time of writing. VK4WIA will be giving further details on the Sunday morning broadcasts of frequencies, modes and times of operation. Other Divisional stations will be advised of details also. ■

## EDUCATING THE EDUCATORS

Having had access to the pass rates of candidates sitting for both the NAOCP and AOCP examination, and realising the far from brilliant results in relation to the percentage of sitting applicants, the Council of the Queensland Division of the WIA determined that some effort was required to improve the level of pass rate. As in all Divisions, the tutoring is provided by various club members, usually on voluntary and unpaid basis. On the other hand, the students are those who have a strong desire to achieve, though many have not studied for some period of years.

HOW THEN COULD WE ATTEMPT TO IMPROVE THE PASS RATE OF THESE EAGER STUDENTS?

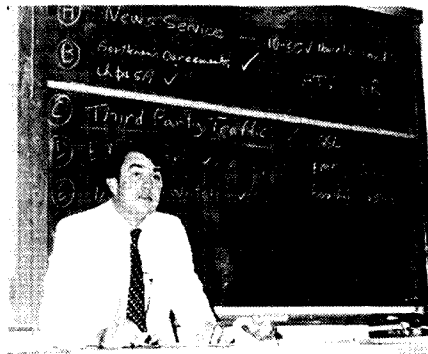
It was decided that we should first "Educate the Educators", that they may not only improve their own knowledge of teaching principles, but also make it easier for their students to gain the necessary knowledge.

We were indeed very lucky to have Ron Smith VK4AGS, a senior science master from Oakey High School, to fall back on for the necessary know-how. Even more important than his wide knowledge of electronics, was Ron's vast experience in the teaching profession.

On July 10th and 11th, a seminar was held at the Toowoomba Education Centre on the Darling Downs. It was assumed that the students attending already possessed the necessary knowledge of electronics, and indeed the great majority were already running classes in their respective clubs. Two very full days were put in by both Ron and his students endeavouring to cover the "state of the art" of teaching. ■

Of course the time available was insufficient, but a great deal of experience and knowledge was passed on and, hopefully, it will reflect in improved pass rates in the near future. It was intended, at this seminar, to cover only the Southern area of the State, and 16 attendees came from Roma, Dalby, Oakey, Toowoomba, Ipswich, Brisbane, Redcliffe and Sunshine Coast. Later this year we hope to run a similar course in Central Queensland to cater for our fellow educators in the Northern half of Queensland.

If prospective attendees from North Queensland could only read the comments of those who attended in Toowoomba, we doubt if we could accommodate those wishing to attend our next "Educating the Educator" seminar.



The Hon. David Jull, MP, Member for Bowman, and Chairman of the Backbench Communications Committee, addressing the 1982 Radio Club Workshop, Griffith University, Brisbane.

Photo courtesy of Bud VK4QY.

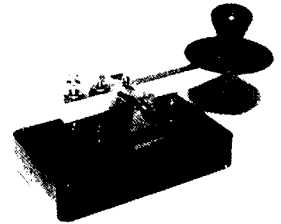
The Wireless Institute of Australia and the Queensland Division in particular, are fortunate in having a friend in the Hon. David Jull, M.P. David has been guest speaker at our annual Radio Club Workshop for several years and this year kindly gave the opening address for the Remembrance Day Contest.

This current session of Federal Parliament is very important to amateurs in Australia, as the new Radio Regulations Bill will be under consideration. Mr. Jull has a vital interest in this Bill and is very aware of our concern in clauses affecting the Amateur Service. The Queensland Council has, through a couple of its members, briefed David on various aspects regarding this important legislation.

The Council and members of the Queensland Division would like to thank David for his co-operation and the friendly way in which he has received our requests, arguments and complaints. ■

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# VHF UHF - an expanding world

Eric Jamieson VK5LP  
1 Quinns Road, Forreston, SA 5233

There have been other openings elsewhere (VK2DDG reported ZL TV on 24/7) that no doubt have been missed by ALL, just going on the above activity. With such strong signals is this the return to Sporadic E generally seen during the lull of sunspot cycles? Seeing that several solar flare ups occurred during July and the Solar count was on the way up at the end of the month, don't give up yet. I doubt very much that we have seen the last of Cycle 21, who knows we may yet get 50 MHz in time to work something!

While on the subject of 6 Metres, no doubt you are all aware of the intended future of Ethnic TV in Australia. By 1985 all capital cities and several larger regional cities will have transmitters carrying programmes on the Channel 0-28 network. Adelaide most probably will see Ethnic NT in late 1983, however here at least several news sources seem to indicate that it will be UHF only. All very nice but that doesn't help anybody in the Sydney or Melbourne areas with the current dual-channel system. Let's hope that that situation changes and that the future ten city and country centres that get Ethnic TV don't turn up on Channel 0. I think it has all been said before.

## 2M AND ABOVE WITH VK5KK

Mid-winter Tropo DX is still around despite cold weather, lack of activity or whatever. On 27/6 there were some mild conditions to the SE from Adelaide. Chris VK5MC was peaking to 57 at 1030 UTC working Des VK5ZO at Mt. Barker on 144.1 MHz. VK5CK worked VK3BHS (Stawell) at 1100 UTC on 144.05 MHz. VK3BHS was only just audible at this QTH. More locally I could hear key clicks from VK5VF beacon (on 144.8 MHz down to 144.2 MHz). Not bad seeing I am 130 km away!!! I do admit, though, this is apparently no news to anyone in Adelaide!

Unfortunately I am presently shifting QTH about 200 metres up the road (about another 12 metres ASI) and half my antennas haven't found their way here yet! On 24/7 VK5s AIM, KEN and KLZ went portable to Black Top Hill (above Elizabeth) with 432 MHz SSB. Experimenting with a yagi type antenna and a helically wound beam, they found the latter antenna to be not as good (to what degree I am not sure) on the 150 mile path to Don VK5ZRG at Whyalla. Probably at that distance, I would think, no polarity changes during fading would be severe enough to be favouring the circular antenna. VK5ZRO suggested that perhaps the wrong thread was in use and the addition of a washer could help! One more item concerning, this time, a new repeater. The Cowell repeater is now in service on Eyre's Peninsula. Channel 6800 (what else . . . Channel 4).

5Z4YV in Kenya, on two successive days, via the long path to the east. QSLs of the quality exhibited by the C5AEH cards are promised.

While on the subject of quotes from QST, Bill W3XO, who conducts the columns for "The World Above 50 MHz", seeks an answer to a problem which has also plagued me for some time. Bill is anxious to update the world 6 metre standings box, also for two metres. His and my problems are in getting the relevant information to be able to show the true state of affairs. Some operators have been good enough to send me details of their stations' QSOs, but I know of several Australian operators who have worked countries in excess of those already on hand, but it is near impossible to get the required information. Bill has the same problem. I would like to help Bill and no doubt he would like to help me. If you have a reasonable score of confirmed countries on 6 metres will you send a list showing the call sign and country of the stations worked, date and time worked, signal reports, QSL information, any other relevant details. In this way we may be able to start the Australian Box on 6 metres and, in so doing, provide some copy for Bill, as I am sure there are some VK operators with tallies quite a bit above some of the W stations!

## 6 METRES WITH VK5KK

Once again this month there have been quite a few Sporadic E openings between VK2-4, VK3-4 and VK5-2, 4, 6. On 11/7/82 from 0330 UTC to 0445 UTC open from Northern VK4 to VK2 and VK5. Signals into VK5, at least, were 59. For three days (20th, 21st and 22nd) the band was open to Brisbane in the afternoon although very little amateur activity (just good Channel 0 reception!!!). Also other sound frequency offsets audible at different times. Bob VK5ZRO reported that on 21/7 Channel 0 Brisbane was almost snow-free at 1000 UTC. On 24/7 band open from 0304 UTC to 0400 UTC to northern VK2 from VK5. VK2DDG worked VK5NZ, VK5ZDR and VK5ZRO for half an hour at 59++ signals. Gerry V5AGM copied the Gunnedah 6 metre beacon on and off during the same day till 1330 UTC! Similarly Don VK5ZRG watched Channel 0 till midnight local time! With all that something had to be brewing for next day. On 25/7 from 0221 UTC till 0315 UTC the band opened between VK5 and VK6. Bob VK5ZRO worked VK6s, RO, ZWH, VP, ZPG, HK and WD. Other VK5s working included VK5NZ, RO, AGM, ZDR and ZMJ. Most signals were at least 55. VK4RO worked VK6RO on 28 MHz but I do not know whether they made it on 52 MHz.

## AMATEUR BANDS BEACONS

| Freq.   | Call Sign | Location         |
|---------|-----------|------------------|
| 50.005  | H44HIR    | Honiara          |
| 50.008  | JA2IGY    | Mie              |
| 50.098  | KH6EQI    | Pearl Harbour    |
| 51.022  | ZL1UHF    | Auckland         |
| 52.013  | P29SIX    | New Guinea       |
| 52.150  | VK5KK     | Arthurton        |
| 52.160  | VK0WW     | Macquarie Island |
| 52.200  | VK8VF     | Darwin           |
| 52.250  | ZL2VHP    | Palmerston North |
| 52.300  | VK6RTV    | Perth            |
| 52.320  | VK6RTT    | Carnarvon        |
| 52.330  | VK3RGG    | Geelong *        |
| 52.350  | VK6RTU    | Kalgoorlie       |
| 52.370  | VK7RST    | Hobart           |
| 52.400  | VK7RNT    | Launceston       |
| 52.420  | VK2WI     | Sydney           |
| 52.425  | VK2RGB    | Gunnedah         |
| 52.435  | VK3RMV    | Hamilton         |
| 52.440  | VK4RTL    | Townsville       |
| 52.510  | ZL2MHF    | Mt. Climie       |
| 53.000  | VK5VF     | Mount Lofty      |
| 144.400 | VK4RTT    | Mt. Mowbullian   |
| 144.420 | VK2WI     | Sydney           |
| 144.430 | VK3RTG    | Temporary site † |
| 144.475 | VK1RTA    | Canberra         |
| 144.480 | VK8VF     | Darwin **        |
| 144.550 | VK5RSE    | Mt. Gambier      |
| 144.600 | VK6RTT    | Carnarvon        |
| 144.800 | VK5VF     | Mt. Lofty        |
| 144.900 | VK7RTX    | Ulverstone       |
| 145.000 | VK6RTV    | Perth            |
| 147.400 | VK2RCW    | Sydney           |
| 432.410 | VK6RTT    | Carnarvon        |
| 432.440 | VK4RBB    | Brisbane         |
| 432.450 | VK3RMB    | Mt. Bunningyong  |

\* Indicates the beacon is again operational.

† Indicates the beacon is again operational but from a temporary site whilst a permanent site is found.

\*\* First time listing. The beacon operates continuously with 8 watts output.

## SIX METRES

From QST July 1982 comes some details of the DXpedition of Jim W6JKV from various areas in the South Pacific. Between 2nd and 5th April Jim operated as 3D2JT from Fiji, where he completed a total of 625 QSOs to 20 countries on four continents. Worked were 73 W6s, 19 W7s and 20 W5s. In addition, 443 contacts with Japanese stations were logged. From A35JT, where he held forth from 8th to 14th April, the box score was equally impressive. From that QTH 880 QSOs were made to 23 countries on five continents. W6s accounted for 193 exchanges, 86 W5s, 59 W7s and 4 W4s. Again, the JAs were very much in evidence, producing 469 of Jim's Tongan contacts. The highlight of that operation for him was contacting



Mark VK5AVQ writes that the 438.525 MHz repeater will soon be issued a licence, but at this stage the exact location is yet to be finalised. Also, at the recent Mt. Gambier Convention, it would seem that the VK5AVQ/VK5CK team took out the trophy for VK5; a good time was had by all who went this year. Mark was disappointed not to see Eric VK5LP, especially around the time of judging the home-brew contest! He hopes to have 2 x 14 element antennas installed on 432 MHz soon.

That's it for this month, news is a little bit scarce but that probably is more a reflection on the amount of activity in my shack. Maybe when all my antennas are up again (got to get them up before Eric returns or else) things will improve. I have been in regular contact with Eric and no doubt he will fill in on his adventures.

73. David VK5KK.

### BACK TO ERIC AND TWO METRES TO JAPAN

Steve VK4ZSH has written with details of his special DXpedition through northern Queensland and the Northern Territory. (Refer August column.) He adds a note to the effect that the Queensland openings were all nearly perfectly north-south paths, within  $\frac{1}{2}^\circ$ , but this situation was deliberate, as due to a shortage of time he chose the paths to be that way. Equipment used on 2 metres was an IC 251 with a KLM70 amplifier giving 60 watts output, 1 dB feedline to a 10 element yagi up 4.5 metres, powered by dual 68 AH batteries under the bonnet, so as to allow for light and fast travel when needed. The events cost \$1,400 for 3,200 litres of petrol to take Steve 22,000 km (equal to more than half-way around the world). He ran out of petrol once, got wet bogged once, hung-up on the diff. once, flattened the batteries once, bent the exhaust system, ripped a hole in the bottom of the car, lost one windscreen, one spotlight, three tyres, had an unforgettable encounter with a road-train, discovered one (possibly unforecast) meteor shower, numerous failures, break-ages and losses, all minor to the car. OTHER THAN THAT THE TRIP WAS UN-EVENTFUL!

Steve found the greatest help was the Japanese "Pocket Bell" service signals, from JA2DDM. These service signals are radiated with 250 watts of power to vertical antennae, from 100m towers, located on hills and mountains near various cities which are listed by numbers. They give 360° coverage and continuous operation. They are to be found with 10 kHz spacings between 142.120 to 142.300 MHz and 146.760 to 146.850 MHz. These paging signals were always the first and last signals during an opening probably because of their good take off and considerable power, as most JA amateurs only run 10 watts. The paging signals are very easy to pick from local signals because of their deep, rapid flutter, fading and heavy doppler warble which gives an eerie, ghost-like sound.

The following is an outline of Steve's contacts, and all credit to him for making the effort. 12/4/82: QTH Darwin 1215-1420

UTC, 34 JA6, 8 JA4, 1 JA3. 14/4: Roper River Bar, 450 km SE of Darwin, 1100-1342 UTC, 6 JA5, 2 JA4, 10 JA3, 1 JA2, 1 JA0, first JA2, JF2BJO, first ever JA0, JA0ZUN (Club Station). 17/4: Same location, 1116-1304 UTC, 5 JA2. 18/4: Same location, 1033-1341 UTC, 1 JA3, 9 JA2. 19/4: Borrooloola, 700 km SE of Darwin, 1043-1115 UTC, paging only 146.770, 146.780, 146.790, 146.800, 146.810, 146.820 MHz.

Shifting now to Queensland, on 27/4 from McKinlay, 100 km SE of Cloncurry, 1040 to 1115 UTC, paging only 146.760, 146.780, 146.810 MHz. 4/5: At Karumba, 500 km west of Cairns, 1032-1107 UTC, 4 JA1. JA1RJU Kazu, first VK4 to JA and first JA1 to VK QSO. 6/5: QTH near Bang Bang, 110 km south of Karumba, 1034-1125 UTC, 18 JA1, 1 JA9 (portable JA1). 7/5: Near Dougall, 250 km south of Karumba, 1047-1057 UTC, 1 JA7, 2 JA1. JA7OXL, Iwanuma City, first ever JA7 to VK — distance 6,430 km. 8/5: Cloncurry, 100 km east of Mt. Isa, 1007-1047 UTC, 4 JA7, 16 JA1. JA7GB, Koriyama City, 6,440 km. JH7OGY, Iwanuma City, 6,530 km. This latter contact needs official confirmation, but looks like a new VK 144 MHz distance record being over 6,500 km.

Congratulations to Steve for a fine effort. He is well deserving of that record, and I have a feeling that this may not be the last time we hear of such exploits from Steve.

Apparently accompanying Steve on this epic journey was Al VK4KAZ, who had contacts as follows: 12/4/82: Darwin, 1215-1335 UTC, 4 JA6, 4 JA4, 2 JA3. 14/2: Roper River Bar, 1123-1339 UTC, 9 JA5, 2 JA4, 1 JA2, 1 JA0. 17/4: Roper River Bar, 1116-1259 UTC, 4 JA2. 18/4: Roper River Bar, 1025-1320 UTC, 1 JA3, 14 JA2. In addition, Al did some operating on 52 MHz as follows: 3/4: Mt. Isa, 48 JAs. 4/4: Tennant Creek, 82 JA. 11/4: Darwin, 25 JA. 13/4: Katherine, 43 JA. 14/4: Roper River Bar, 22 JA. 15/4: Borrooloola, 32 JA. 16/4: Borrooloola, 84 JA. 18/4: Roper River Bar, 39 JA. 21/4: Karumba, 22 JA.

Collectively, it looks as though the two boys had a fairly busy time, using the daytime to keep moving or making repairs, and operating to JA at night. Still, that would keep them out of mischief!

### ARRL EME CONTEST

Chris VK5MC has sent some details of operating during the contest over the weekend of 1st and 2nd May, when conditions were quite good compared to the April weekend which was upset by auroral disturbances and storms in the northern hemisphere.

Stations QSO'd by VK5MC, who was using a 20 foot dish antenna on 432 MHz, were W6ABN, OK3CTP, JA9BOH, ZS6NG and VK3BKF. On 1296 MHz QSOs were made with ZS5JJ and VE7BBG.

Les VK3BKF had QSOs with W9AB, JA9BOH, YU1AW, ZS5JJ and VK5MC. Les is using an antenna system of 4 loop yagis on 432 MHz which are erected in the back yard whenever he uses his EME system.

The contact between VK3BKF and VK5MC is the first VK to VK 432 MHz EME contact. Some interesting propagation

effects are being noticed on tests between the two stations. During the contact many other stations were heard by both stations and QRM was quite severe during the European window!

The good news from Lyle VK2ALU is that the Dapto 30 foot dish has been mounted at a new location and he expects to be operational on 1296 MHz in a few months.

### SNIPPETS

The "Special Event" call sign prefix of AX may be used by Australian amateurs between 15th August, 1982, and 15th October, 1982, in lieu of VK during the period of the Commonwealth Games.

Don't forget, satellite enthusiasts, Wednesdays are "off-days" for all satellite operation, as during this period the batteries are given a rest and various commands are executed.

My "Around Australia" trip continues and I write my portion of these notes from the Kakadu National Park in the Northern Territory. I know there will be attendant postal problems from such an isolated area so the editor will probably be most annoyed! However, I was very pleased to finally catch up with Graham VK8GB in Darwin with only an hour or two to spare before he sped off to Alice Springs by plane. However, it was a long enough meeting over a good meal to discuss various aspects of VHF operating, propagation, etc. And of course a look at the mouth-watering QSL cards from about 35 countries on 6 metres and a drawer full for 144 MHz contacts with Japanese stations. At present he finds little incentive to work on 70 cm, but perhaps he may find a path exists between Darwin and John VK6GU at Wyndham. Certainly such a path should exist on 144 MHz.

There is little other activity on VHF in the north-west of WA or the NT. Skeds have been maintained twice a week on Wednesday and Sunday nights with David VK5KK on 7 MHz, this being the band giving the best results for the time of day and time of year. 3.5 MHz is difficult because of the great distances and the antenna system at my end, only a mobile whip. 20 metres has very little to offer at 1130 UTC, so we have settled for a position somewhere between all the Asian stations and general rubbish and commercials, mostly between 7.110 and 7.120 MHz. Signals have been variable, but on quite a few occasions VK5KK has been 5 x 9 here and my signal at the other end up to 5 x 7 from the FT7B. So we do make it!

That's all the news that can be mustered at this distance, my mail is still being forwarded from home, so I am getting the letters you have continued to send, and the information contained therein is being used.

Closing with the thought for the month: "The rain it raineth on the just And also on the unjust fella, But chiefly on the just because The unjust steals the just's umbrella."

— Charles Bowen.

73. The Voice in the Hills. ■



# CONTESTS

Reg Dwyer VK1BR  
Federal Contest Manager  
PO 236, Jamison, ACT 2614

## CONTEST CALENDAR

### September

- 5 BULGARIAN CW
- 11-12 EUROPEAN PHONE
- 11-12 G. QRP DAY
- 18-19 VK NOVICE CONTEST (CONTEST CHAMP QUALIFIER)
- 18-19 SCANDINAVIAN CW
- 25-26 SCANDINAVIAN PHONE
- 25-26 DELTA QSO PARTY

### October

- 2-3 VK/ZL OCEANIA PHONE
- 9-10 VK/ZL OCEANIA CW
- 10 RSGB 21/28 MHZ PHONE
- 16-17 JAMBOREE-ON-THE-AIR
- 16-17 ARCI QRP CW
- 17 RSGB 21 MHZ CW
- 20-21 YLRL ANNIVERSARY CW
- 30-31 CQ WW DX PHONE

### November

- 3-4 YLRL ANNIVERSARY PHONE
- 13-14 EUROPEAN RTTY
- 13 ALARA YL PHONE/CW
- 27-28 CQ WW DX CW

## THE 24th SCANDINAVIAN ACTIVITY CONTEST 1982

### CW:

September 18th, 1500 UTC, to September 19th, 1800 UTC.

### PHONE:

September 25th, 1500 UTC, to September 26th, 1800 UTC.

### LOGS TO:

EDR Contest Manager, Leif Ottosen OZ1LO, Bankevejen 12, Kong. DK-4750 Lundby, Denmark.

## GENERAL RULES

### OBJECT:

Stations will try to work as many Scandinavian stations as possible.

Scandinavian stations are defined by the prefixes as follows: LA/LB/LG/LJ (Norway), JW (Svalbard and Bear Is.), JX (Jan Mayen), OF/OG/OH/OI (Finland), OH0 (Aland Is.), OJ0 (Market Reef), OX (Greenland), OY (Faroe Is.), OZ (Denmark), SJ/SK/SL/SM (Sweden) and TF (Iceland).

### CONTEST CALL:

CQ SAC on CW and CQ Sscandinavia on Phone.

### BANDS:

3.5-7-14-21-28 MHz may be used, but only within the following sub-bands (MHz). CW: 3.505-3.575, 7.005-7.040, 14.010-14.075, 21.010-21.120, 28.010-28.125. Phone: 3.600-3.650, 3.700-3.790, 7.050-7.100, 14.150-14.300, 21.200-21.350, 28.400-28.700. Region 2 and 3 stations may also transmit on their frequencies above 3.790 and 7.100.

## CATEGORIES:

- (a) Single Op./Single TX — all band only: Single Operator: One person performs all operating, logging and spotting functions. The use of multiplier spotting assistance or any other form of alerting assistance is not allowed in this category.
- (b) Multi-Op./Single TX — all band only: Only one signal allowed at any one time on any band. The station must remain on the band for at least 10 minutes following initial transmission on that band after band change.
- (c) Multi-Op./Multi-TX: No limit to transmitters, but only one signal per band allowed. Club stations may work only Multi/Single or Multi/Multi.

## CONTEST EXCHANGE:

Consists of RS(T) plus serial number, starting from 001, e.g. 59(9)001. QSOs after 999 are numbered 1000, 1001, etc. Multi-Op./Multi-TX stations use separate serial numbers, starting from 001 on each band. The same station may be worked once on each band. Only CW-CW and Phone-Phone QSOs are valid.

## QSO POINTS:

Two-way QSO with sent and received exchange counts for QSO points.

Non-European stations (DX): Credit logs with one (1) point for every complete Scandinavian QSO on 14, 21 and 28 MHz and three (3) points for such contacts on 3.5 and 7 MHz.

## MULTIPLIERS:

Two-way QSO is valid for multiplier credit, if complete contest exchange is sent and at least RS(T) is received.

Worked Scandinavian call areas may be claimed for multiplier credit (LA1 = LB1 = LJ1 and SM3 = SK3 = SL3, etc.). Portable stations without district number count for the 10th call area, e.g. W4XXX/OZ counts for OZ0 and G3XYZ/LA counts for LA0. OH0 and OJ0 are separate call areas. SJ9 counts for the 9th call area in Sweden. Each multiplier shall not be credited more than once per band. If serial number is not received, QSO counts for zero (0) points.

## SCORING:

Multiply all QSO points by the sum of all multipliers worked on each band.

## LOG INSTRUCTIONS:

Signed original logs (or copies of original logs) must be submitted separately for CW and PHONE. Logs to be filled out in the following order: date and time (UTC), station worked, sent and received exchange, band, multipliers (e.g. OZ4, SM3, OH0, etc.) and points.

## SUMMARY SHEET:

All entrants must submit a summary sheet showing station call sign, category, name of operator(s) and address. Indicate number of QSOs per band less duplicates, number of duplicates per band, number of multipliers per band, QSO points per band and final score.

## MULTIPLIER SHEET:

All entrants must submit a multiplier sheet for each band with more than 200 QSOs.

## DUPLICATE QSO SHEET:

Possible duplicate QSOs must be shown in the log and counted for zero (0) points. Each entrant shall submit a duplicate QSO sheet for each band with more than 200 QSOs. Duplicate sheet to contain worked stations listed, e.g. by DXCC countries and call areas.

## DEADLINE

Logs and accompanying sheets, addressed to the organising League, shall be mailed no later than October 30th of the year of the Contest.

## CERTIFICATES AND PLAQUES:

Top scorer in each country as well as in each US call district, in each category both on CW and PHONE, will receive a Contest Award, provided a reasonable score is made. Depending on the number of entrants from each country, the award of additional certificates will be considered by the Contest Committee.

Top scoring single operator stations on each continent will receive a Contest Plaque, both on CW and PHONE, provided a reasonable score is made.

## EUROPEAN DX CONTEST

### CONTEST PERIODS:

PHONE: 11th/12th September, 1982.

RTTY: 13th/14th November, 1982.

BANDS: 3.5, 7, 14, 21, 28 MHz.

CLASSIFICATIONS: Single Operator-all band; Multi-Operator-Single transmitter.

Multi-operator/Single transmitter-stations are only allowed to change band one time within a period of 15 minutes. A quick band change and return for working new multipliers is allowed.

REST PERIOD: Only 36 hours of operation out of the 48 hours are permitted for single operator stations. The 12 hours of non-operation may be taken in one, but no more than three periods at any time during the contest and have to be marked in the log.

EXCHANGE: A contest QSO can only be established between a non-European and a European station. Exchange the usual five or six digit serial number RTS/RS report plus a progressive QSO number starting with 001. W/K stations in addition give their state (e.g. 599011 MA).

**POINTS:** Each QSO counts 1 point. A station may be worked once per band. Each confirmed QTC — given or received — counts 1 point (see below).

**MULTIPLIERS:** The multiplier for non-European stations is determined by the number of European countries worked on each band. Each call area in the following countries will be considered a multiplier: JA, PY, VE, VO, VK, ZL, ZS, UA90. (See special regulations for RTTY.) Each W/K state will be considered a multiplier.

The multiplier on 3.5 MHz may be multiplied by four.

The multiplier on 7 MHz may be multiplied by three.

The multiplier on 14/21/28 MHz may be multiplied by two.

**SCORING:** The final score is the total QSO points plus QTC points multiplied by the sum total multipliers from all bands.

**QTC TRAFFIC:** Additional point credit can be realised by making use of the QTC traffic feature. A QTC is a report of a confirmed QSO that has taken place earlier in the contest and later sent back to a European station. It can only be sent from a non-European station to a European station. The general idea being that, after a number of European stations have been worked, a list of these stations can be reported back during a QSO with another station. An additional 1 point credit can be claimed for each station reported (Note special regulation for RTTY.)

- A QTC contains the time, call and QSO number of the station being reported, i.e. 1300/DA1AA/134. This means that at 1300 UTC you worked DA1AA and received number 134.
- A QSO can be reported only once and not back to the originating station.
- Only a maximum of 10 QTCs to a station is permitted. You may work the same station several times to complete this quota. Only the original contact, however, has QSO point value.
- Keep a uniform list of QTCs sent. QTC 3/7 indicates that this is the 3rd series of QTCs sent and that 7 QSOs are reported.

**LOGS:** It is suggested to use the log sheet of the DARC or equivalent. Send large size SASE to get the wanted number of log and summary sheets (40 QSOs or QTCs per sheet). Use a separate sheet for each band. All entrants are required to submit cross check (dupe) sheets for each band on which they worked more than 200 QSOs. For each duplicate contact that is removed from a log by the checker a penalty of three additional contacts will be crossed out.

**SPECIAL REGULATIONS FOR RTTY:** In the RTTY Section of the EUROPEAN DX CONTEST also contacts between all continents and also one's own continent are permitted. Multipliers will be counted according to the EUROPEAN and ARRL countries list. Contacts within the same continent count a multiplier of one per band (including 80 and 40m). QSO as well as QTC traffic with

one's own country (district) is NOT allowed. SWLs apply to the rules accordingly.

**DEADLINE:** Phone: October 15th; RTTY: December 15th.

**EUROPEAN COUNTRY LIST:**

C31, CT1, CT2, DL, EA, EA6, EI, F, FC, G, GD, GI, GJ, GM, GM Shetland, GU, GW, HA, HB9, HB0, HV, I, IS, IT, JW Bear, JW, JX, LA, LX, LZ, M1, OE, OH, OH0, OJ0, OK, ON, OY, OZ, PA, SM, SP, SV, SV Crete, SV Rhodes, SV Athos, TA1, TF, UA1346, UA2, UA Franz Josef Land, UB5, UC2, UN1, UO5, UP2, UQ2, UR2, Y2, YO, YU, ZA, ZB2, 1A0, 3A, 4U1, 9H1.

**MAILING ADDRESS**

**WAEDC Committee**  
Post Box 1328  
D-895 Kaufbeuren  
GERMANY

**VK NOVICE CONTEST**

This contest was originally the Westlakes Radio Club Contest, usually held in September, and is designed to encourage Novices to gain skills in contest operation and to improve their abilities with possible thought to assisting in their upgrading to full call licences. This contest provides excellent opportunities for all Novices to compete on an even footing with all-comers. The majority of points scored are contacts with Novice and club stations and minor points are scored with contacts with full call licences.

The contest will take place from 0800 UTC 18th September to 0759 UTC 19th September, 1982, for all Novice and full call amateurs.

**OBJECTS OF THE CONTEST**

To encourage contest working between amateur stations in Australia, New Zealand and Papua-New Guinea during a 24-hour period with special emphasis on contacts with Novice and radio club stations.

**STATIONS ELIGIBLE**

Only stations in VK, ZL and P2 call areas may enter. No stations outside these areas is permitted to be worked or entered in a log. Except for radio clubs, no multi-operation working is allowed. Stations in your own call area as well as other call areas may be worked.

**CONTEST BANDS**

Only the Novice allocations on 80, 15 and 10 metres may be used. This applies to full call stations as well. No crossband operation is allowed. Contacts should be Phone or CW.

**CW**

CW operation: Maximum speed 10 words per minute.

To encourage the use of CW for the betterment of both Novice and those operators who are not as proficient as maybe they should be, the maximum transmitting speed of CW will be limited to 10 words per minute.

**SCORING**

**Transmitting:**

For contacts with a Novice station— 5 points.

For contacts with a radio club station — 10 points.

For contacts with a full station — 2 points. **Listening:**

Novice/Novice contact — 5 points.

Full Call/Novice — 2 points.

Novice/Full Call — 2 points.

Full Call/Full Call — 2 points.

Any contact with a radio club — 10 points.

**CALLING PROCEDURE**

Phone call "Call Novice Contest" and on CW "CQN".

Stations may be worked only once per mode per band.

**EXCHANGES**

Phone RS report plus three figures. These three figures may start anywhere between 001 and 999 but when 999 is reached you must start again at 001. CW, RST report plus three figures on the previous basis. Radio club stations will add the letter "C" after the number above.

**CONTEST SECTIONS**

(a) Novice/Full Call Phone.

(b) Novice/Full Call CW.

(c) Listeners.

**LOGS**

Logs must show UTC time, station worked, band, mode, number sent, number received, score claimed and score tally for each page.

A front sheet must be attached showing the following:—

Name of operator, call sign, address, section entered and points claimed.

Logs are to be sent to the Federal Contest Manager, Box 236, Jamison, ACT 2614, and must be post-marked no later than 12th October, 1982, and received no later than 29th October, 1982.

**CERTIFICATES**

Certificates will be awarded to the highest score from Novice Phone, Novice CW, Radio Club Phone, Radio Club CW, Full Call Phone, Full Call CW, Listener Phone and Listener CW.

A trophy to be known as "The Keith Howard VK2AKX Trophy" will be awarded to the entrant with the highest aggregate scores in the (a) and (b) sections and will be held by the winner for a period of 12 months.

The decision of the Federal Contest Manager is final and no correspondence will be entered into. ■



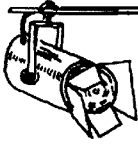
**QSP**

**RTTY**

According to a RTTY broadcast recently from EMDRC sources there appear to be about 170 operators in VK3 possessing RTTY capability. About one-third are on VHF only and about one-fifth or a little less also possess ASCII capability. There could be around 200 RTTY stations in VK3 in grand total as some stations are missing from a list which has been sighted. ■

**AMATEUR RADIO IN INDIA**

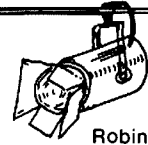
Reading one of the overseas magazines some interesting items caught the eye. "Those who obtained licences from the old Post and Telegraph Department may remember the stern examiner with his Morse code tape receiver and the foot rule with which he used to measure the dots, dashes and spaces." And another quote. "The Indian Telegraph Act, 1885, together with the various Rules framed under it, is the legal framework for the regulation of radio spectrum usages". ■



# SPOTLIGHT

## ON

## SWLing



Robin L. Harwood VK7RH  
5 Helen Street, Launceston, Tas. 7250

### TROPICAL BROADCASTING

Over the winter months, many SWLs and DXers have mainly been concentrating on listening to stations on what is commonly referred to as the Tropical Broadcasting Bands. These are the frequencies allocated for broadcasters who are located in tropical areas who find that medium wave fails to propagate well over a large area, especially during daylight hours. Hence, these frequencies are used so that they can cover a wider area and audiences than would be possible on MW.

Here in Australia, many stations in Central and South America, S-E Asia, and Africa can be heard at different times, usually at sunrise/sunset at either the transmitting or receiving location, with the exception of S-E Asia, who are heard only at night time.

Serious DXers throughout the world consider these stations quite a challenge, because of their relatively low power and positive identification is very difficult due to the use of local languages and dialects in their programming. Most Latin stations employ either Spanish or Portuguese exclusively, so the reports must be submitted in the language being broadcast.

### REPORT GUIDES

You will find it almost indispensable to have a Report Guide to assist you with the compilation of foreign language reports. The best I have found so far is the EDXC Report Guide, which shows how reports are written in the main European languages. This can be obtained for \$3 from the Stationery Secretary, Australian Radio DX Club, PO Box 300, Blackburn, Victoria 3130. This is open to members of that organisation. Radio Netherlands has compiled an excellent Report Guide for Indonesian stations. This is obtainable from Media Network, Radio Netherlands, PO Box 1200, JG Hilversum, The Netherlands. I believe that ARDXC also do some Report Guides of their own which are more extensive than the EDXC Guide.

However, the main problem encountered is that these stations have a small staff which is unable to handle or process large amounts of reports. They are mainly concerned with the production of programming for people within their own region and not for listeners in other countries. Where no external service facilities exist, these regional or local broadcasters, being often the only shortwave outlet from that nation, are deluged with reports. Hence, some station managers find DXers' reports are a nuisance.

Despite these setbacks, however, the tropical bands retain their interest, certainly being a challenge. As mentioned

previously, winter time appears to be the best time in SE Australia to listen for these outlets. The prevalence of continuous atmospheric static (QRN) in summer precludes any serious DXing on the lower bands, and many concentrate on higher frequencies at that time anyway.

Another hassle is that these frequencies are also utilised by utility stations on RTTY or CW in non-tropical regions. These do make it very difficult to pull out a rare station in Brazil or Africa. So it is imperative that a good bandwidth filter or Q-Multiplier is added to the receiver to improve selectivity and sensitivity of the tuned circuit. Details of suitable Q-Multipliers can usually be found in ARRL Handbooks, particularly earlier editions.

After picking up one of these stations, the next step for some is getting that QSL card. The WRTH usually does contain current addresses and operational times. Yet there is one publication that is very useful. Called the Tropical Bands Survey, it is published by the Danish Shortwave Club International and is compiled by Anker Petersen, a well known expert on tropical bands DXing. This 28 page offset booklet lists all active broadcasting stations between 2.000 and 5.900 MHz, together with their power and operational hours. The cost is 9 IRCs surface or 11 IRCs for airmail. Usually the Australian Radio DX Club does get in a bulk order and I am sure that they will be getting copies very soon. Write to ARDXC, PO Box 227, Box Hill, Victoria 3128, and enquire.

Incidentally, this Club does specialise in DX from tropical areas and in its July ADXN, Peter Bunn has compiled a current listing of African and Latin stations from listeners' logs submitted to the SW Trail of that publication. Mr. Bunn does have frequent updates on activity within that section from listeners in Australia as well as overseas monitors. The latest subscription price can also be obtained from the above address.

### TROPICAL BAND STATIONS

Here are just a few stations you can expect to hear on the Tropical Bands, together with their times and frequencies. I have mainly concentrated on stations that are well known and comparatively easy to get.

- 2.340 MHz Fujian People's Broadcasting Station, PRC. 1300 UTC.
- 3.015 R. Pyongyang, North Korea. FS in Japanese. 1230 UTC.
- 3.031.5 Wonsan Provincial Station, North Korea. 1300 UTC.
- 3.204 RRI Bandung, Indonesia. 1100 UTC.
- 3.265 RRI Gorotalo, Indonesia. 1130 UTC.

- 3.355 R. Noumea, New Caledonia. 0800 UTC. Also 7.170 MHz.
- 3.400 Fujian Front Station, PRC. 1030 UTC onwards.
- 3.560 R. Pyongyang Foreign Service. 1100 UTC.
- 3.779 R. Teheran, Iran. 1930 UTC.
- 3.910 AFRTS Far East Network, Tokyo, Japan. 1000 UTC.
- 3.925 Nat. Bro. Comm., Port Moresby, Papua-Nuigini. 0900 UTC.
- 4.719 RRI Ujung Padang, Indonesia. Easy to hear 1000 UTC.
- 4.920 VLM4 Brisbane, Qld., ABC 3rd Network. 0730 UTC onwards.
- 5.020 Solomon Islands Broadcasting Service, Honiara. 0930 UTC.
- 5.030 R. Reloj Continente, Caracas, Venezuela. Best between 0930 and 1030 UTC.
- 5.095 R. Sutatenza, Bogota, Colombia. 0930 UTC. Check also 5.075. MHz.
- 5.170 Fujian Front Station, PRC. Same as 3.400 and 7.025 MHz.
- 5.950 La Voz dell Nicaragua, Managua. 0500 UTC.
- 6.060 R. Nacional, Buenos Aires. 1000 UTC.
- 6.115 R. Tanpa, Tokyo, Japan, until 1015 then try 6.055 MHz.

The above list is not comprehensive, but will give you an idea. I hope that you have a lot of fun tuning around.

Incidentally, a new station recently opened here in Tasmania — Radio 7RPH, in Hobart. This is the Radio Print for the Handicapped Station on 1.620 MHz from 0700 UTC until approximately 1200 UTC, Mondays through Saturdays. I did notice that one club referred to it as Tasmania's first shortwave station, but strictly speaking shortwave really starts from 3 MHz, but most authorities recognise that shortwave starts from 2 MHz. So 7RPH should be classed as a MW station. It is only fair strength here and not as strong as the similar 3RPH on 1.705 MHz on Tuesdays and Thursdays.

Well, that is all for this month. Until next time, the best of DXing and 73.— Robin. ■

SEPTEMBER 30-OCTOBER 8

LISTEN FOR

# AX4QCG

THE GAMES STATION



Mike Bazeley VK6HD  
Federal Awards Manager  
8 James Road, Kalamunda WA 6076

**AWARDS ISSUED**

Awards issued and amendments made up to 10th July, 1982, are listed below. The change around in the top DXCC listings is mainly due to the deletion of VS9K, Kamaran Island. For those who are interested, the most wanted countries by our top DXers are (in alphabetical order):— BY, CE0X, HK0 Malpelo, PY0 St. Peter and Paul Rocks, VK0 Heard Island, XZ, ZA, IA0 and 3Y.

**WAVKCA AWARD**

| Call Sign | Cert. No. | Call Sign | Cert. No. |
|-----------|-----------|-----------|-----------|
| W4PTT     | 1036      | VK9ZH     | 1045      |
| OK1STU    | 1037      | WB1AJG    | 1046      |
| F6DHB     | 1038      | JJ1RZG    | 1047      |
| VE1ACK    | 1039      | JH8GWW    | 1048      |
| WB2DND    | 1040      | JH7BRG    | 1049      |
| VE3JPJ    | 1041      | JA1NLI    | 1050      |
| KB7SU     | 1042      | JG1XEZ    | 1051      |
| KA0ALX    | 1043      | G3OLY     | 1052      |
| K0RDJ     | 1044      | WASHUP    | 1053      |

**DXCC NEW MEMBERS**

| Call Sign | Cert. No. | Tally   |
|-----------|-----------|---------|
| VK3DMI    | 289       | 101     |
| VK3DAK    | 290       | 158     |
| VK9NYG    | 291       | 121     |
| VK1GB     | 292       | 142/140 |
| VK6NID    | 293       | 100     |
| VK9ZH     | 294       | 105     |
| VK5NOD    | 295       | 105     |

| Call Sign | Tally   |
|-----------|---------|
| VK3NQ     | 209 156 |

**HAVKCA (SWL) AWARD**

| Cert. No. | Call Sign | Name        |
|-----------|-----------|-------------|
| 62        | L70217    | James Noble |
| 63        | ZL1-261   | Peter Jones |

**WAS (VHF) AWARD**

| Cert. No. | Call Sign | Countries                |
|-----------|-----------|--------------------------|
| 136       | VK2QF     | (Amendment) 18 Countries |

**VHFCC AWARD**

| Cert. No. | Call Sign | Tally     |
|-----------|-----------|-----------|
| 112       | VK2QF     | 113 VK7JG |

**DXCC — TOP LISTINGS**

(All at 275 and over)

| Call Sign | Tally   | Call Sign | Tally   |
|-----------|---------|-----------|---------|
| VK5MS     | 317/360 | VK4PX     | 297/312 |
| VK4KS     | 317/349 | VK3AHO    | 293/326 |
| VK6RU     | 316/362 | VK2APK    | 293/313 |
| VK5AB     | 314/345 | VK4UC     | 293/306 |



Nine Dragon Award — for details, refer page 48, August AR

|        |         |        |         |
|--------|---------|--------|---------|
| VK6MK  | 312/350 | VK6FS  | 292/294 |
| VK6LK  | 309/323 | VK3OT  | 292/293 |
| VK7DK  | 308/323 | VK5XN  | 289/302 |
| VK3JF  | 308/320 | VK7AE  | 289/291 |
| VK4VC  | 308/319 | VK3RF  | 284/286 |
| VK4FJ  | 306/343 | VK3DV  | 284/284 |
| VK7LZ  | 306/323 | VK6YL  | 283/284 |
| VK4RF  | 304/314 | VK7BC  | 280/283 |
| VK6HD  | 304/313 | VK6IR  | 277/278 |
| VK5WV  | 303/315 | VK2AHH | 273/296 |
| VK3AMK | 302/312 | VK3DU  | 273/275 |
| VK3AKK | 300/302 | VK4BG  | 272/282 |
| VK4AK  | 299/308 | VK5WO  | 267/285 |
| VK6NE  | 299/306 | VK4DO  | 261/281 |

**CW**

| Call Sign | Tally   | Call Sign | Tally   |
|-----------|---------|-----------|---------|
| VK2QL     | 310/350 | VK3YD     | 281/313 |
| VK2EO     | 308/346 | VK4RF     | 277/298 |
| VK3YL     | 308/336 | VK3RJ     | 261/288 |
| VK4FJ     | 302/345 | VK6RU     | 260/300 |
| VK3AHQ    | 298/331 | VK3NC     | 260/297 |
| VK3XB     | 286/314 | VK7LZ     | 253/283 |
| VK2APK    | 282/304 |           |         |

**OPEN**

| Call Sign | Tally   | Call Sign | Tally   |
|-----------|---------|-----------|---------|
| VK4KS     | 317/353 | VK7BC     | 297/301 |
| VK6RU     | 316/362 | VK4UC     | 296/310 |
| VK3YL     | 316/348 | VK2SG     | 295/314 |
| VK4SD     | 316/348 | VK3OT     | 295/296 |
| VK4FJ     | 312/356 | VK5WO     | 294/317 |
| VK6MK     | 312/350 | VK3AHO    | 293/326 |
| VK4RF     | 312/336 | VK3XB     | 291/320 |
| VK3JF     | 311/332 | VK2AHH    | 282/308 |
| VK6HD     | 311/326 | VK5RX     | 281/313 |
| VK7DK     | 309/324 | VK4BG     | 279/292 |
| VK7LZ     | 307/339 | VK4DP     | 278/287 |
| VK4PX     | 304/323 | VK4DO     | 268/296 |
| VK3AMK    | 302/312 | VK3JI     | 268/293 |
| VK2APK    | 300/329 | VK3NC     | 261/298 |
| VK3AKK    | 300/302 | VK5BO     | 249/281 |
| VK4AK     | 299/309 |           |         |

**DXCC — AMENDMENTS**

**PHONE**

| Call Sign | Tally   | Call Sign | Tally   |
|-----------|---------|-----------|---------|
| VK3AKK    | 300/302 | VK5OU     | 264/265 |
| VK3DFD    | 265/266 | VK5WV     | 303/315 |
| VK3DS     | 211/217 | VK6HD     | 304/313 |
| VK3DV     | 284     | VK6LK     | 309/323 |
| VK3RF     | 284/286 | VK7DK     | 308/323 |
| VK4AK     | 299/308 | VK9NYG    | 129     |
| VK5BO     | 178     |           |         |

**CW**

| Call Sign | Tally   | Call Sign | Tally   |
|-----------|---------|-----------|---------|
| VK3AKK    | 152     | VK5BO     | 162/184 |
| VK3JF     | 227/243 | VK6HD     | 263/274 |
| VK3RJ     | 261/288 |           |         |

**OPEN**

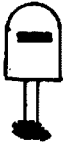
| Call Sign | Tally   | Call Sign | Tally   |
|-----------|---------|-----------|---------|
| VK3AKK    | 300/302 | VK6HD     | 311/326 |
| VK4AK     | 299/309 | VK7DK     | 309/324 |
| VK5BO     | 249/281 |           |         |



**VPS**  
It is interesting to observe that some 400 licences were listed for amateurs in the Falkland Islands according to the 1982 RA Call Book. This must be the highest percentage of amateurs total population anywhere in the world.

**OAYTON HAMVENTION**  
"Made the rounds through the 10 plus acres of flea market and then went inside to check out the commercial exhibits" — 173 booths of them. Over 25,000 registered but "I believe it went up to around 28,000". A few comments from an article in CORA May 1982.

**The WIA is in business for more members. Please help.**



# LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.



4 Ansett Crescent, Forest Hill 3131, Victoria.

The Editor.

Dear Sir,

I was horrified that you published a letter which contained blatant misinformation, calumny, and attacked the bona fides of several amateurs, including WIA office-bearers.

The letter from Ted Gabriel (RE: PHONE PATCHING, June AR) was not worthy of inclusion in the official journal of the Institute.

For 18 months I have been seeking the approval of phone patching by directly negotiating with Telecom.

Although the WIA Federal Convention has resolved to seek phone patching, at the time I became involved no one had approached Telecom on the matter.

Telecom had made an instruction prohibiting the Amateur Radio Service from using phone patching and Telecom management made this decision without consultation with the Institute and later claimed to be ignorant of the WIA's existence.

The prohibition had to be challenged or it could have become a permanent barrier to phone patching in Australia.

The fact that the Federal Convention endorsed phone patching disproves Mr. Gabriel's assertion that it doesn't have support among our ranks.

Phone patch will help promote our hobby in a positive way to the general public.

Amateurs also need to be prepared to play their part in times of natural disasters and phone patching is just another tool that can help us do that.

Mr. Gabriel's claim that there could be a breach of Third Party regulations to certain areas with the use of phone patch has been dismissed by the Department of Communications.

His fear that amateur operators would not have much control over the subject nature and language being transmitted is nonsense.

An amateur will have just as much control as if the third party was in the shack talking over the microphone — with the normal obligation of operators to brief those who will speak over his station on the type of language and subject matter permitted.

DOC would not take away a licence, as suggested by Mr. Gabriel, if the operator has taken necessary precautions.

The most scurrilous part of his letter refers to the "push" for phone patch which he says has been done by a few "lobbyists whose only concern is to line their pockets".

This accusation is completely without foundation as neither myself, the WIA Victorian Divisional Council, nor the WIA Federal Executive (all involved in the push) have been at the end of Mr. Gabriel's imaginary financial reward.

Anxious to get to the bottom of his innuendoes I dialled directly assistance, and ironically Mr. Gabriel appears not to have a telephone — a prerequisite for phone patching.

Regards,

Jim Linton VK3VKC/VK3PC.

12 Albert Street, Oak Park 3046.

The Editor,

Dear Sir,

## EXPERIMENTAL TRANSMISSIONS ON LOW FREQUENCY

A small group in Victoria would be interested in hearing from any amateur in Australia or New Zealand with receiving capabilities on frequencies below 200 kHz who would be willing to listen for experimental CW transmissions and send in reports. Anyone who is interested in participating in this interesting experiment please contact J. A. Adcock VK3ACA, QTHR. Phone (03) 306 2069.

J. A. Adcock.

5/17 Cooloongatta Road, Camberwell, Vic. 3124.  
The Editor.

Dear Sir,

10 MHz — 1/1/82 TO 30/6/82

The Editor,

Dear Sir,

After listening for 10 MHz amateur CW signals on every day of the first six months of the band being operational for "amateurs", I feel I am well qualified to pass judgement on the effectiveness, or otherwise, of our "new" band.

During the 181 days involved, I logged 476 different CW stations (40 countries — all continents) on the relevant band, all of which were made during the hours of 2000 GMT through to 1000 GMT.

Insofar as actual frequency used is concerned, I found that more than 90 per cent of loggings were made on either 10.105 or 10.110 MHz. (It was observed that phone transmissions, thankfully, were restricted to 10.130-10.150 MHz — these appeared to be far less in quantity than those using CW.)

On 1/1/82, nearly half of my loggings were "VK" sited — on 30/6/82 overseas loggings predominated. As a matter of fact, I found that "VK" amateurs were enthusiastic for January only, and from February on, their numbers slowly dropped and overseas stations increased, so much so that for the six months under review I logged more "G" and "DL" stations than "VKs". (During June I logged only one Aussie call sign that I hadn't heard previously on this band — surely "VK" can do better than that!!)

In my humble opinion the band concerned is a worthwhile one (commercial QRM notwithstanding), and I raise my hat to those "VKs" who have stuck with it — to quote a few call signs I include VK2BOD, VK2YK, VK3AC, VK3JM, VK3MR, VK6RO and VK6WT, all of which are "on" 10 MHz most days.

Reception signal strength varies day to day (similar to 7 MHz), but I believe that, at peak periods, overseas signals are stronger on 10 MHz than on 7 MHz. (Incidentally, best times for overseas signals to be heard at my OTH have been between 2100 and 2300 GMT and 0500 and 0700 GMT.)

To summarise my experience logging CW signals on 10 MHz, I do believe, in all sincerity, that the band is for experienced and patient type amateurs only. This is because there are always at least 10 to 12 commercial RTT stations operating within the 50 kHz allowed to amateurs and some of these transmissions are very strong at most, if not all times, and create an unavoidable QRM problem for ALL amateurs to overcome. (Also present across the band, most of the time, are unkeyed/unmodulated carriers of unknown origin). If all goes well in the meantime, I hope to present a second report on "10 MHz for amateurs", covering the period 1/7/82 to 31/12/82.

Yours faithfully,

Eric W. Trebilcock L30042 (BCRS-195).

83 Eighth Avenue, Loftus 2232

The Editor,

Dear Sir,

On receipt of the July issue of Amateur Radio Journal, George VK2GT showed me an item "A love letter to a 65-year-old husband just retired" and I was amazed to see that it was entered as a letter personally written by me to George. This is not correct. I cannot take credit for it, only for contributing it as an item to be published as an "extra" in the "Lyrebird".

It came to my hands about six years ago, about the time George was retiring — we considered it appropriate to retirement in many instances, but many discrepancies as regards George's retirement.

George was 62 years when retiring, we had been married 36 years, he has always been a non-smoker and we have never had, and still don't have, "time on our hands", etc.

I took some copies of the letter and a lot of our friends, relatives about 10, or having retired, have received many a laugh about it and enjoyed reading same.

Since the publication I have received one beautifully written letter from an amateur friend, congratulating me, and have heard that it has been discussed in many other circles and naturally all have considered it as a personal letter, although some good friends who know us and our life-style will be completely puzzled by the contents, or at least some of them.

The original, which copy I gave, was written to "my Beloved Husband" and concluded "Your loving and devoted wife", and I certainly did not give the impression that it was a personal letter and didn't intend it as such.

Any credit due must be given to an anonymous writer, but after this, who knows, I may write a letter on "six years of retirement" which you may care to publish?

Kind regards,

Your sincerely,

Jean Bruce (XYL VK2GT).

3/157 Brook Street, Coogee 2034

The Editor,

Dear Sir,

## "WORLD COMMUNICATIONS YEAR"

Here is a golden opportunity for all amateurs to become involved in activities and provide much needed publicity of our technical expertise, capabilities and remove the label of "a bunch of weirdos" that many members of the public feel when amateurs or hams are mentioned.

We have such a diverse range of activities that I'm sure would astound non-amateurs, such as DX-ing, computer logging, VHF repeaters, RTTY, satellite moonbounce, television, microwaves and many more. I expect the museum of Applied Arts and Sciences will be involved, not forgetting due to a dedicated group of volunteers, they perform this much needed publicity all year round. So why don't the clubs get in on the act and set up stations in shopping Plazas, static displays in bank windows and release news value items such as distress and third party traffic to the news media.

Items such as the launching of our satellites (and failure during launch!) should be of interest, but at least we can try and let people know what we are doing. Perhaps the Melbourne ATV Group could set up a receive station in a public place so shoppers/passersby can see what's happening on the ATV repeater, they have a tremendous achievement to be proud of, so why not tell everyone about it.

Personally, I will gladly volunteer for any activities and would hope many others would do the same, let's really make an effort for WCY.

R. N. SINCLAIR VK2DWF.

3 Corkill Street, Freshwater 4870, Old.

The Editor,

Dear Sir,

With reference to WIA NEWS on page 5 of June AR, item 4, concerning co-ordination between third party traffic networks and authorised amateur emergency networks (meaning WICEN), I would like to point out to the "starry-eyed" advocates of this proposal the following irrevocable facts:—

1. WICEN is only one member of a national team who participate in radio communications in emergency situations.
2. The other team members are the State Emergency Services, the three Armed Services, State Police Forces, Coastguards, etc.
3. All these teams members speak the ONE LANGUAGE: in other words they use Standard International Radio-Telephone procedure, standard Service/SES message handling procedure and message forms.

4. The majority of persons originating and handling emergency traffic will, in most cases, be SES personnel and while these people are not always radio operators, they are nevertheless quite competent at handling messages in the system in which they have been trained.

The same applies to Service personnel.

Therefore if it is desired to bring in third party traffic nets to join this highly skilled team they must also be trained in the same system and be under the control of WICEN.

In their present form and method of operation they would be absolutely useless to the emergency services since they lack any plan of operation or training.

WICEN maintains a high standard and reputation worthy of the Amateur Radio Service.

It has often been praised for its competent and professional handling of emergency communications.

Let us keep it that way!

Yours sincerely,

Ted Gabriel VK4YG,  
WICEN Co-ordinator, Region 1, Queensland. ■  
Box 59, Atherton, Qld. 4883

The Editor,

Dear Sir,  
I deem it quite an honour to belong to the WIA, having been a member since 1929.

I have watched with great interest how the AR has developed over the years, the last issue, Vol. 50, No. 7, of July is so outstanding that I feel compelled to write to you and congratulate you.

The contents are so well balanced that I think praise should go to you, excellent technical articles, a brand of humour that is both witty and clean, such as the one on page 4 by the XYL of VK2GT, what a lucky fellow is her husband, the little snippets here and there, which show both wit and cleverness, and articles of interest to all and sundry.

All in all, it is a most outstanding magazine and gives me continued hope in the amateur ranks.

I take off my cap to you, and if possible I would like you to let all and sundry know what an old-timer thinks.

Sincerely yours,

Harry C. Kinzbrunner VK4HK. ■

274 Esplanade, Pialba, Qld. 4655

The Editor,

Dear Sir,

The item by Marshall Emm VK2DXP (AR July 1982) on Poetic Abbreviations was read with a smile and a chuckle. I wonder how many amateurs could understand the "cut up" rhyme by Spru Spruhan. It is really a classic and many an ex-Teleg or ex-Postal Clerk would remember his Instructor praising the virtues of the old-timers who could really send Morse and abusing all who dared to send an incorrect letter or even clip the dashes.

In my days (1950s) 22½ WPM was the minimum requirement to qualify as a Postal Clerk but even at that speed it took some more years before we became proficient enough to tackle the Telegs in the CTO. The Telegraphists were the "elite" of the Morse in the old PMG days and the Postal Clerks, who worked at the end of the line in the Post Offices were only "part-time" Morse operators. BUT — there were the PCs who could be serving a customer at the counter, be called on the line by CTO, give GA, go back to serving on the counter and THEN write down three telegrams after the line was silent.

I am very pleased to hear that, although TRESS has taken over as a means of communication by Telecom, good CW is still practised by many an amateur operator. It is also pleasing to hear that the younger generation are keen to continue the art as they progress from 5 to 10 to 20 WPM. The keyboard and VDU are creeping in and if we are not careful, the "art" will be taken over by these "Plastic" monsters. Although pleasing to the ear, their beauty is skin deep and without character.

Yours faithfully,

R. J. Wheller VK4VHL.

EDITOR'S NOTE:

The writer has also forwarded an item called "Soliloquy on Morse". This will be published when space permits. ■

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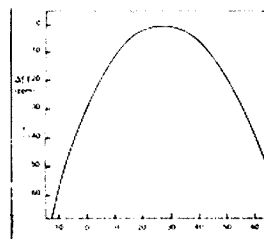
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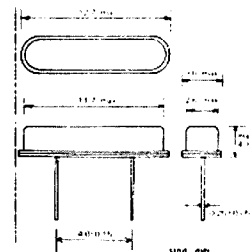
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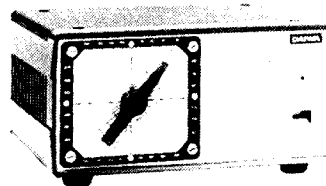
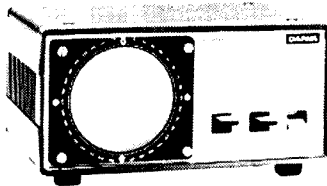
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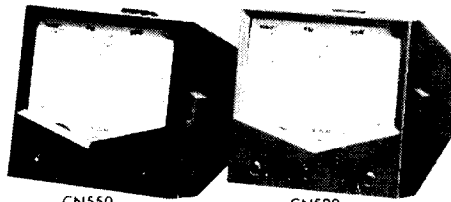
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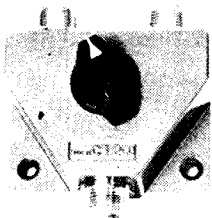


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## SILENT KEYS

It is with deep regret that we record the passing of —

|                                    |        |
|------------------------------------|--------|
| Mr. L. H. BROWN                    | VK3BUA |
| Mr. U. S. DAHL                     | VK4VT  |
| LT.-COL. A. V. GILES, MBE, DCM, ED | VK2ZGA |
| Mr. H. R. GRAY                     | VK2AFA |
| Mr. R. L. KEOGH                    | VK4KU  |
| Mr. G. L. LEE                      | VK2AGD |
| Mr. L. M. STONE                    | VK2LW  |
| Mr. P. R. WRIGHT                   | VK2VOZ |

## OBITUARIES

ARTHUR VINCENT GILES, Lieut./Colonel, M.B.E., D.C.M., E.D. VK2ZGA

Arthur passed away at his home on 2nd July, 1982. He won the D.C.M. in Palestine in 1941 and was awarded the M.B.E. in 1970 for his work in both Service and Charitable Organisations. He was a Life Member and Past President of the R.S.L.A. Engineers Sub-branch and a member of the Management Committee of the Northcott Neurological Diagnostic Centre and President of the Friends of Northcott Committee also.

His Service life began in 1934 in the Militia, then in the AIF from 1940 to 1948. In 1950 he joined the CMF and in 1951 the Regular Army, serving until retirement in 1972. During this period he served in Syria, New Guinea, Japan, Papua New Guinea and the United Kingdom, where he held an amateur radio certificate.

Arthur also found time to hold office in many other organisations, including President and Life Member of 7th Australian Division AIF Association, President and Life Member 7th Australian Division Engineers Association, President of 7th Australian Division Memorial School, Situm Building Fund, Papua New Guinea, and a member of United Services Institute, Institute of Royal Engineers United Kingdom, WIA, WICEN network and the Volunteer Rescue Association.

I first met Arthur in 1935, at which time, as well as his involvement with the Army, he was also interested in radio. Events prevented him obtaining his amateur licence until 1964.

Arthur is sadly missed by his many friends and comrades.

Ross Usher VK2ZRU. ■

PHILLIP WRIGHT VK2VOZ  
It is with deep regret we mourn the passing of Phillip VK2VOZ on 18/5/82, aged 25.

Whilst licensed only a few short years, Phillip made many amateur friends and especially liked chatting on CW, and it saddens us to see someone as young as Phillip taken from our ranks by such a serious illness.

His presence will be missed both on and off the air by all who knew him.

Our deepest sympathy is extended to his wife Mary and his daughter Vanessa.  
Geoff Vaughan VK2FY. ■

LEW STONE VK2LW  
Lew was a stalwart on 20 metres for a great number of years, a kindly man, always patient and ready to help out the newcomer and the old-timer alike. He was an interesting man to have a QSO with, and was genuinely concerned about the other fellow and his problems. He always liked working the "G" stations, and particularly looked out for them, and we in our turn enjoyed working him.

If you could not hear Lew, the chances were that you would not hear any other VK2 either. He will be sadly missed by us all over here. Twenty metres will not be the same without him.

God bless you, Lew, you gave us a lot of pleasure for a long time. We won't forget you in a hurry.  
Alec C. Thompson G4FIJ, also VK3BQW. ■

GEORGE L. LEE VK2AGD  
It is with deep regret that I record that George Lee VK2AGD, of Kahibah, NSW, passed away suddenly on June 4th, 1982, at the age of 74. George was a keen, active radio enthusiast from a very early age and became a licensed operator in the early 1930s. In those days and immediately after World War II he spent a large portion of his "on air" time on the 10 metre band.

In the last few years, he became even more experimental, it could be said, in home-brewing everything he used in the shack, so that invariably he had a piece of gear of some kind under construction at all times.

His passing came as a great shock to all who knew him.

Our deepest sympathy is extended to his wife, Eileen, and his family.

Allan Stephenson VK2PT. ■

HARRY GRAY VK2AFA  
A true friend is gone and amateur radio is the loser for the passing of Harry Gray VK2AFA on 7th July, 1982. Harry was a foundation member of Westlakes Amateur Radio Club and he worked actively with that organisation encouraging and helping members, especially those taking their first steps along the road to the mastery of CW. He was born at Torrieburn, Scotland, in 1896 and was a miner until he joined the services and served in Europe during the first war. He migrated to Australia in 1922 and settled in Teralba, which was to be his home until his death.

Harry's radio activities resulted in him gaining a licence in December 1936, and his first and most of his QSOs were on CW. There is no doubt that his expertise in the Code led him to volunteer for service in signals during World War II and also for his selection to work with a government team in New Guinea after the war establishing communications networks.

Harry was a keen advocate of home-brew equipment and those who knew him well will recall his typical shack, that famous flip over ZL special supported on bush poles and the mass of awards, including the DXCC on his shack wall. He was well known to DX and had regular daily skeds on CW until the onset of his disabling illness two and a half years ago. It is unusual, but fitting, that the officiating minister should spend time during a funeral oration to talk about amateur radio and the part it played in Harry's life, but the many old-timers present at the service were greatly comforted by these words.

His amateur radio friends, both young and old, will long remember his quiet example and strong endeavour to uphold the ideals of our hobby.

Rest in peace silent key VK2AFA.  
VK2AKX. ■



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- Repeats may be charged at full rates.
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- QTHR means address is correct as set out in the WIA current Call Book.

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CB Radios \$69; walkie talkies, short wave radios, military, outback, business, amateur, marine, repairs, RTTY Siemens 100A printer \$120; base mic., \$45; ultrasonic alarm, \$35; all ham bands on a single 6 ft. whip, 1.8 to 30 MHz, for base or mobile, \$300; aerials, installation, demonstrations, 40 ch. CB conversions, accessories, new rigs weekly. Bridge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW. Mail order service and all enquiries to 2 Griffith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066.

#### FOR TENDER — VIC.

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Deceased Estate (VK2VOZ): Kenwood TS520S txcvr., with SP520 speaker, immac. cond., \$500; Shure 444 SSB mic., new cond., \$65; Drake TV 3300 LP TVI filter, \$33; Oskerblock SWR 200, \$55. Geoff VK2FY, QTHR. Ph. (02) 602 9043.

Deceased Estate: 432 MHz microwave modules converter, 432 MHz microwave modules tripler, 500 MHz microwave modules prescaler. VK2ZRU, Ph. (02) 451 6992.

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Icom 701, highly tuned, mod. for extra final-cooling, cfliter wks on Tx/Rx or Tr only, compl. w/preamp desk mic. and RM3 memory and remote contr. unit that has been mod'd to scan and stop on sig, v.g.c., \$825 (will not sep.); Icom act. filtr. and spkr. unit, as new, \$75; Hustler mobile whips, 10-40-80m set, \$55; Siemens 100 teleprinter, compl. w/bld in demod/mod. fltrs., switching and loop PSU, \$325; asstd. scope spring probes, \$5 ea.; 3 stage 60 ft. Hills tower, \$175. VK3DKN Kingsley, Ph. (03) 555 5221.

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Yaesu FT101ZD Mk. III, latest, incl. FM board, WARC, mic., service manuals, new, \$700; Yaesu FV901DM, 40 ch. scan, ext. VFO, suit FT101ZD, FT901D, FT902D, new, \$200; Kenwood ext. spkr., SP180, new, \$40; ext. VFO 180, new, \$90, suit TS180S. VK7AN, Ph. (003) 31 7914.

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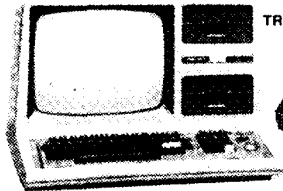


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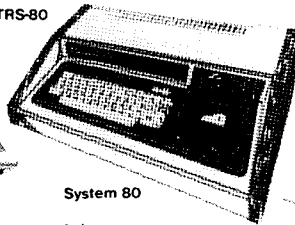
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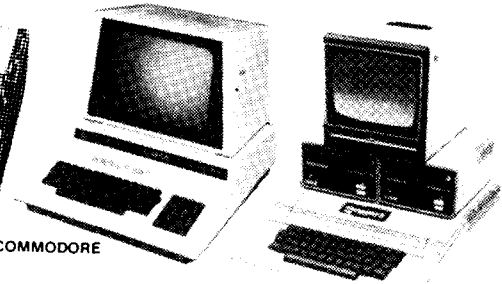
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# Amateur Radio

VOL. 50, No. 10 OCTOBER, 1982

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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



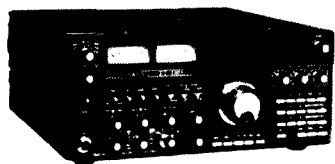
*This month's features include:*

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- ★ FEDERAL SECRETARY/MANAGER RETIRES
- ★ NEW COMPETITION
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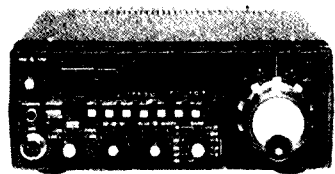


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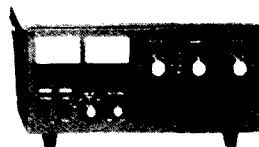
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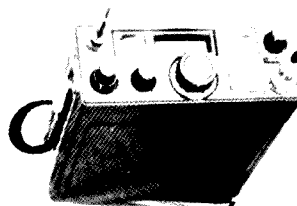


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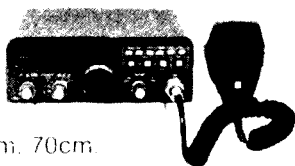
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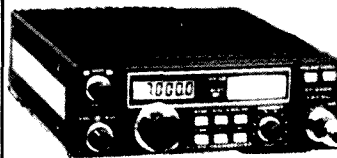
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PO Box 150, Toorak, Vic. 3142

Copy is required by the first of each month. Acknowledgement may not be made unless specially requested. All important items should be sent by certified mail. The editor reserves the right to edit all material, including Letters to the Editor and Hamads, and reserves the right to refuse acceptance of any material, without specifying a reason.

Material should be sent direct to P.O. Box 150, Toorak, Vic., 3142, by the 25th of the second month preceding publication. Phone: (03) 528 5962. Hamads should be sent direct to the same address by the 1st of the month preceding publication.

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# amateur radio

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Photo courtesy of Austral International Press Agency, Box 5352, GPO, Sydney. Phone 439 8222.  
Rex Features Ltd.  
Mauro Carraro Photographer.

# a word from your EDITOR

Bruce Bathols VK3UV



## URGENT

NOTICE TO ALL AR CONTRIBUTORS AND SUB EDITORS  
(INCLUDES ARTICLES, LETTERS, HAMADS)

Considerable delays and difficulties have been experienced in the processing of some items for publication during recent times.

To enable proper editorial corrections to be carried out, please ensure that material submitted conforms with the following:

1. Use one side of paper only.
2. Double space typing.
3. Legible printed hand writing will be accepted. Write on each second line.
4. Leave at least a 3 cm margin on the left side of the sheet.

Items NOT submitted as outlined above will be deferred.

PLEASE USE THOSE TRAM TICKETS FOR WRAPPING YOUR  
MEAT, NOT HAMADS.

Bruce VK3UV  
Editor

## USING LAMPS, LEDS AND NEONS

How many of us, I wonder, realize that operating these lamps from DC greatly shortens their lives, compared with the use of a low-impedance AC source? One reason is that DC is often fed to the lamp through a series resistor or through a semi-conductor device. Unfortunately the filament resistance of a lamp increases with age, so that the voltage across any lamp forming part of a resistor chain will gradually increase. Even more deadly is the uneven evaporation of the filament (causing notches) that, for reasons not fully understood, is more serious with DC-operated lamps. It is suggested that AC operated lamps can last from two to ten times as long as those operated from DC. Lamp life is affected, of course, by supply voltage, roughly in accordance with the type of life curves often supplied by the manufacturers. It is, however, important to appreciate that makers' life estimates, etc. are based on the devices being operated in ideal rather than practical conditions. A lamp operating in a flashing mode will normally fail more rapidly. There is a danger of choosing a flashing time that excites mechanical resonances of the filaments with many resonant points, and the adjacent turns may short circuit when a filament vibrates. Switching a lamp on and off at intervals sufficiently long for the filament to cool down will tend to reduce lamp life because of the high inrush current when the cold filament is first switched on. Tungsten filaments, incidentally, are more fragile at room temperature than at operating temperature. Ventilation, usually by encouraging convection of air, keeps bulb temperatures low and will extend the life of the bulb. In comparison with an incandescent lamp, a light-emitting diode (LED), though normally providing less light intensity, can last virtually

forever (a well made LED has a half-life of over 20 years of continuous use!) In effect useful life is determined by the gradual loss of light intensity and so tends to be measured to the point where the intensity has dropped to half its original value. But, of course, it is necessary to pay attention to a number of points if such longevity is to be achieved. Do not mix LEDs and lamps in close proximity: the heat from the bulbs can destroy the LEDs. At high ambient temperatures the light output from a LED decreases; continuous running at 80°C or higher accelerates the loss of intensity. At low temperatures (which can crack the bulb of a miniature lamp) a LED can be extremely efficient. A LED always needs a series (ballast) resistor to limit current. A LED can be operated from AC, but because the reverse breakdown voltage is usually only about 3-6V, it may need a series diode or diode in inverse parallel configuration, in addition to a series resistor. A cut-price LED may well be a device with lower than rated light output, since such devices are often weeded out during manufacture and disposed of at bargain prices. Like most semi-conductor devices, a LED can be damaged by careless soldering: makers often specify a maximum soldering temperature of 260°C for not more than five seconds. When attempting to fit a LED into an 0.1 hole in matrix printed circuit board, note that not all devices have standard lead spacing. Miniature neons have a rated life a good deal better than incandescent lamps but only about 1/10 that of a LED. They last longer on AC than DC (about twice as long) and should not be exposed to high temperatures. An undesirable characteristic of some neons is a tendency to flicker due to movement of the corona discharge.

Reprinted from: *Lyrebird*, Dec '81



The Hon. N. A. BROWN, QC, MP, Minister for Communications and Minister Assisting the Attorney-General.



MINISTER FOR COMMUNICATIONS  
and MINISTER ASSISTING  
the ATTORNEY-GENERAL.



The Hon. N.A. Brown QC. MP  
Parliament House  
Canberra ACT 2600  
26 AUG 1982

Dear Peter,

I would like to thank **Amateur Radio** for this opportunity to inform readers of this magazine of a number of recent and proposed developments concerning the Amateur Radio Service in Australia.

As Amateur Radio enthusiasts, you all know how far Amateur Radio has come since the early 1900s. From simple hand-made transmitters and receivers developed by the operators themselves, we have progressed to complex, computerised 'black box' equipment. In those early days, pioneers had to invent and construct their own equipment. Today enthusiasts can buy a dazzling array of electronic components 'off the shelf'. It is not surprising that the regulations governing Amateur Radio have also increased over the years and occasionally need pruning.

The Government has long recognised the value of the Amateur Radio Service. Over the years, it has made an important contribution to radiocommunication services in Australia, especially during emergencies. It also provides valuable technical training for operators, and serves as a medium for international understanding and co-operation. There is every indication that its international value will continue to grow.

As you are aware my Department plans, revises and implements policies controlling use of the radio frequency spectrum in Australia. In general, access to the spectrum is governed by the need to avoid interference with other users. However, the Department's attitude to the Amateur Service has always been to allow as much flexibility as possible to develop new and improved techniques. Recent examples include the authorisation of Narrow Band Voice Modulation techniques and increased flexibility in machine telegraphy. My Department will continue to be receptive to proposals for future improvements.

There have recently been several initiatives in Amateur Radio in Australia:

The most important breakthrough for some years was the relaxation of restrictions on third party traffic. Amateur radio stations are now allowed to pass messages for a third party, providing these are technical or personal and involve no direct or indirect payment. Recently, agreements on third party traffic were reached with the USA and Canada and agreements with other countries are being considered.

Next, as a result of the World Administrative Radio Conference (WARC) in 1979, amateur radio stations in Australia may now share the frequencies 10.1-10.150 MHz with existing fixed stations. The Department has issued the appropriate conditions and guidelines to reduce the risk of interference between amateur and fixed stations. As well, amateurs gave assistance in the Department's task of drafting the new Australian Table of Frequency Allocations expected to be available later this year.

Other initiatives include:

**Preparations for World Communications Year (1983)**

Amateur radio operators, through the Wireless Institute of Australia, have expressed their willingness to work with other interested groups on the planned National Committee under the aegis of my Department.

**Amateur access to the 18 and 24 MHz bands**

Another resolution of WARC-79 will allow frequencies between 18.068 and 18.168 MHz to be shared with amateur satellite services, and those between 24.89 and 24.99 MHz (presently occupied by fixed stations) will be made exclusive to amateur stations.

**Amateur access to the 80 MHz band**

It is likely that amateur access will be expanded into the 50-5.15 MHz band where this will not interfere with the present users, Channel O television broadcasters. The conditions of amateur use in Channel O reception areas will be clarified under the new Australian Table of Frequency Allocations.

**Review of examinations for amateur operators' certificates**

The Department has consulted with the Wireless Institute of Australia about the present examination fee structure, unchanged for many years. The increased popularity of amateur radio has brought more candidates seeking examinations each year, and now that my Department is in a full cost recovery situation the fees will be altered to reflect this. The Department is also trying to simplify its examination process and extend subject exemption periods, without lowering internationally recognised standards.

This brief outline of recent developments reflects years of close co-operation between representatives of Amateur Radio in Australia and officers of the Department of Communications. I believe our common interests will ensure equally close co-operation in the future.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'N.A. Brown'.

N. A. BROWN

Mr. Peter Wolfenden, VK3KAU,  
President,  
Wireless Institute of Australia,  
P.O. Box 150,  
Toorak, 3142, VICTORIA



# WIA NEWS

## THE SEVEN YEARS — PAST

Yes, this column began in AR August 1975 to publicise Federal news — to tell members as clearly and accurately as possible — what is going on in the Federal sphere. All these have been written by the Manager and edited by the Federal President or his nominee over the years.

AR is not like your daily newspaper — merely to be scanned and thrown away. It contains all the available news about your chosen activity. Some items may be transitory but many have a long life. You need the journal for future reference. Some members index subjects to make it easy for themselves when seeking something to settle an argument — the index in AR cannot hope to cover the 1000 and one bits and pieces tucked away in the journal.

The past seven years have seen many changes and a vast amount of work Federally. Novice Licensing, CB service, WARC79 and preparations for it are a few major items to contemplate.

## THE SEVEN YEARS — FUTURE

The future is built on the past — to be trite! Looming ahead for us are the new Radiocommunications Act — and the new Australian Table of Frequency Allocations (see AR March 1981 page 8) neither of which are in the public domain yet. Then there is WCY 83 which we, as amateurs, should take special advantage of to get our hobby more widely known and appreciated by the general public. Not to be overlooked are our 75th anniversary year 1985 and the Bicentenary Celebrations 1988.

Some parts of amateur radio will keep rolling along as they have always done — two way communications around the world being a main drawcard as always. Other parts of amateur radio will expand with new technologies — digital techniques, microprocessors, satellites, ATV, EME, you name it, the amateur will be into it.

The world is a small place, for sure.

Peter B. Dodd, VK3CIF  
Past Secretary/Manager

## The Radiocommunications Act

Communications and Electronics have progressed dramatically since the Wireless Telegraphy Act was written.

After many attempts to re-write the old Act, there is now every indication that the Bill for the new Act will be 'tabled' in Parliament during the Budget Session (17 Aug. - 25 Nov.).

The Bill will be given its first reading by the Minister for Communications, the Rt. Hon. N.A. BROWN — "The Bill is then open for public comment."

The National EMC Advisory Service would like to remind all Amateurs of the importance of this — "Bill for the New Act" — and the direct effect this new Act could have on the Amateur Radio Service.

The "Bill" is the "Act" in draft form; therefore it can be amended many times, before it becomes an Act ... Copies of the Bill should become available at the Government Printer's Office after the first reading.

Every member of the Amateur Radio Service should, in the interest of the continued well-being of our Service, ensure that he or she is familiar with all aspects of the Bill, which directly or indirectly affect the Amateur Radio Service.

The National EMC Advisory Service is assisting the Federal Executive in setting up a committee to handle the Institute's response to the Bill. The committee has been instructed to take account of opinion from all areas when responding to the Bill.

If, after studying the contents of the Bill, you feel that you have a contribution, or may be in a position to assist the committee with any facet of this important response, please WRITE to your Division, or direct to:

**CHAIRMAN, CASPAR.**  
(Communications Act Special Planning and Response)  
Committee, P.O. Box 150, Toorak, 3142.

WELL ... I CAN DREAM CAN'T I?

by Bandel Linn, K4PP





# QSP



## PETER DODD

*VK3CIF/VQ4PBD/5H3PBD/GD3PBD/ZL2BDC/YA1PBD/7Q7PBD*

Peter Dodd, often referred to as "the voice at the other end of the telephone" — our Federal Secretary/Manager for nearly 12 years retired last month after serving and helping guide the Institute through its, and amateur radio's, period of greatest growth.

Peter was appointed Secretary in time for the 1971 Brisbane Convention and thus ended an era of wholly volunteer labour and no central facilities for the Federal arm of the WIA. The need for paid staff however, was discussed as far back as 1944 when planning for postwar amateur radio was under consideration.

Since the establishment of a Federal Office, responsibilities have mounted. Indeed it is nigh impossible to imagine just how the Institute would survive today without this central nucleus.

The office's administrative functions and responsibilities have grown with almost every Federal Convention.

In the early stages, a computerised membership record system was developed in 1971 with the help of the VK3 Division which enabled membership subscription notices to be sent out and processed centrally. The responsibility for Magpubs was at that time, also handed over to "the office", then in 1972, Amateur Radio Magazine Production was transferred from the VK3 Division to the Federal body.

From those early days, Peter has seen the amateur population grow from about 6300 to some 15,000 today. He has seen greater involvement in international affairs through our membership of IARU, and of course a number of important international conferences such as Space and WARC '79.

The recent accelerated membership growth due to Novice licencing has taxed the office staff considerably. Now the Australian call book is published annually and we have produced our first WIA Book — of course not all of this work has been done by any one person in isolation. Many Federal office bearers contribute greatly in their own sphere (frequently with the help of the office) — but there is little doubt that Peter Dodd has contributed greatly to all of these activities and many more!

But like so many Federal Officers both paid and volunteer, the general membership knows little of them — they are often just the voice at the other end of the telephone or a signature at the bottom of a letter.

Few recently licensed amateurs realize that Peter is well known in certain amateur circles and has been sought by many an amateur world-wide for Peter, on a number of occasions, has operated from exotic QTHs — he has been rare DX!

QST for January 1959 reports his VQ1 DXpedition — detailing the atmosphere, the trials, the tribulations and successes of his trip to Zanzibar. In later QST's he complained about the bad manners and operating procedures of many operators trying to contact him! — perhaps little has changed.

More recently in Amateur Radio of March 1977 in an article entitled "DX to DX", Peter's overland trip to Australia gives us yet another glimpse of his character. Definitely worth a re-read by anyone with a desire to go mobile or portable in some of the more colourful countries of Europe and Asia.

However, time stands still for nobody and hopefully, Peter in his retirement will now be able to find time to operate on the air and who knows, perhaps he may even be bitten by the DX bug once again!

On behalf of the members of the WIA — and I should also add the many hundreds of non members who, over the years have sought and received help from Peter. Thank you Peter for your efforts. I am sure that Amateur radio in Australia has benefited from your efforts and may your retirement be a happy and healthy one.

Peter Wolfenden, VK3KAU  
Federal President WIA  
on behalf of the members and others

**Peter Dodd Retirement Function** — It is anticipated that a farewell dinner will be held during October. If you desire to attend or would like further information, please write to: Federal President, c/- WIA, Box 150, Toorak 3142, Vic.

# ANTENNA COMPETITION QUIZ

Pick the nearest correct answer.

- An isotropic radiator
  - operates from off-peak electricity
  - is the radiator used at the focal point of a parabolic reflector
  - has a gain of 2.1 dB relative to a dipole
  - has a loss of 2.1 dB relative to a dipole.
- The letters DRRR stand for
  - Department of Directional Radio Research (Commonwealth Department of Science)
  - Donald Duck's Raucous Raspings (Splatter from SSB signal)
  - Directional Discontinuity Ring Radiator (Vertically polarised antenna)
  - Direct Dipole Radiation Resistance (73.1 ohms in free space)
- Increasing the height of a VHF antenna more than 3 wavelengths above nearby obstructions
  - will improve ground wave signals at distances up to 150 km.
  - will make no difference at all
  - will cause it to blow down in the next storm
  - will improve all signals providing the height is a multiple of a half-wave length.
- A long wire is
  - a telegram of more than 100 words
  - a wire antenna more than four wavelengths long
  - any wire antenna more than one wavelength long
  - any wire antenna where the principal wave angle is inclined to the major axis.
- Yagi arrays are often considered better than co-linear-broadside arrays of the same gain because
  - they provide wider 3 dB gain angles and so are easier to aim.
  - they are cheaper to build, lighter and require less space.
  - the height above ground is the same for all bird perches.
  - the side lobes are always 20 dB lower
- A ground plane is
  - An aircraft prevented from flying
  - A flat perfectly conducting surface
  - A quarter wavelength radiator
  - A vertical antenna with 50 ohms impedance.
- Dr. Yagi developed a parasitic type end-fire antenna. What was Dr. Yagi's christian name?
  - Harry
  - Hirosugu
  - Hideisugu
  - Stanislawski
- A folded-dipole is usually used
  - to give increased feed resistance compared to a single dipole element
  - to fit a long dipole into a suburban block
  - to provide multi-band operation in a beam antenna
  - by commercial travellers who like to operate as a portable station.
- A Bazooka is
  - a device to repel neighbours complaining of TVI during a contest.
  - two parallel driven dipoles in a parasitic array giving wider bandwidth
  - a type of multi-band vertical antenna using concentric tubing for quarter-wave chokes
  - a quarter-wave length of tubing used for balancing a coaxial feed system.
- The G5RV is known as a multi-band antenna. This means
  - it is not allowed in many countries
  - it works on all HF bands if used with an ATU
  - it works on all bands and does not need an ATU
  - it provides high gain lobes on all DX bands.

The Publications Committee, due to the response of members showing their interest by the forwarding of entries to previous tests of skill have, through the co-operation of Bail Electronics, Australian Agents for Yaesu Musen SSB and FM Equipment been able to offer TWO prizes for participating entrants.

The first neatest correct answers to be drawn at random from entries submitted, by Peter Dodd, VK3CIF, past Manager/Secretary of the Wireless Institute of Australia will win a YAESU RSL435 COLLINEAR ANTENNA for 70cm. This antenna has a gain of 5.6dB and is for pipe mounting. The value of this superb prize is \$63.00. This prize will make it a "must" for all VHF enthusiasts to enter this competition.

The second neatest correct answers to be drawn by Peter, will ensure the lucky entrant in the contest pleasurable hours of listening as this prize is a pair of lightweight YAESU HEADPHONES type YH 77 valued at \$20.00.

In each case, if the winner does prefer some other article of equipment, a voucher of equal value to the prize will be made available to purchase goods from Bail Electronics.


## RULES

The contest is open to all financial members of the WIA with the exception of all people and their immediate families associated

### BAIL ELECTRONIC SERVICES

COMMUNICATION EQUIPMENT SPECIALISTS  
Australian Agents for YAESU MUSEN CO. LTD. (SSB & FM EQUIPMENT)  
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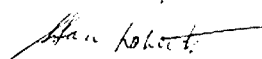


TELETRAMEL PTY LTD  
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 P.O. BOX 506  
 WANGARATTA, VIC 3677

## Voucher

*This entitles the winners of AR Competition No. 4 to the prizes as donated or alternatively if they desire the value of each prize respectively off the purchase of goods or equipment purchased from us.*

Yours sincerely,

  
 Stan Roberts VK3BSR  
 Managing Director

with the production of Amateur Radio. ONE entry per member (all multiple entries will be disqualified prior to drawing), each entry to be handwritten on the back of a standard Australia Post approved small envelope. (ie: 1 (a) 2 (a) 3 (c) etc).

Entries must be received no later than the last mail on the 1st. December 1982.

The Editor's decision will be final and no correspondence will be entered into

regarding the competition. The winners and the correct answers will be published in January 1983 AR.

All entries to AR Competition No. 4, Box 150, Toorak, Victoria, 3142. On the back of the envelope your name, address, call sign and the answers to the problems.

*Only entries in the above format will be accepted. All others will be disqualified.*

## COVER STORY

Well, it's one way to get a royal welcome! Cheeky pilot Australian Dick Smith dropped in at Balmoral during his round-the-world helicopter trip, and chatted to another helicopter enthusiast — Prince Charles.

Dick, 38, said he had to buy a road map to find Balmoral, and when he turned up he had a toy helicopter with him as a present for Prince William.

Prince Charles seemed to enjoy the whole occasion. He wore a kilt — his traditional outfit when holidaying in Scotland — and looked at the visiting helicopter with interest.

# Dropping in at Balmoral and landing on the front lawn.



Dick, VK2DIK, has completed the first phase of his Around the World Helicopter exploit by landing on the floating London Heliport in the Thames on 20th August.

This first leg, although the shortest and first part of the trip, was anticipated as being the most gruelling due to the difficult weather conditions and remoteness of the area, was on schedule even though initial problems with malfunctioning avionics caused concern. Although Dick's route across Greenland was altered due to advice from the US Air

Force who described it as bordering on suicidal to attempt to cross the barren and central plateau of Greenland and it would be preferable to follow the southern coast of this barren land, he was on schedule at Balmoral Castle where Dick was met by Prince Charles who is also a keen helicopter enthusiast.

The trip was described by Dick as being very loney and cold and it was not known until his landing at Balmoral that he could have been the target for some marksman enroute. Two holes, apparently made by bullets, were found after landing. One hole was through the helicopters window and the other through the top of the fuel tank. Dick was not aware and nor does he know where he picked up this extra freight.

For the aeronautically minded reader, the helicopter is a Bell Model 206 Jetranger III, which is equipped with the most up to date navigation instrumentation available including equipment capable of using the VLF Omega system which allows precise navigation to any point of the globe. This helicopter which is called the "Dick Smith

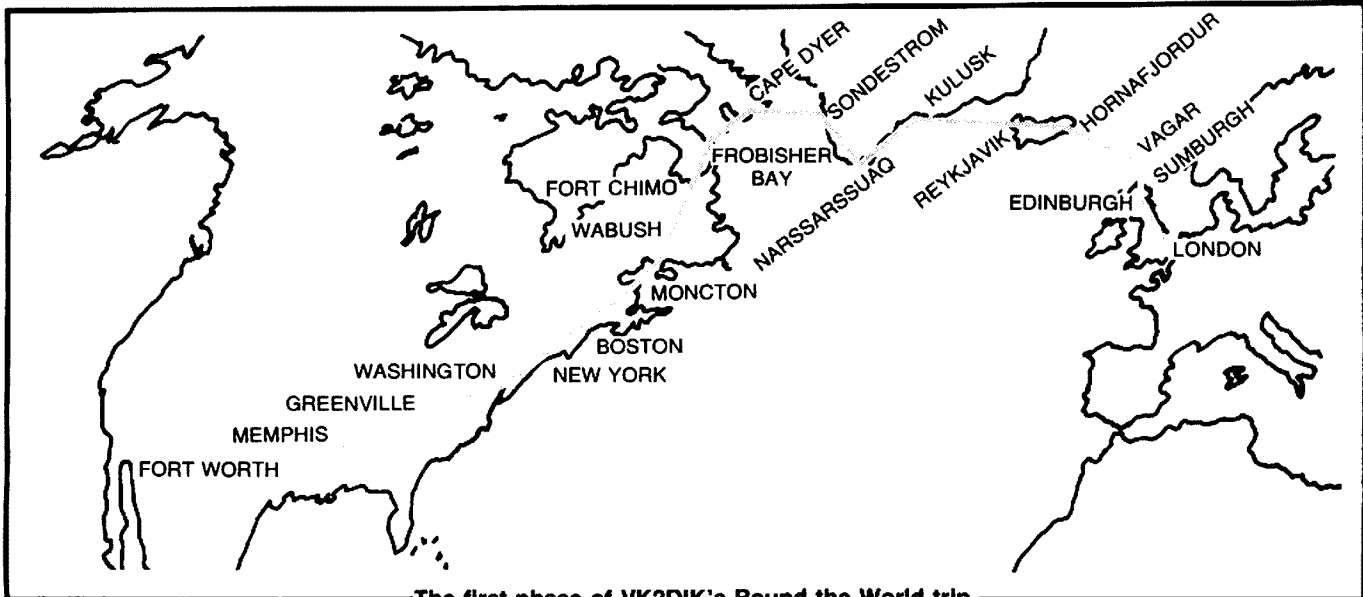
Australian Explorer' is powered by a single Allison 250-C20 gas turbine engine capable of developing 420 horse power and has been modified for and fitted with extra long range fuel tanks.

The second stage of the trip, which will be commenced after a break in England, will be back to VK through such well known cities as Rome, Muscat, Katmandu, Calcutta, Bangkok, Djarkata, and then on to Darwin. The route will then be to Katherine, Mount Isa, Charleville and on to Sydney. This leg of the trip comprises some 22,000 kilometres and means a period of some 100 hours in the air.

At the time of going to print Dick had nearly reached the half-way mark of the second stage of his Around the World Helicopter adventure.

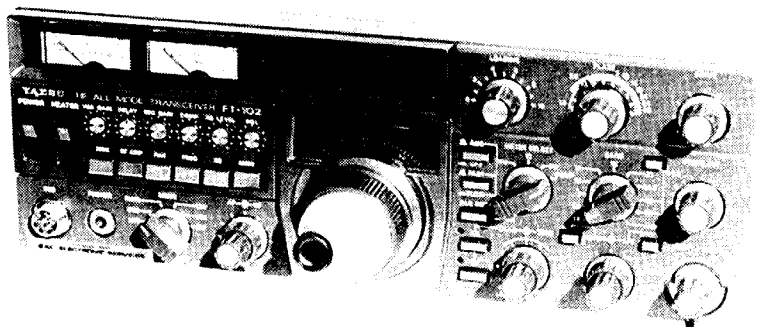
Again unforeseen happenings caused flight plan diversions and quick calculations of fuel reserves.

The longest stretch of stage two lay ahead as there are three planned flights of just under five hours which are over 13,667 islands which comprise the Indonesian Archipelago.



The first phase of VK2DIK's Round the World trip.

# THE YAESU FT-102 ALL MODE HF TRANSCEIVER



The new Yaesu FT-102 transceiver has been designed to replace the FT101Z/ZD series transceivers.

## EQUIPMENT REVIEW



phasize the long low appearance. The dual meter set up is perhaps derived from the FT-ONE and certainly a great idea. To my knowledge the only other transceivers to feature dual metering were the old Drake TR-4 series.

It seems that Yaesu have designed the 102 with several factors in mind. The first and to my mind the most important is an exceptionally clean transmitted signal. The purpose of the three 6146's in the final is not to produce 50% more output than the two 6146 transceivers, but to give about the same power with lower intermodulation distortion.

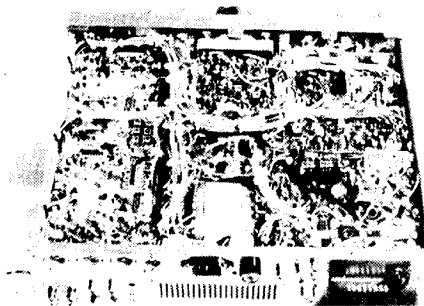
Intermodulation distortion is perhaps better known as splatter which is often a problem from strong local signals with you trying to copy a weaker signal say 10kHz up the band. In the past a typical figure claimed by amateur equipment manufacturers was -31dB for third order distortion, although the basis for this figure was usually not quoted. The new FT-102 claims better than -40dB at an output of 100W PEP. Tune up instructions tell how this may be achieved, although quite a bit more power can be obtained as we shall later see. The second design factor is to produce a clean received signal with a high immunity to front end overload and a wide dynamic range. A choice of several optional filters for CW and AM reception combined with a shift/width control and peak/notch filter complete a most comprehensive picture.

The FT-102 is an amateur band transceiver only and does not include a general coverage receive facility. In fact it could possibly be described as a conventional design if we consider how far conventional has come over the last few years. A standard VFO is used as the basis of the tuning

Ron Fisher, VK30M  
3 Fairview Ave., Glen Waverley 3150

system and not a synthesizer as in the FT-ONE. The transceiver is powered from AC mains only, with no provision for 12V DC operation.

Some of the small operating aids included in the 102, not already mentioned, are as follows: Treble and bass tone controls for the transmit audio to improve quality for those of us who don't have a DX voice. Top cut tone control for receive audio. Transmit audio monitor to check response balance when adjusting microphone tone controls and speech processor. This feature is also handy when replaying taped transmissions of other stations.



Under chassis view — the optional AM/FM unit is installed behind tuning knob.

An optional feature on the 102 is an AM/FM board which allows transmission and reception of narrow band FM and transmission of Double Sideband AM. A

The Yaesu FT-102 all mode HF transceiver has been produced to replace the FT-101Z/ZD series. After more years than most new amateurs can remember, the 101 has disappeared from the Yaesu catalogue. In addition to this, Stan Roberts of BAIL ELECTRONICS tells me that Yaesu also intends to drop the FT-107 but to continue producing the FT-902. As the new 102 has tube finals, this means that Yaesu have solid state final transceivers at the top and bottom of their range, the FT-ONE and FT-707, and two tube final rigs in the middle. Not only has the FT-102 a tube final, it also uses three tubes in parallel, but more on this later.

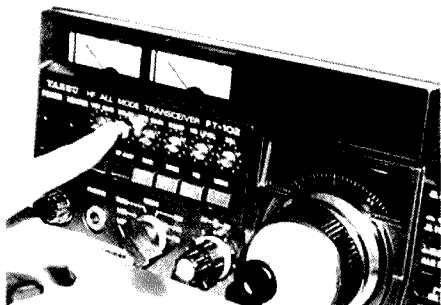
First impression of the 102 on unpacking is extremely favourable. The overall appearance is most impressive and the finish faultless. I have always been of the opinion that appearance sells more amateur transceivers than all the technical features put together. On this reasoning the FT-102 should be a winner, but to add to the appeal it has all the technical features that the most scrupulous operator would require.

### THE FT-102 TECHNICAL FEATURES.

Firstly lets look at the physical differences between the 102 and the 101Z series that it replaces. The 102 has a long low look. At 368mm it is 23mm wider than the 101Z and at the same time it is only 129mm high or 28mm lower. Depth of the 102 is 17mm less and the overall weight at 15kg is the same. The two side by side panel meters em-

front panel squelch control is a standard feature on the 102, but of course only operates when the optional FM board is added.

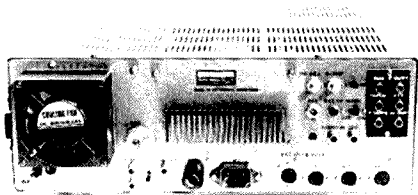
The list of optional filters includes a narrow SSB with 1.8kHz band-pass. Four filters for CW give band widths of 600, 500, 300 and 270Hz.



The six pre-set controls pop out with light finger pressure for easy adjustment.

### THE FT-102 ON THE AIR.

I must admit that this is the part of checking out new gear that I most enjoy. The 102 impresses right from the start. The knobs and controls have the right feel about them, they are well spaced out and all of the rear controls of the concentric pairs have levers extending from them for one finger operation. The six preset controls however take the prize for ingenuity. When not required for use they sit flush with the front panel. A light touch with your finger tip releases them and they pop out about 15mm, for easy use. When they are not required anymore push in and they lock back into place. Very neat!!



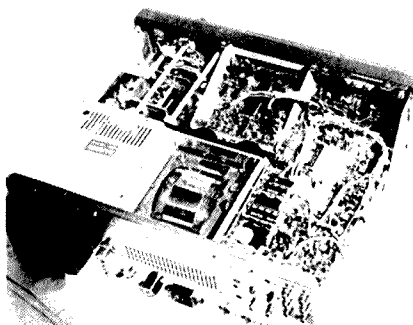
Rear panel — all connectors are easily accessible.

Getting the FT-102 operating is a quick and simple procedure. The AC power connector is one of the new three pin appliance plugs. These are very much more satisfactory than the old practise of using multi-pin, Jones type connectors.

Initial impression on switch on is excellent. The meters are brightly and clearly illuminated, the digital display is large and bright. The tuning knob has a firm but smooth feel and rotates at 18kHz per turn.

Flipping the mode switch through its various functions illuminates the excellent mode indicator next to the digital display. These are a series of small LED displays that show USB, LSB, CW-W, CW-N, AM or FM. Receive audio sounded clean and even with the built-in speaker it was of good quality. The action of the shift/width control was a little difficult to sort out (I should have read the instruction book first) but once mastered worked fairly well. In actual fact I don't think it worked as well as the shift/width

function on the FT-ONE. See the test section of this report for further comment.



Top cover removed. Digital display unit top centre.

For those of us used to valve output transmitters, tune up is quick and easy however again it pays to read Yaesu's recommendations for maximum plate current if you want to maintain a clean signal. A unique facility on the 102 is the ALC 'peak hold'. By depressing the appropriate button the ALC meter will hold up at its peak reading for about one second. This then gives a very clear indication of any over-drive condition, which is particularly important when the processor is in use. It was also noticed that correct loading of the final is important as it is possible to get spurious output on some bands with light loading. The speech processor works well and by setting the second meter at 'COMP', both compression and ALC can be monitored simultaneously. Quality reports using a Yaesu MH-1B8 microphone were excellent.

### NOISE BLANKER

With things like the infamous Woodpecker around, noise blanker operation has become an important facility to many amateurs who believed they didn't need one. In short the FT-102 blanker is just not up to the job of stopping the Russian menace. With the blanker control well advanced, it is possible to get a two or three 'S' point reduction, but at the same time the distortion produced on the wanted signal takes the readability back to where it was before.

In contrast, blanker action on noises found around the home environment was excellent. With just a touch of blanker gain, most electrical hash disappeared and no discernible cross-modulation was produced.

### ACCESSORIES FOR THE FT-102.

With the release of the 102, Yaesu have also released a full range of matching accessories. Several microphones are available including both desk and hand-held types. Some of these have scan buttons for use with the optional external scanning VFO type FV-102DM. The matching antenna coupler FC-102 has the capability of handling the output of the FL-2100Z linear. It also incorporates a watt meter with 20/200 and 1200 watt scales plus a peak hold feature to enable peak power readings.

Two external speakers are offered both having built in audio filters and one with a phone-patch coupler.

None of these accessories apart from a

hand-held microphone were supplied for test with the FT-102.

### THE FT-102 ON TEST

The following equipment was used to produce the figures that are quoted. Drake W4 watt meter. Heath SB610 monitor-scope. Daven audio power output meter. AWA F242A noise and distortion meter. AWA G230A low distortion audio oscillator.

### FREQUENCY STABILITY

As the FT-102 uses a PLL system, stability checked at one point will be the same as for any other. The VNG standard on 7.5MHz was used. From a cold start at 20°C the transceiver shifted 300 Hz over the first 20 minutes, the next ten minutes it drifted a further 100Hz and over the next one hour a further 300 Hz. While drift of this amount would go unnoticed in normal operation and is in fact within the specifications, it is more than one would expect from a state of the art transceiver.

### POWER OUTPUT

Power output was measured with full drive under CW conditions. The transmitter will operate on all bands including the new WARC bands.

|                 |                |
|-----------------|----------------|
| 1.8 150 watts   | 18.0 125 watts |
| 3.5 170 watts   | 21.0 115 watts |
| 7.0 160 watts   | 24.5 110 watts |
| 10.1 135 watts  | 28.0 110 watts |
| 14.0 135 watts. |                |

PEP output as checked on the monitor scope was essentially the same with an excellent pattern. It was also noted that power output on SSB as indicated on the power meter (not peak reading) was higher than many other transceivers for the same peak output. Many comments from stations worked also indicated excellent talk power in relation to signal strength.

### RECEIVER TESTS.

Receiver residual noise -62dBm. An excellent figure, you won't be worried with hum or hiss in your headphones.

The receiver output was terminated in 8 ohms. Maximum output 2.25 W at about 20% distortion. At 1.5W distortion was 5% and at 1 W it had dropped to 2.5%. Audio distortion did not decrease below 2.5% at lower output levels and it is suspected that most of the distortion was being produced in the product detector. The audio for this test was a 1 kHz tone produced by using the crystal calibrator.

The receiver tone control fully operational reduced a 3 kHz beat note by 10dB, and a 2kHz beat note by 7dB. Lower frequencies were unaffected. On a listening test the tone control was quite useful and certainly took the edge off noise and interference.

Both the notch and peak filters worked well. A heterodyne of any audible frequency could be reduced from an indicated S9 to S0 on the meter. The peak control only operates when in the CW mode and even with the SSB filter was able to give a single signal effect. No doubt with the optional CW filters installed, quality of CW reception would be of a high order.

# EVALUATION AND ON AIR TEST OF YAESU FT-102

Serial No. 2G010576

| CATEGORY                         | RATING | COMMENTS                                                                                                     |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------|
| <b>APPEARANCE</b>                |        |                                                                                                              |
| Packaging                        | ****   | Transceiver plastic wrapped. Foam inserts in double carton.                                                  |
| Size                             | ****   | Similar volume & same weight as previous model.                                                              |
| Weight                           | ****   | As above                                                                                                     |
| External Finish                  | *****  | Clean styling. Excellent quality knobs and fittings                                                          |
| Construction Quality             | ****   | Very well put together                                                                                       |
| <b>FRONT PANEL</b>               |        |                                                                                                              |
| Location of controls             | ****   | All very accessible. No crowding.                                                                            |
| Size of knobs                    | *****  | Best seen for some time. All concentric controls have levers.                                                |
| Labelling                        | ****   | Very clear labelling on all controls.                                                                        |
| Meter                            | *****  | Two meters, both clear and well illuminated                                                                  |
| VFO knob action                  | ****   | Smooth action                                                                                                |
| Dial readout                     |        |                                                                                                              |
| Analogue                         | ****   | 1 kHz readout. Clearly illuminated                                                                           |
| Digital                          | ****   | Bright, fairly large. Spot on accuracy                                                                       |
| Status Indicators                | ****   | Operating mode indication. LED on/off indicators for other functions.                                        |
| <b>REAR PANEL</b>                |        |                                                                                                              |
| <b>RECEIVER OPERATION</b>        |        |                                                                                                              |
| VFO stability                    | **     | See test section of text                                                                                     |
| Digital dial accuracy            | ****   | Within $\pm 50$ Hz at all times                                                                              |
| Analogue dial accuracy           | ***    | Within 1.5kHz over 500kHz                                                                                    |
| Memories                         | NA     | No memory facility included.                                                                                 |
| Sensitivity                      | ****   | Listening and comparative tests show high sensitivity.                                                       |
| RFattenuator                     | ***    | RF amp. switchable to improve dynamic range.                                                                 |
| Selectivity                      | ****   | Standard SSB filter v.good plus wide range of opt. filters.                                                  |
| Shift/width                      | **     | See test section of text.                                                                                    |
| Notch filter                     | ****   | Produces deep null                                                                                           |
| Peak filter                      | ****   | Tunable to give sharp peak at any required beat note.                                                        |
| Spurious responses               | ****   | Only audible with antenna off.                                                                               |
| 'S' meter                        | ****   | Smooth action. Realistic response.                                                                           |
| AGC performance                  | ****   | Smooth action. No pumping or distortion                                                                      |
| Signal handling                  | ****   | No trace of overload found at any time.                                                                      |
| Clarifier                        | ***    | Selectable for transmit, receiver or both.                                                                   |
| <b>NOISE BLANKER</b>             |        |                                                                                                              |
| Line noise                       | ****   | Coped well with most types of domestic noise.                                                                |
| Auto ignition                    | ****   | Most effective                                                                                               |
| Woodpecker                       | **     | Some reduction in level of certain types of pulses                                                           |
| Effect on signal                 | ***    | OK so long as blanking control not advanced too much.                                                        |
| <b>QUALITY OF RECEIVED AUDIO</b> |        |                                                                                                              |
| Internal speaker                 | ***    | Better than average for built in speakers.                                                                   |
| External speaker                 | NA     | Available as option. Not available for test                                                                  |
| Headphone output                 | ****   | Matched into standard stereo phones very well. Low internal hum & noise produced very comfortable listening. |
| Cooling fan noise                | **     | A little higher than expected                                                                                |
| Tone control                     | ***    | A very handy addition                                                                                        |
| <b>TRANSMIT OPERATION</b>        |        |                                                                                                              |
| CW & PEP output                  |        | See test section of text                                                                                     |
| Audio response                   | *****  | Adjust mic. tone controls to suit all situations.                                                            |
| Audio sensitivity                | ****   | Plenty of gain available                                                                                     |
| ALC action                       | ****   | No flat topping observed on scope even when driven hard                                                      |
| Compressor                       | ****   | Effective and easy to set up and monitor                                                                     |
| Metering                         | *****  | ALC monitoring at all times plus either of HV, IC, PO & comp.level.                                          |
| Relay noise                      | ****   | Unobtrusive                                                                                                  |
| VOX operation                    | ****   | Smooth. Control setting did not drift. Gain & delay controls on front panel.                                 |
| Cooling                          | ***    | Three final tubes ran cool at all times.                                                                     |

## RATING CODE

Poor \* Satisfactory \*\* Good \*\*\* Very Good \*\*\*\* Excellent \*\*\*\*\*

★ Our review transceiver was from BAIL ELECTRONICS of 38 Faithful Street, Wangaratta, Victoria, to whom all enquiries should be directed.



## TRANSMIT MICROPHONE TONE CONTROLS

By using the FT 102's monitor system we were able to measure the effect of these controls. It was checked at 300Hz where the response could be reduced to 15dB. At 3kHz the output was reduced to -6dB. In on air use it was found that the action of the bass control produced the greatest effect, particularly when a fair degree of processing was used. Perhaps the only control missing on the 102 is a bypass switch to revert to flat transmit audio response from the front panel.

Unfortunately an RF generator was not available at the time these tests were conducted. We were unable to measure the actual receive sensitivity or dynamic range. However side by side comparison was made with a receiver that had previously been checked as having a dynamic range of 86dB. All tests indicated that the 102 was at least equal to this and there was no reason to doubt the published specification of 90dB or better.

The internal speaker is mounted in to the top cover of the receiver. It is a 10cm diameter unit and produced quite acceptable quality with no rattles or vibrations even at high audio levels.

The action of the shift/width control did not seem as effective as the one recently checked on the FT-ONE. The band width could not be reduced lower than a top cut off of 1.8kHz. With the normal SSB filter this did give a worthwhile increase in selectivity but did not approach the 500Hz as specified.

## INSTRUCTION BOOK

I have always given Yaesu top marks for their instruction books and this one is no exception. It is in fact not one but two volumes, the second being a sixteen page parts list. The fifty six pages of the main book are crammed with information. Sections include: *General description, specifications, description of front and rear panel controls, switches and connectors, interconnection of the FT-102 with ancillary gear, transceiver installation and microphone information, transceiver operation including use of shift/width controls, circuit description of the receiver section, transmitter section and common circuits.* This section is very well written and contains essential information for the new owner.

Eleven pages are devoted to maintenance and alignment with clear photographs showing all points of adjustment. Circuits cover several pages plus two large lift outs. Perhaps the only thing not provided are circuit board layouts. In addition to all of this, I hear that a full scale workshop manual will soon be available as an optional extra.

## CONCLUSION

There is not doubt that the FT-102 has a lot to offer the keen operator who does not require a general coverage receive facility. (and many of us don't). As long as you take careful note of the tune-up facilities, the clean transmitted signal will keep you on friendly terms with your close amateur friends. all the transceiver controls have the feel of excellent engineering and most functions operate as they should. The FT-102 is highly recommended.

## ZEDD EXPLAINS MEANING OF LIFE TO THE BOYS

Some of the boys were sitting around the club shack the other day, warming their feet on the power supply for the TS-120 and talking about late wintry bluster and how it would likely affect DX come summer, when WHANG! (not to be confused with Wang, the computer people), the door flies open, and into the shack with a few late snowflakes and some of last year's Johnson grass comes the great Q.R. Zedd himself.

"Howdy, boys," says Zedd, turning down the volume on the TR7 he has attached to his Elton John tee shirt with velcro tape, "how's DX?"

Well, at that, naturally nobody said a word, because having the great Q.R. Zedd ask you how DX is, is a little like having Bill Banowski ask you if you have any good ideas for raising money. W5MCN sort of looked off in the general direction of the 2-metre rig, and W5SQJ got so flustered he spat his Juicy Fruit instead of his chewing tobacco into his plastic cup, but other than that there was silence and obvious deep respect. WA5MLT, joining club members for his semi-annual visit, cleared his throat: WA5RPP, intrepid club reporter, leaped to his Big Chief tablet; N5DWN opened her portable filing cabinet to get out her latest 312QSL cards. But no one spoke.

Suddenly and without warning, Zedd, pricking his ears, leaped to the club 120, advanced the AF gain, and thumbed the keyer. A burst of CW at about 80 WPM boiled into the ether. Zedd listened to what sounded like QRN and possibly a berserk Cuisinart to the rest of us, nodded, sent a couple of R's, a 73, an SK and his call sign, and leaned back from the rig.

"My pal Rhandi in VU-land," Zedd explained. "I waited to make sure no one else in the room wanted to work him, but I didn't want him calling CQ indefinitely. I hope nobody minds."

"No one else heard him," said AF5X, "except the two real CW operators on the premises, Q.R. — you and me."

"Well," said Zedd modestly, stuffing shag tobacco and shredded DXCC stickers into his ancient clay pipe, "that only illustrates what I have often tried to tell novice DXers — you know, guys with fewer than 350 countries. Half of working the rarer ones is in good listening. Listen, listen, listen! And don't talk so dad-blamed much. If I have said it once I have said it a thousand times, you shouldn't talk all the time, you should listen. Even if you are not going for DX but only engaging in casual conversation, in my opinion it is only good manners to keep your mouth shut and your ears open. Remember the old saying, little pitchers have big ears, and that goes for the great ones like Johnny Said, too. Silence is golden. You show me a man who talks too much and I will show you a loser. It's like I was telling Tondelayo the other evening, any fool can get in there and talk a person's leg off, but it

is a mark of greatness to be succinct and still make the contacts. Are there any questions so far?"

"Q.R.," said W5OU, who had just arrived, "I think all of us would truly appreciate it if you would tell us what you think lies ahead for amateur radio."

"Yes," said KC5CU, "and while you are at it, if you could tell us the meaning of life, some of us younger boys would sincerely appreciate that, too."

"What I think lies ahead for amateur radio is a decline in the sunspot cycle and a rise in the cost of equipment," Zedd said briskly. "As to the meaning of life, I will tell you a little story that I think illustrates my view on this matter."

"It was in 1969, I think," Zedd resumed, "when I made my one-man Dx-pedition to Africa, that I learned the meaning of life. I landed in Kenya about 2 a.m. on a beastly hot day, don't you know, and immediately began setting up my tent, antenna farm, and so on, working single-handed except for the meagre help offered by 29 native beaters, three technicians from RCA and the crew I had hired from the Yasme Foundation. Well, as you can imagine, we were all pretty tired by the time we were ready to start operating about four hours later, and everyone went off to bed except me. I jumped right onto seventy-five and gave my name a couple of times, along with my call, and got a right nice pileup going.

"I was working 'em right along just as dawn came, and I heard a small sound beside me. Yelling for everybody to QRX (which is DXer's lingo for 'Everybody else shut up and let the 4s call incessantly by themselves for a while'), I turned and stared straight into the eyes of a huge male lion. At about the same time, he let out a blood-curdling roar, showed me about 300 sharp teeth, and enveloped me in the nastiest cast of zebra-breath it has ever been my misfortune to encounter.

"Obviously Mr. Lion was hungry, and obviously he figured I was going to be his next meal. I had to think fast. So what I did was shove the microphone into his face.

"Well, boys, you may not believe it, but Mr. Lion took one look at the microphone, let out another terrible shriek, and turned and ran out of there just as fast as he could go.

"And we never saw him again."

"Just about the worst case of mike fright I ever saw for myself."

Zedd sighed and puffed his latakia. "Which led me to the insight I have since carried close to my heart about the meaning of life for any DXer. And that is this. When in doubt, grab for the mike; and never be concerned about lion."

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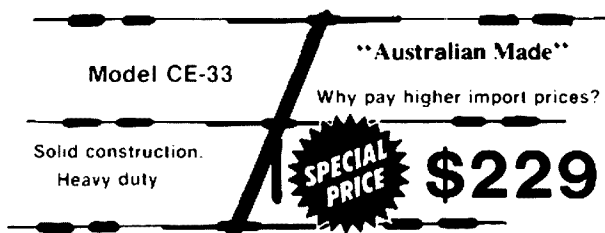
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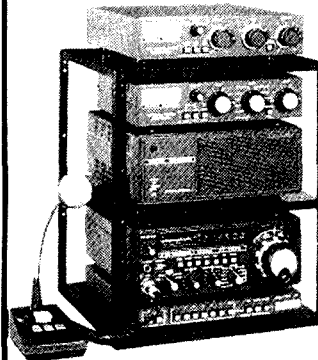
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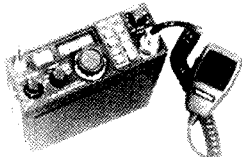
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VK7 — Mr. Ivan Ling, VK7XL.

Harro, DJ6RB/VK2DKD, the VK specialist, told me that this gathering was equalling the Dayton Convention in USA and after seeing it I would support this statement.

This year's Convention was, as for many years held at Friedrichshaven on the German Bank of the Bodensee, which I would call Lake Constance.

## WHY AT THE EXTREME SOUTH OF GERMANY?

After WW II the Conventions, Deutschland Treffen, were sponsored by Volkswagen, at their home town of Wolfsburg, for many years. At the same time the revival of a pre-war gathering, unofficial and personal, was held on a small island, Reichnau, on Lake Constance, for some 12 years until accommodation became a problem and a move was made to Constance about 1962. Volkswagen sponsorship had lapsed and the 1962 Convention was called the International Bodensee Treffen with some 2000 persons attending.

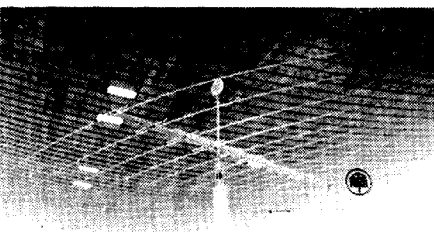


General view of half the hall.

In 1976 the move was made to Friedrichshaven under the banner of HAM RADIO 1976, also "The International Amateur Convention". At this time the social side of the convention was held on two ships in the harbour with a fireworks display.

In 1972 a convention held at Wolfsburg near the centre of Germany was not successful.

The increasing popularity of Friedrichshaven on the border areas of several countries may be attributed to the desire of Germans to holiday in the southern border areas in summer and to have a greater dealer activity there.



Log Periodic.

The present site is a big convention area with two adjacent main buildings and a more remote concert hall. One of the two main buildings, the larger, housed the commercial part and you may note that there was ample headroom to erect towers with TH6 size and larger log periodic beams.

There were vast parking areas, which appeared to be filled, and all lawns and open spaces were occupied with everything from pup tents to luxury caravans by those "living in".

Entry fees were a little over our 3 dollars for 3 days or just under 2 dollars for one day ... 9 am to 6 pm. Groups of 20 were given concessions.

DARC had many stands and together with one hundred commercial organisations filled the hall and overflowed outside. Rather than comment on equipment which generally should be available in Australia at a better price I will comment on stands. Two of the three best known Japanese manufacturers had at least three Japanese on their stall and I was told that they really knew their homework as distinct from other local reps.

Distinctive yellow brochure bags, as well as "T" shirts, gave one brand good publicity.

DARC had a big stand relating to Education of which they place much importance and there I found the best of the English speakers. YLs and XYLs were catered for adjacent to an information stand which was of little value to us because of language problems.

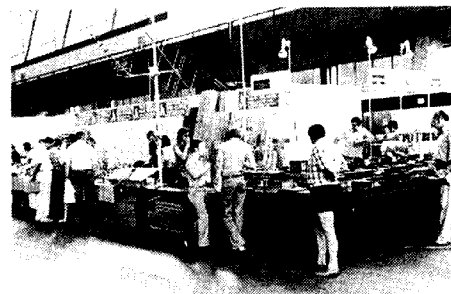
Great emphasis was placed on retaining the interest of SWLs and not only was their group represented but a modern morse tutor was available. Bundepest issues a license after SWLs pass a test on procedures and regulations.

Satellite group, Certificate Hunters, QSL, Novice all had DARC stands.

Amateur TV, AGAF, which seemed to have an American background had a comparatively large, and well set up stand but relatively low interest. Similarly the DARC Amsat stand was very quiet. Two commercial firms dealt with weather satellites as apparently private plane operators, etc. like first hand weather information. One of these firms headed by Terry Bitten, an Englishman, located at Baiersdorf, north of Nurnberg, is well known to subscribers of the "VHF" quarterly magazine. A staff of six were busy on this stand.

The German Bundepest, (Post Office) had a large stand with equipment to test morse speeds and I was told was issuing guest licenses to border nationals on the spot.

European products were predominantly in the VHF, UHF line, antennas, pre-amps, PAs, and adjuncts to brand units. Handheld VHF, UHF units were commonplace.



VHF Stand.

Generally speaking there was a greater range of equipment than I would expect to see in Australia but we do not miss much. There were quite a few stands making up callsign tags, "T" shirts etc. and doing very big business.

One stall of particular interest contained some dozen "computers" all being operated by enthusiasts and I will be surprised if that firm does not do well.

Dealers selling whatever you can imagine in the radio line made up the bulk of the stands, about 100 in all. One item outside the main hall was a 25 metre extensible hydraulic mast on trailer which "travels the world".

Up until now I thought that I had seen the show until I moved into the second hall where amateurs sold their surplus equipment. This was an amazing sight ... a huge hall crammed to capacity with amateurs and their surplus equipment ... there must have been 400 tables with OMs and XYLs in attendance ... a seething mass.

Apparently one pays about four Australian dollars for space, if you can find any, and away you go selling. You name the item and it was there, somewhere. I wondered how all this equipment, apart from the main hall, could be got away from the site ... a major exercise.

During the weekend there were 2 metre, 70 cm and 80 metre mobile contests, fox-hunts and incoming and homegoing contests. There was a well set-up meeting hall where, when I looked in, 25 Clubs were deliberating on their problems.

The site was complete with plenty of restaurant and food stalls, manned kindergarten, ambulance station, where an OM was being treated, and a Post Office.

During the Saturday that I visited the temperature was well over 30°C, and dress ranged from that of Surfers Paradise to Port Philip. That night was the big social night but I unfortunately had to return to Zurich.

Thanks to Harro DJ6RB/VK2DKD for his help with historical details.

The attendance would be between ten and twelve thousand, which makes it quite a big show.

# 144 MHz Propagation Darwin - Japan

Graham Baker, VK8GB  
74 Byrne Circuit, Moll, NT. 5792

Propagation of 144 MHz amateur signals over the path between Darwin and Southern Japan has been observed for some years now. This paper summarizes results and provides statistical details of contacts made.

## HISTORY

Propagation experiments between Darwin and Southern Japan were conducted by Government organizations on various frequencies up to 102 MHz in the 1960's and 70's. These proved that VHF propagation existed regularly on the path and it was suggested by Roger Harrison in his series of articles on trans-equatorial propagation that it was probable that communications could be established at 144 MHz.

When reports of amateur signals being heard over similar paths in South/Central America on Oscar uplink frequencies appeared in 1977 I began to watch 144 MHz regularly.

The first observation of JAVK propagation on 144 MHz was on 27 October 1977. Following this regular schedules with stations in Southern Japan were set up and on 24 February 1978 two way contact was established with JH6TEW.

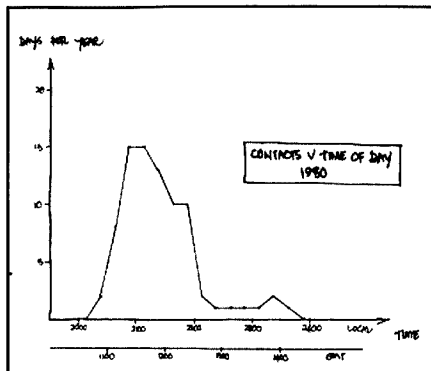


Figure 2

## DAILY OCCURRENCE TIMES

The times at which signals propagate between Darwin and Japan are in the mid to late evening.

The graph at Figure 2 shows the local

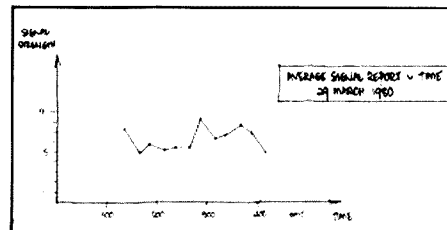


Figure 3

1403 UTC.

The numerical average of the signal report received averaged over each quarter hour is plotted against time.

On this night 6 reports of 59<sup>+</sup> and 8 reports of 59 were received.

## EQUIPMENT USED

The equipment at VK8GB was a Yaesu FT101E + FTV250 running about 15W to a Hy gain 214 14 element yagi.

The equipment used by Japanese amateurs was invariably a low power multimode transceiver but the antennas varied from ground planes to 8 x 11 el yagi arrays.

## GEOGRAPHIC SPREAD OF SIGNALS RECEIVED

Contacts established with amateur stations in Japan on 144 MHz were limited to Western Japan in the following prefectures.

|           |         |           |
|-----------|---------|-----------|
| Hyogo     | Kagawa  | Nagasaki  |
| Okayama   | Ehime   | Kumamoto  |
| Shimane   | Kochi   | Oita      |
| Yamaguchi | Fukuoka | Miyazaki  |
| Hiroshima | Saga    | Kagoshima |

These are shown in Figure 4

Because of the high density of amateur stations in Japan the eastern limit is very well defined. Repeated attempts to establish contact with stations in Korea and Guam were unsuccessful and no stations in Japan further south than the bottom of Kyushu Island have been heard.

## RELATIONSHIP TO THE GEOMAGNETIC EQUATOR

The relationship of Darwin to the areas to which 144 MHz propagation has been established in Japan are shown in relation to the Geomagnetic equator in Figure 5.

The relationship of equidistance and perpendicular crossing are easily seen.

## DISCUSSION OF STATISTICAL BASE

The statistical base for the graphs produced is my own log book. This produces

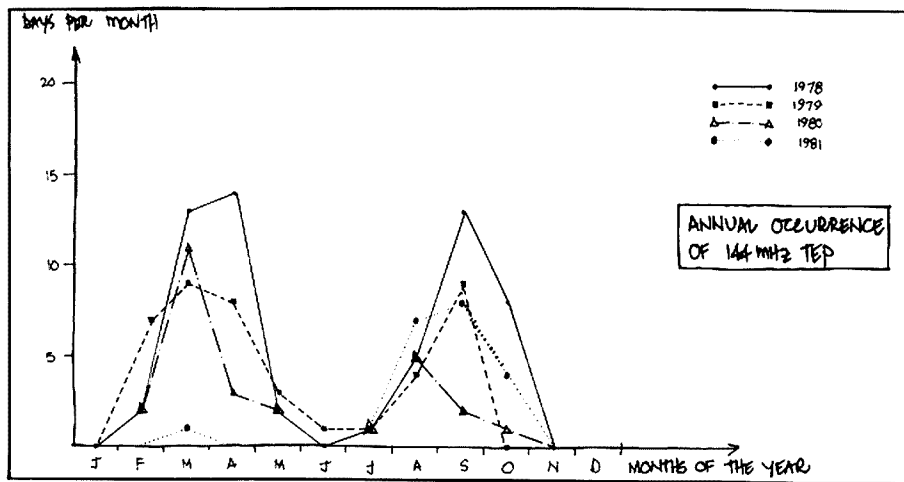


Figure 1

## ANNUAL VARIATIONS

The occurrence of propagation on the 144 MHz path Darwin to Southern Japan peaks around the equinoxes. Figure 1 shows openings in days per month for the years 1978 to 1981.

Contacts totalling 1184 were made with stations in Southern Japan during the four year period.

The peak occurrence rate at March and September of each year can be clearly seen.

time against the number of days contacts were made in the particular quarter hour for the year 1980. A total of 273 contacts were made in 27 days during the year.

## VARIATIONS IN SIGNAL STRENGTH

Signal levels rise very sharply at the beginning of an opening and fall slowly thereafter.

The graph at Figure 3 plots signal reports received against time for the best opening experienced. This occurred on 29 March 1980 when contacts were established with 73 different stations between 1113 and

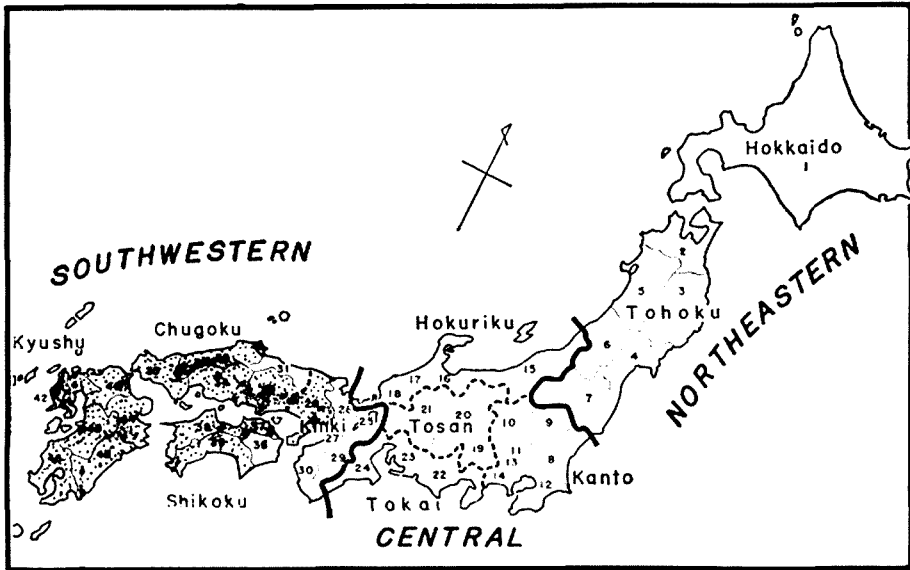


Figure 4. Geographic Spread of Signals.

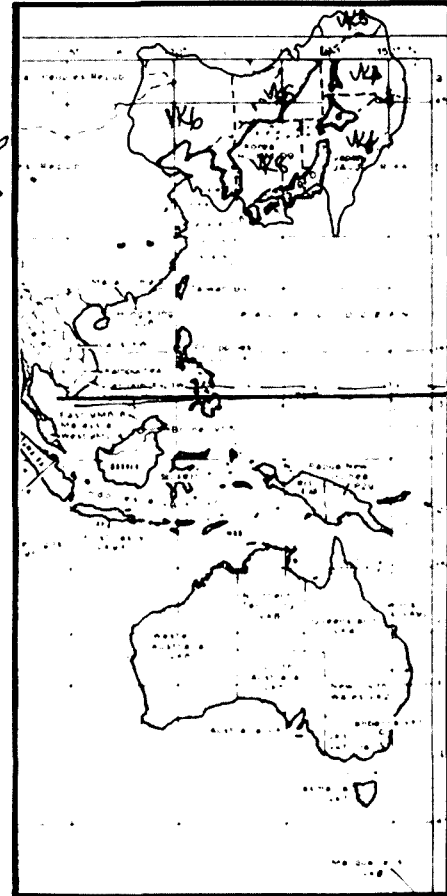


Figure 6. Possible Propagation from other parts of Australia.

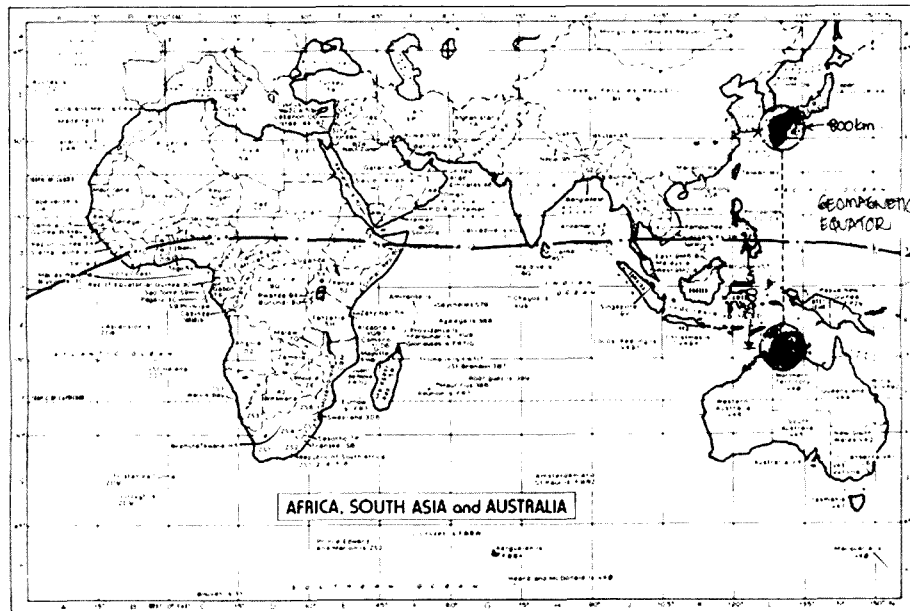


Figure 5. Relationship to the Geo-magnetic Equator.

- |                               |                                  |
|-------------------------------|----------------------------------|
| Wyndham (VK6)                 | to HL                            |
| Groote Eylandt and Gove (VK8) | to JA1, 2, 3                     |
| Mt. Isa (VK4)                 | to JA7                           |
| Birdsville (VK4)              | to JA8                           |
| Alice-Springs (VK8)           | to UA0 Vladivostok               |
| Adelaide (VK5)                | to UA0 Khabarovsk and Komsomolsk |

**CONCLUSION**

This paper attempts to present in a short form information requested of me by interested amateurs of 144 MHz propagation I have experienced in Darwin.

A second paper on VHF propagation on both 50 and 144 MHz with a limited theoretical appreciation will follow.

many inaccuracies, in that periods when I was absent from Darwin on leave or days when I had other personal commitments which prevented me from operating are not taken into account. The poor performance in autumn 1981 reflects these factors.

**FURTHER AREAS OF INVESTIGATION**

**1. HIGHER FREQUENCIES**

For the last three years I have been conducting ad hoc tests on 432 MHz with JA stations when signals on 144 MHz have been strong. No reports of signals propagating have been received although 144 MHz signals at the time have been up to 59+ 20dB.

It is of interest to compare this result with the 432 MHz propagation occurring in the

South Africa/Europe path where 144 MHz signals seldom exceed strength 5 and are not copyable using the SSB mode.

I should add that 95% of my contacts with Japan have been using SSB although CW and FM have also been used successfully.

With regard to 432 MHz propagation it is probable that the 10W power level used at both ends of the circuit is too low to overcome the path loss.

**2. OTHER PARTS OF AUSTRALIA**

By rotating Australia on a map about the geomagnetic equator the map at Figure 6 is produced.

From this I deduce that it is possible to establish 144 MHz propagation between the following areas in Australia and places in or near Japan.

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# TS-180S Speech Unit

R. A. Catmur VK5FY

142 Woodford Road, Elizabeth North 5113

The TS-180S Speech Unit has been developed to produce an aural readout of the transceiver display indicators. Its primary purpose is for use by amateurs who are unable to read the visual display. It forms an interesting comparison with the device recently described by VK7PH for use with the IC701.

The unit utilizes a Speech Synthesiser board type S2S produced by Telesensory Systems Inc. for calculator applications. It has a 24 word vocabulary, of which this unit uses 13 — numerals 0-9, MINUS, POINT and SILENCE (no sound emitted).

Functions provided are single or repetitive readout of the display, together with a "kHz" switch which inhibits the readout of MHz x 10, and MHz x 1 indicators. A pause period has been introduced between the end of the last digit readout and re-commencement of the readings. All 9 indicators can be read, thus the "DSP/DIFF" and "DSP/M1" functions of the transceiver are catered for.

No electrical or mechanical modifications to the transceiver are required, merely the connection of 14 wires to the outputs of the Display Board X60-1090-00 located in the Counter Unit.

## OPERATION

Fig. 1 is a block schematic of the unit. The TS-180S display is 7 segment multiplexed, and is strobed from right to left — the opposite direction to that required for an aural readout. A complete visual display readout takes approximately 0.1 second.

The 7 segment information is applied to the ROM inputs and is converted to a hexadecimal code for presentation to the data inputs of the Speech Synthesiser.

The BCD Multiplex Strobe code, together with the decimal point strobe line, are firstly buffered and then integrated to reduce, or eliminate, switching spikes or "glitches" present on the signals.

Fig. 2 shows the BCD Multiplex Strobe code and the decimal point strobes and their relationship to the indicators. Strobe 0 is fed via the control circuit to the frame counter. (A frame being one complete readout cycle of the indicators.) The

output of the frame counter is then decoded, and the individual decimal outputs are then combined with selected outputs of the strobe decoder. Frame 1 plus strobe 8 produce a speech start pulse, then follow frame 2 plus strobe 7, frame 3 plus strobe 6, and so on until frame 9 plus strobe 0 occurs, when, after the readout of the 100 Hz indicator a pause monostable operates adding a delay of approximately 0.4 seconds before any further readout can commence. After the pause period the frame counter will step to 0, and if the manual start switch is OFF the control circuit will inhibit the input to the frame counter and the readouts will cease (auto-

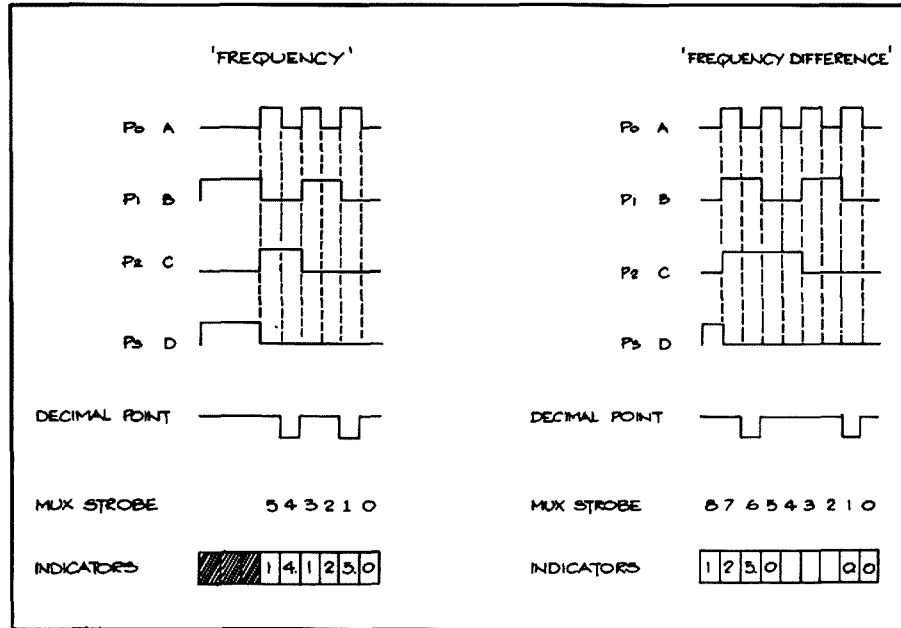


FIG. 2: TS-180S Multiplex Code

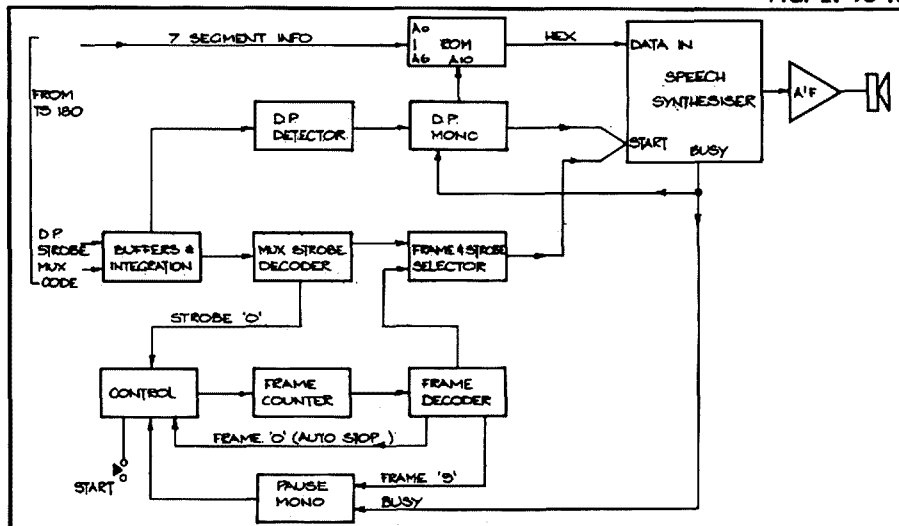


FIG. 1: Schematic

stop function).

The speech start pulse derived from the combination of frame plus strobe signals causes the Speech Synthesiser to read the hex data present at that instant. A "busy" signal is then generated by the Synthesiser and applied to the control circuit, halting any further progression of the frame counter. After the readout has been completed, "busy" returns to normal, and the next strobe 0 signal will advance the counter one count, and a readout of the next indicator will commence.

A decimal point strobe occurs simultaneously with a particular indicator strobe. Thus when indicator strobe 1 is generated (referring to the kHz x 1 indicator) a DP strobe is also present. The DP detector senses the DP strobe, and primes the DP monostable so that it can trigger immediately the "busy" signal returns to normal after the kHz x 1 readout. When this



occurs, the DP monostable triggers, and applies a signal to ROM Address A10 which immediately presents the hex code for "POINT" to the Speech Synthesiser. The DP mono pulse also initiates the Synthesiser start circuit and the word "POINT" is generated.

**CIRCUIT DESCRIPTION**

**TS-180S Signals**

The following services are used from the display board within the transceiver:—  
**7 Segment Code (7 connections)**  
 The 7 segment code derived from Q20 in the display unit is in a negated form — that is, a particular segment to be illuminated requires a low level (0V).

**BCD Multiplex Strobe Code (4 connections)**

BCD multiplex strobe code (shown in Fig. 2) is in a standard BCD form except it is generated backwards — that is the count proceeds from right to left when observed on an oscilloscope. The code counts to 5 when reading "Frequency", and 8 when in the "DSP/DIFF" function.

**NOTE:** The multiplex code and the 7 segment Identification designations on the board X60-1090-00 are reversed. Segment A is G and so on, and P0-P3 are actually P3-P0. The circuit diagram in the service manual is correct. The reversals have been corrected in the wiring out harness to the speech unit.

**Decimal Point Strobe (1 connection)**

As for the 7 segment code, the DP strobes are negated — a low (0V) level to illuminate, they occur simultaneously with the particular indicator strobe.

**0 and +5 Volts (2 connections)**

From the TS-180S — 0V line is commoned to the speech unit 0V line, whilst the +5V is used to power the first integrated circuit (hex inverter 74C04) — this prevents a current flow from the inputs of the inverters into the +5 rail when the speech unit is in the OFF condition. (Current flow via input protective diodes.) The outputs of

the first inverters are fed via 56k integrating resistors, thus restricting the possible current flow into the following circuits when OFF. Thus the outputs of the TS-180S IC Q20 are protected.

**Speech Unit**

**POWER SUPPLY (See Fig. 3).**

The speech unit requires the following voltage rails for its operation:—

- (a) +18V unregulated to the A/F amplifier.
- (b) +5V to all ICs and the Speech Synthesiser.
- (c) —10V to the Speech Synthesiser.

These supplies are derived from a multi-tapped transformer type AR2155.

The 12.5V AC is half wave rectified and smoothed, giving +18.5V. The 9.5V AC is half wave rectified and smoothed, the resultant —14V then passes to a 7905, a —5V regulator which has its 0V terminal connected to a —ve potential such that —10V appears at its output. The 7.5V AC is rectified and smoothed giving +9.6V which passes to a 7805 +5V regulator.

**7 SEGMENT/HEX CONVERTER AND SPEECH OUTPUT (Fig. 4).**

A 2716 EPROM IC14 has been programmed to accept the 7 segment code and convert it to a hex code to drive the Speech Synthesiser board TS1-S2S. Address inputs A6 to A0 are used for this; A10 when addressed generates hex 13, data for the

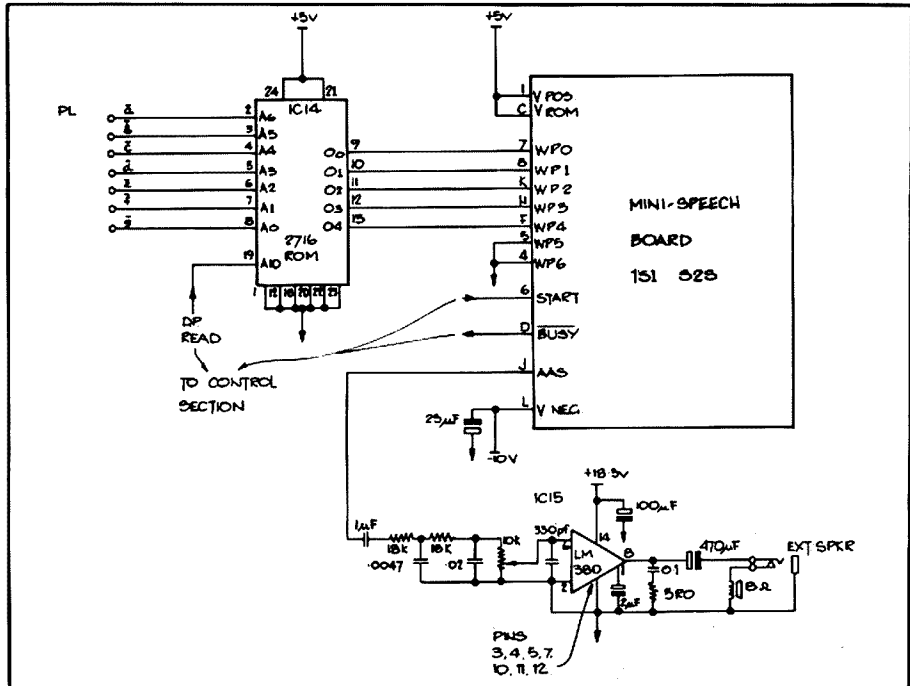


FIG. 4: Seven Segment — Hex Converter and Speech Output

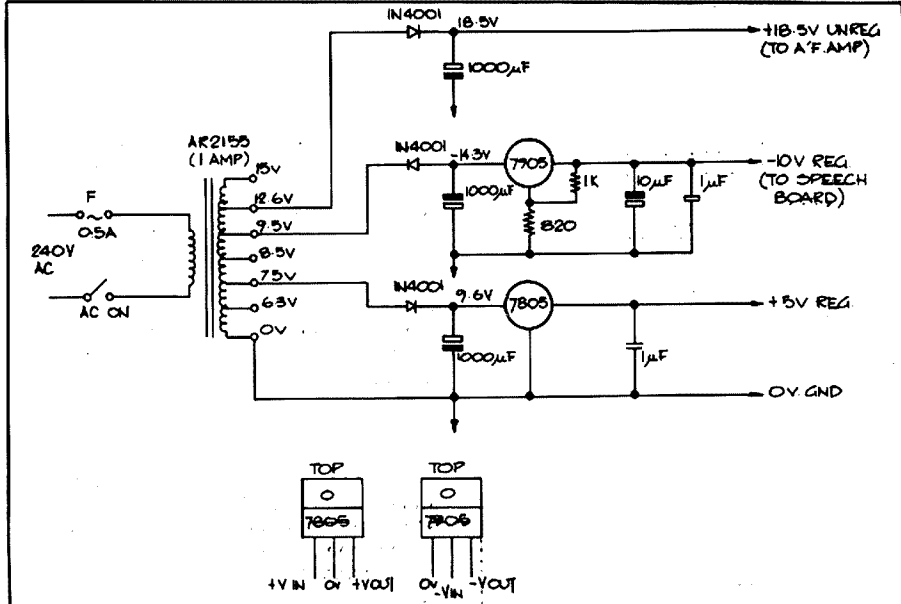


FIG. 3: Power Supply

word "POINT".

Any invalid codes at the input to IC14 produce hex OD data for "SILENCE". The outputs of IC14 (00-04) pass to WP0-WP4 on the S2S board. WP5 and 6 are not used and are grounded.

The "START" input and "BUSY" output of the Speech Synthesiser, and the decimal point input to IC14 are connected to the speech unit circuit, to be described later.

The "AAS" output of the Synthesiser is the synthesised voice output, which passes via a simple low-pass filter to the A/F amplifier LM380 IC15. Provision has been made for the connection of an external speaker if desired.

**ROM CONVERSION INFORMATION.**

7 segment = hex input which gives hex output = word.

|   |    |    |       |
|---|----|----|-------|
| 0 | 01 | 00 | OH    |
| 1 | 4F | 01 | ONE   |
| 2 | 12 | 02 | TWO   |
| 3 | 06 | 03 | THREE |
| 4 | 4C | 04 | FOUR  |
| 5 | 24 | 05 | FIVE  |

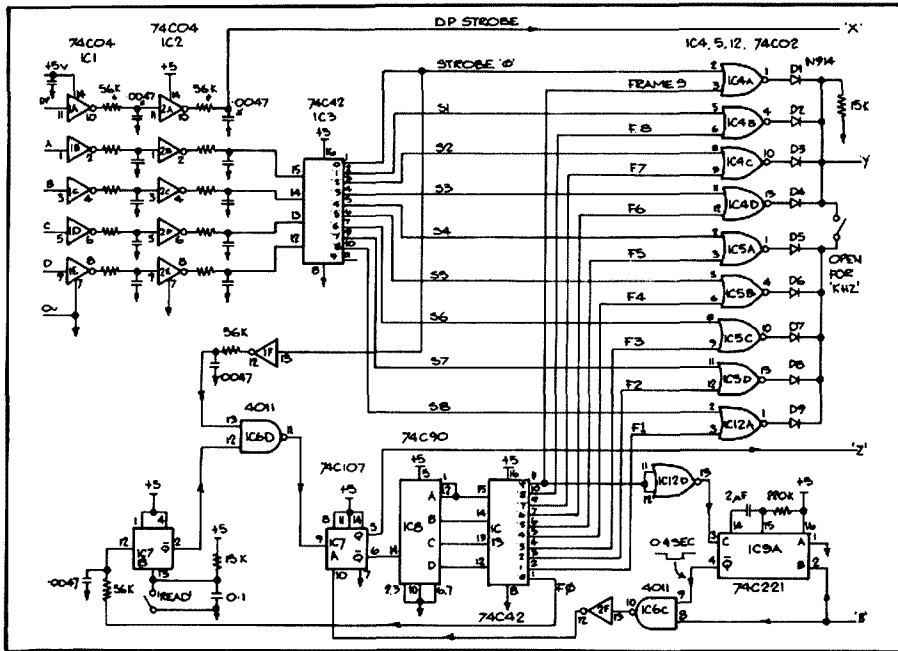
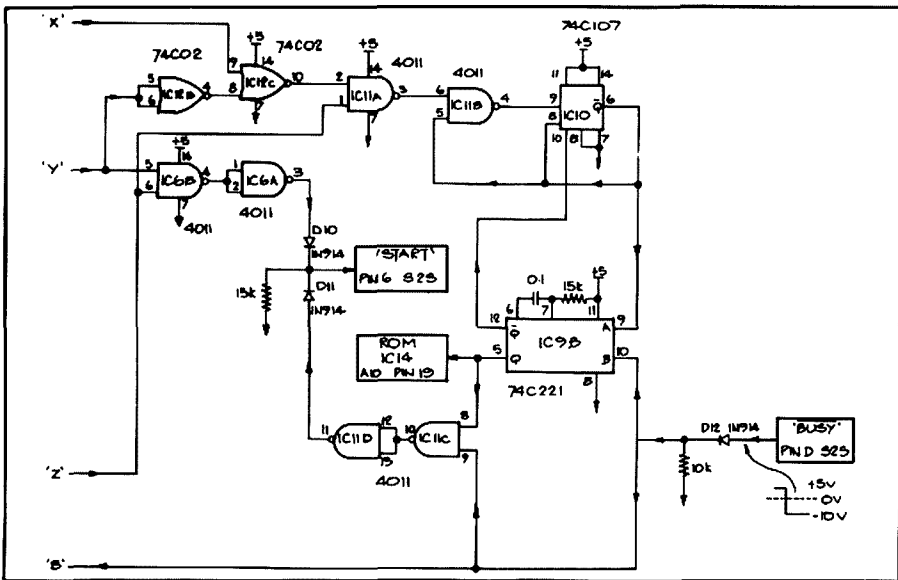


FIG. 5A: Above

FIG. 5B: Below



|           |            |    |       |
|-----------|------------|----|-------|
| 6         | 20         | 06 | SIX   |
| 7         | 00*        | 07 | SEVEN |
| 8         | 00         | 08 | EIGHT |
| 9         | 04         | 09 | NINE  |
| -ve       | 7E         | 15 | MINUS |
| "SILENCE" | 7F         | 0D | —     |
| "POINT"   | 400 to 7F0 | 13 | POINT |

ROM address inputs: A6 = a to A0 = g; A10 = Point.

ROM Outputs: 00 = LSB, 04 = MSB.

\* The TS-180S display uses segments a, b, c and f for "7".

**SPEECH UNIT CIRCUIT (Figs. 5 and 5A).**

IC1 and IC2 (74C04) are hex inverter buffers of which 5 sections are used to buffer and integrate the multiplex code and decimal point strobe lines. IC1 derives its +5V rail from the transceiver supply. The multiplex code lines A, B, C and D pass to IC3 (74C42) where they are de-

coded. The DP strobe passes to IC12C. Strobe outputs 0 to 8 are connected to NOR gates IC4, 5 and 12 (74C02). Strobe 0 is inverted by IC1F, integrated, and fed to NAND gate IC6D (4011). This gate is controlled by the manual start Flip-Flop IC7B (74C107). When the "READ" switch is closed, Q goes high, which opens gate IC6D, allowing the strobe 0 pulses to pass to the clock input of IC7A. Providing a low "busy" signal is not present at pin 10 ("clear"), IC7A Q will fall from high to low causing the frame counter IC8 (74C90) to advance one count. At the same time IC7A Q will go high, which opens NAND gates IC6B and IC11A.

The outputs of the frame counter IC8 are decoded by IC13 (74C42), and the decimal outputs of the decoder pass to the NOR gates IC4, 5 and 12, where each frame signal combines with an individual

strobe. Upon a manual start being initiated, the frame counter will advance to a count of 1, the decoded 1 falls low, and this appears at pin 3 of IC12A NOR gate. As the individual strobes are occurring continually, there comes a point where pin 2 of IC12A goes low from strobe 8, the output of IC12A will then go high, diode D9 conducts, and if the "kHz" switch is closed, this positive signal will pass to NAND gate IC6B, which was opened by IC7A prior to the counter advancing. The output of IC6B falls low, is inverted by IC6A, and the resultant positive step passes via diode D10 to the Speech Synthesiser start input. The Speech Synthesiser now reads out the numeral present on indicator 9 (left hand of display). The "busy" signal falls from +5 to -10 volts, D12 in combination with the 10k resistor prevent the speech unit "busy" line from falling below 0V. The "busy" signal passes to IC9A (pause mono) and via NAND gate IC6C to the inverter IC2F. The resultant low passes to the "clear" input of IC7A, which causes Q to go high and Q to fall. Q falling, closes gate IC6B and thus prevents any more start pulses or glitches from appearing at the Speech Synthesiser start input. Whilst IC7A is held in the "clear" state by the "busy" signal, strobe 0 pulses appearing at its input have no effect.

When the "busy" signal returns to +5V after the readout is completed, the "clear" of IC7A is removed, the next strobe 0 pulse appearing at its clock input causes its Q output to fall, and the frame counter advances to 2. A new start pulse is generated when strobe 7 occurs, and indicator 8 is read. Thus the sequence continues until the last indicator is read. Since the frame counter is now at 9, the low level at pin 11 of IC13 is inverted to a high level by IC12D and applied to pin 13 of IC9A, removing the "clear" signal. When the "busy" signal returns to +5 volts after the readout of the 100 Hz indicator, it triggers IC9A, its O output goes low for about 0.4 seconds. This passes via gate IC6C and inverter IC2F to IC7A, and holds IC7A in the clear state for this pause period, after which IC7A passes the next strobe 0 pulse to IC8. The frame counter now advances to 0, and the low signal on pin 1 of IC13 clocks IC7B (if the "READ" switch is open). IC7B Q goes low, closing gate IC6D, preventing any strobe 0 pulses from reaching IC7A. The readouts now cease.

When the "kHz" switch is open, only strobes S3 to S0 can initiate a readout, representing indicators 4, 3, 2 and 1. Thus only the kHz and 0.1 kHz indicators will be read.

**DECIMAL POINT READOUT.**

During each strobed start pulse the output of inverter IC12B will be low, and if a DP strobe is present pin 9 of IC12C (NOR gate) will also be low. IC12C output will go high, and pass via NAND gates IC11A and IC11B to the clock input of IC10. As described earlier, when the "busy" signal goes low, IC7A is "cleared", and its Q output will go low, which closes NAND gate

# Choosing a Computer

from "ARNS Bulletin", Sept. '81

**Choosing a computer is somewhat like choosing a car. There are so many different varieties and makes that it boggles the mind when looking for one. Like cars, it depends a great deal on what is expected in performance along with speed, ease of operation and such.**

Some computers work with colour, others black and white. If you are interested in games, colour might be the route. If you are interested in business use, such as word processing, address lists, etc., it is well to stick with black and white. If you will note carefully, the number of words to the line on colour computers is less than black and white. This is apparently because it is not possible to get the resolution for small letters with colour. There is a unit being sold for use with your own TV, colour or black. It has a whole 12 letters to the line, which would be useless for word processing. Another such unit has only 24 letters to the line. So, the number of words to the line are important. Black and white is undoubtedly the choice for any business use. After all, have you ever heard of a colour screen on business machine costing thousands of dollars? No, because black and white is better. On the other hand if you are looking for games, colour is fine. You might be able to find a suitable computer half way in between.

Probably the most important feature of any computer is the support in programmes. Without programmes available it is like buying a car and finding out there are no filling stations! Or with some computers which have limited programmes available, like buying a car which uses diesel and you can find only a few stations selling it. The greatest number of programmes available at this date are for the Radio Shack computers, with Apple second. The rest are way down the line. Apple apparently is creeping up on Radio Shack though and in a couple of years might be even. Next in importance is publications available. There are now perhaps a dozen magazines catering exclusively to the Radio Shack computers. These contain programmes, and in many cases you can subscribe to a tape or disk service, receiving the listed programmes in the magazine ready to run without the necessity of copying them from the page (which is very, very difficult — a computer won't let you get by with a single error).

Another consideration is storage, first in the computer itself and second in the storage medium such as tapes and disks. Internal storage is important for the long programmes or articles. The usual starter is 16k and most can be purchased up to 48k. (In the future 64k might become available, they are now if you want to go

into the higher priced computers). You will need 48k for long address lists or long articles. Of course, as you go up in equipment, you also go up in price. But you also go up in convenience and speed. Again, it depends on whether time is an important factor. Disks are much, much faster than tapes, and will store a lot of information on each one.

Also an important factor is repair service. If your computer fails, how do you get it repaired? Are there service stores available reasonably close by, or do you have to send it back to Japan? Investigate carefully the repair situation, something is bound to happen sooner or later.

There are several amateur radio nets catering to computers. There are many for the Radio Shack and the Apple has a few nets. These are very interesting and informative. Suppose you are thinking of squandering a considerable sum of money for a programme. Someone on the net can usually give you a rundown on it before you buy it. Another feature is problems you might have that someone has had previously and can help you out, perhaps saving a trip to a repair centre. These are valuable.

A very important consideration is the type of programming for which the computer is built. Most of them use BASIC. This is a programme developed for the newcomer. It is easy to learn and uses plain English for the commands. If you want it to print, you type "PRINT." The lines are numbered for convenience. It is easy to learn. One caution, although all of the popular home computers are BASIC, it seems that each manufacturer has added certain commands and a programme on one computer will not work on another brand even though both use BASIC. Some changes are inevitably required. BASIC, although easy, is not fast in operation. But since it is in English, bugs are easy to find. Then, if you are interested in speed, you can go into machine language which requires a great deal of study, but it will give extraordinary speed in operation.

So, when you are looking for your micro, be sure to consider all of these features before you plunk down the money. Talk to others if available, and always, always have a demonstration before you buy. Perhaps there is a computer club in your area. There are a great many Radio Shack computer clubs, and one might be available. There are also some Apple clubs.

The microcomputer world has just exploded! IBM has entered the market along with XEROX and several others. There will soon be at least a dozen popular computers from which to make your choice. It isn't going to be easy.

Amateur Radio, October, 1982 — Page 23

IC11A, forcing its output high; the output of IC11B will go low, and this transition clocks IC10 (74C107). Its Q output will fall, closing gate IC11B to prevent any further clock pulses being received by IC10. Because IC10 Q has gone low, this primes the DP monostable IC9B ready to accept a +ve going transition from the "busy" signal. When the readout of the indicator with a DP present is complete, "busy" goes high, and IC9B triggers generating a pulse of some 1.5 milliseconds in length. The Q signal goes low, which clears IC10. The Q signal goes to ROM address 10, which presents the hex code for "point" to the Speech Synthesiser. At the same time the Q signal passes via NAND gate IC11C (which is open because "busy" is high). The falling output of IC11C is inverted by IC11D and presented, via diode D11, to the Speech Synthesiser start input. "Busy" falls low, closing gate IC11C and the word "POINT" is read. Since IC10 (the DP detector) has been cleared by IC9B the circuit is restored to normal until a further DP is detected.

It should be remembered that, although a positive start pulse to the Speech Synthesiser generates a "busy" signal, the actual readout does not commence until the start signal falls to 0V.

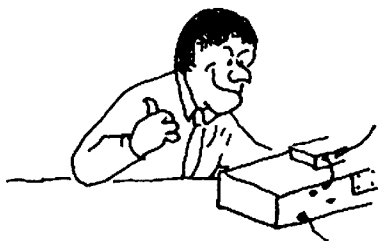
## CONCLUSION

The unit described was built for a blind VK2 amateur and was designed "from scratch" without any knowledge of other types of similar readout devices. Being a "one-off" it was hard-wired and fitted into an "Archer" sloping-front cabinet 20 x 14.9 x 3.5 cm (front) x 7 cm (rear). Installation by another VK2 took only about 30 minutes.

The Telesensory Speech Synthesiser was obtained from A.J. Distributors Pty. Ltd., of 44 Prospect Road, Prospect 5082.

## Meet Frequency Fred . . .

*the man we all dread.*



He tunes up on the spot you are using.  
Then calls a CQ, right over you —  
A practice we find unamusing.

There's a rare DX station and you have his location

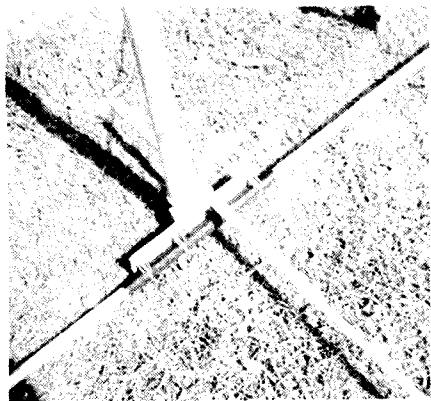
But it's tough as his signal's not strong —  
But along comes our Fred, in a manner  
ill-bred,

And tunes up on the spot loud and long.

Without any doubt, this arrogant lout  
Won't listen for a moment or two,  
To see if it's clear to go on the air —  
Could this be a portrait of YOU?

—From "Break-In" 1981.





Method of attaching element and vertical to boom

and the reflector height 9 ft. 6 in. with a 2 ft. tuning stub down the vertical, its shorting bar near the bottom of the stub.

### MATCHING

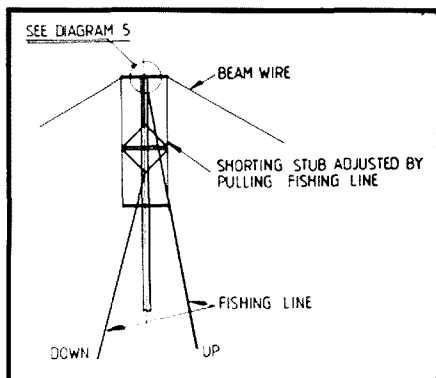
As usual, wide spacing gives you easier matching. At 0.175 wavelength with 3 elements 50 ohm matches well, using a noise bridge. A bazooka may be made from the outer braid of larger coax than the beam feeder. Cut off about 3 feet more than a quarter wavelength of the larger coax. Any outer braid left over can be impregnated with flux then stretched — it works quite well as solder remover. The large braid is put over the feeder and soldered to its outer braid an electrical quarter-wave down. Stretch it tight on the coax then cut off one inch down from the point of connection to the yagi or quad. It should not make any contact with inner or outer braid at this point. Then wrap waterproof tape around it all when finished. This works as a type of balun to stop line radiation and match unbalanced coax to the beam.

It is easier to use the gamma match with two aluminium tubes, simple and very seldom breaks down. If running high power it does not need wide spaced transmitting capacitors, and makes matching close spaced or multi-elements much easier.

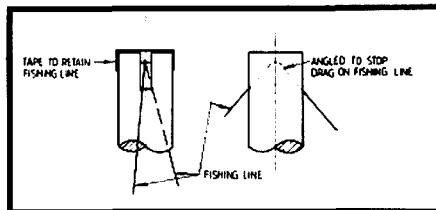
When making these antennas, I was asked many times where to get cheap fibreglass. There are thousands of them acting as spreaders for the SEC lines down nearly every street in Melbourne, but that is a risky source! They are available from a local manufacturer in half inch or three-quarter inch by 9 feet long. You can also get them tapered if you want to pay the price of machining.

### TUNING

Finally, tuning, if using stubs on the reflector or directors. I found that tuning for front to back ratio can be quite critical, one-quarter of an Inch can make the difference between 12 or 25 dB. The method I use is to tune the beam at operating height via two long 100-pound breaking strain pieces of fishing line. These move the shorting bar along the stub, which is made of 16 gauge solid copper wire attached to the top of the vertical section of fibreglass. Make sure the shorting bar is free



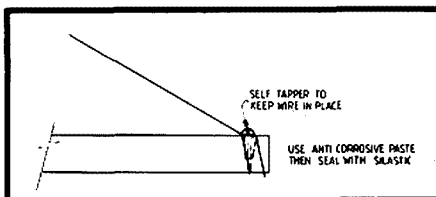
DIA. 4: Stub tuning method



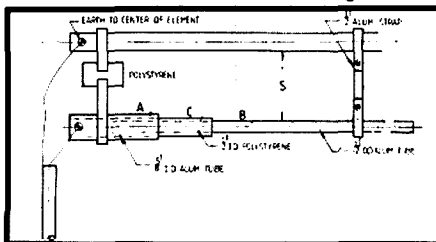
DIA. 5: Top of fibreglass vertical with groove for tuning stub

enough to move yet tight enough to stay in position when you lower the beam to solder it in its permanent position. You then cut off the excess stub.

It helps of course to have a nearby source of steady carrier while you do these adjustments; another station close enough so the signal does not vary; and with the same polarisation, otherwise it has all been for naught, sport! You may as well use a wet string. The antenna and tuning is the difference between being a plaintive cry in the dogpile, or a signal that cuts through the QRM.

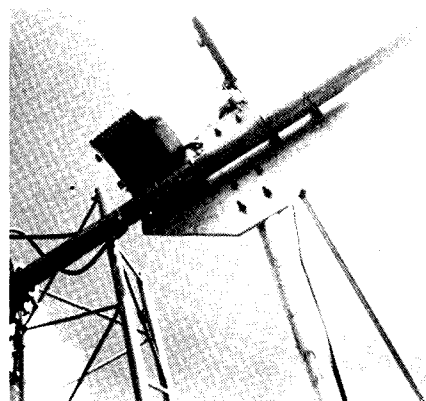


DIA. 6: Wire element fixing

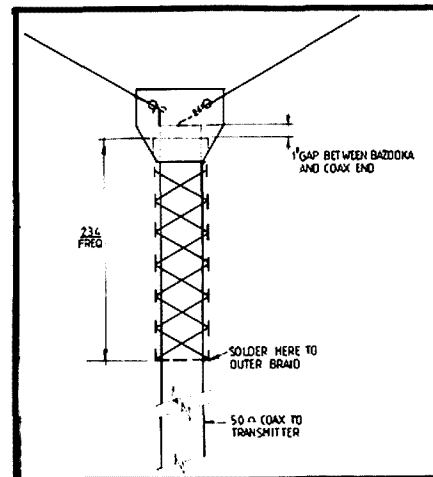


DIA. 7: Gamma match

| LENGTH | A    | B   | C     | S  |
|--------|------|-----|-------|----|
| 10 M   | 5-7" | 25" | 7-2"  | 4" |
| 15 M   | 6-7" | 37" | 8-2"  | 5" |
| 20 M   | 9-7" | 49" | 11-2" | 6" |



Feeding the three elements



DIA. 8: Bazooka

### COMMENTS

I must say the antenna experiments I have done over the years keep me fit with all the exercise! I have had a great deal of enjoyment from the hobby, plus the benefit of learning about the effects of different types of antennas, and perhaps contributing something in this antenna design that may be taken further or improved upon by other amateurs with better facilities than I have at this suburban location. I am building a 3 element on a 25 foot boom for 20 metres and am hoping it will improve my signal in kilowatt alley over the TH6DXX I am presently using.

No doubt this article will cause some comment among the learned gentlemen of the amateur fraternity, as to whether it will or will not be better than known and well-tried types of antennas. I would appreciate any feedback from anyone who tries this configuration out, and what the results were, or anyone who can technically explain why it should be better or worse than the usual type of antenna. As the amateur licence is for experimenting, surely someone has tried this type before as it is such a logical approach to eliminating element droop, plus improving reception. Also, I would like to hear this design from a DX location to see how it compares with other signals from the same area; so how about it someone, please?



# THUMBNAIL SKETCHES



**ARTHUR WALZ, ex 4AW 1926, VK4AW**

Arthur, who was awarded Life Membership of the Queensland Division of the WIA in 1932, is without doubt the most knowledgeable amateur of early Queensland's activities because he actively participated in administration, being President of the Queensland Division for 15 years, and was in the forefront of experimentation.

Between 1927 and 1940 Arthur was the main force behind 56 MHz (5 metres as it was then known) experiments, ground to ground and air to ground, providing several records of that period.

As an active member of the Air Force Wireless Reserve, OC, Queensland, together with very good experience on HF and VHF radio, led to Arthur being called up for service in 1940 with the RAAF.

Arthur was promoted to Squadron Leader and was attached to HQ Melbourne before becoming responsible for DF installations in New Guinea, and finally CO 2nd RIMU, Townsville.

VK4AW has maintained activity on the amateur bands and of latter years concentrated on satellite working.



**FRED MATTHEWS, OBE, ex 4FK 1924**

Fred became particularly interested in amateur radio aged 19, when in 1923 the American yacht "Speedjacks" visited Brisbane. The yacht was fitted with a voice radio transmitter and many local amateurs had the opportunity to hear and inspect this "marvellous" installation.

Not long after receiving his licence Fred became involved with his brother in the Fire Alarm system and company which bears their name and which is a force in fire protection in Australia today.

Fred has been Managing Director since 1945.

He has maintained his interest in historical matters generally, and prepared a paper on "The Early Years and the Magic of Wireless in Brisbane from 1921 to 1925", which he made available to the Queensland Division.

Fred was honoured with an OBE in 1979 for services in the field of Fire Protection.

The Institution of Fire Engineers has accorded him a Life Membership for his services to the industry. He is the longest serving member in Australia.



**LEO FEENAGHTY, ex 4LJ 1930, ex VK4LJ**

Leo's early interest was in the army, but while searching for further interests for his company he found "wireless" and finally decided to obtain his "ticket", which took six weeks hard work with VK4FK, VK4JG, VK4JL, all from Woolloowin Radio Club.

In 1927, with VK4MM, he founded the Queensland Radio Transmitters League, becoming its first secretary, and when it became Australia-wide, first Federal Secretary, until it became the WIA, Queensland Division.

His army career led him to the rank of Major, but when he became Assistant Secretary of the Main Roads Department in 1929, he went on reserve, and later amateur radio also suffered.

For many years as Secretary of the Main Roads Department in Queensland his signature was a familiar sight on Queensland motor vehicles.

Leo founded and edited "QTC" for some 4½ years from 1927, and ensured that copies were deposited in the State Library. Leo has been retired for some years on the Gold Coast.

**The WIA is in business for more members. Please help.**



**CLIFF GOLD, DCG 1926, VK4CG**

Cliff became interested in radio as a schoolboy, aged 19, when in 1923 he visited the WIA exhibit at the Brisbane Exhibition. He became active with spark coils (his district was "alive" with them) and big "hunks" of galena.

Cliff lays claim, with 4WA, to building the first crystal controlled transmitter, using Brazilian quartz spectacle lens ground to size.

Cliff was a Federal Councillor in 1928.

After some years in Brisbane he moved to Toowoomba and, using much of his own amateur gear, helped his uncle, Ted Gold 4EG, build 4GR, the only Queensland "B" class station, in Toowoomba. Power supplies were a problem and a DC generator off the mains was tapped to provide 180 volts AC, and all the transformers were completely built by Cliff.

Cliff became 4GR's first full-time announcer as well as keeping the valves glowing.

Children of that day knew him as Uncle Cliff and his foil, Cliff himself, as Willie Evergrow. Quite a humorous session.

Cliff retired from the technical side of the PMG some years ago.

## EMC

(Electro Magnetic Compatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

**FORWARD DETAILS TO  
VK3QQ,  
Federal EMC Co-ordinator, QTHR.**

# Philips SVC 100L/110 — A Sequel

A.R. Dexter VK5DL  
9 Alexandrina Road, Mount Barker 5251

In the June 1981 issue of *Amateur Radio* (page 13), Tony described briefly the Philips type SVC 100L/110 transmitter and asked any readers who knew anything about this model to get in touch with him. This request brought an excellent response and he has put this extra information together to provide another small piece of Australian radio history.

The first letter which I received was from Sid Wardle VK2DID, who said that he had seen the last few of these transmitters made and who suggested that I contact Ken Horan VK5IT (formerly VK5DQ), who was the project engineer involved with the production of the SVC 100L/110 at the Philips Apparatus Factory, Glenmore Road, Paddington, Sydney, in 1944. A telephone call from Ken confirmed this. He said that about 300 of these units were made for the US Navy and were used in the Pacific Island campaigns. The units were splash-proof, with their top and front covers, so that they could be landed by boat, and were fully tropic-proofed. In addition, approximately 100 units were made for the RN and RAN.

Frank Izon VK2DQX (formerly VK2PC) wrote a most interesting letter saying that he had been associated with the whole project. He had been present at the installation of the first unit off the production line, together with a type Y43 receiver, in HMS Shropshire at Garden Island. The Shropshire was on loan from the RN to

the RAN at this time. Frank was Defence Co-ordinator at the Philips Electrical Industries from 1941 until the end of the war. He said that the designers of the SVC 100L/110 included Messrs. Henk Teunisson (Dutch, Chief Engineer) and Hugh MacDonald (New Zealander, Deputy Chief Engineer).

The completed cost of each unit was initially £732 but this was reduced to £716 plus spares at £113 but excluding valves. Extra costs included the instruction manual (15/-) and packing for those not installed in Sydney. The units were produced on a "cost-plus" basis which added a further 25%. The final acceptance of the units was through Allan Fairhall VK2KB, who was in charge of the Radio and Signals Section, Ministry of Munitions in NSW at this time.

According to Ken Horan, at the cessation of hostilities, many of the surplus units were dumped at sea. A few however survived. Three were sold by tender by the Post Office in Adelaide in 1947. Les Catford VK5LC got one of these, and this is the unit which has been owned by me since 1978. Ron Henderson VK1RH wrote to say that the Adelaide University Radio Club had used a modified SVC 100L/110 during his student days in the period 1953-58. However, this club has not functioned for many years, and the equipment has been disposed of.

Well, that ends the matter of the SVC 100L/110. However, if anyone else has any further information, contact the writer.

## What Price Construction?

Frequently one is faced with the question, "Will I build or will I buy?". On many occasions the choice is a very difficult one. Just take the example of a multimeter for instance.

Who would think of building a multimeter when one, accurately calibrated, can be bought so cheaply? And how many times have you heard the would-be constructor saying, "I could build the GDO all right but I'd never be able to calibrate it. It's much cheaper to go ahead and buy one." Well, possibly this person is right. But have you considered how much has it cost him in experience to buy the item rather than build it. Or for that matter, buying a new transceiver instead of converting an ex-disposal unit was the practice. Just how much would he have learned by doing the job rather than having it done for him?

However poorly a unit functions, if it is made or converted by someone as a one-off job then that person must have learned a little about its construction and principles. And, unless that person has no powers of observation whatever, he will be able, by careful criticism, to see his faults and correct them either in the prototype or in a subsequent model. The very action of doing the job has shown what the job is all about. Of course, complete recognition and understanding will not come immediately, but will come eventually.

Many amateurs consider that the practical side of electronics is a joke, or a bore or an unnecessary imposition. They consider that bright people should remember the theory, just because it is theory. But how much more meaningful will that theory become if it is reinforced with practice.

Radio Clubs, via the many classes, strive continually to help amateurs UNDERSTAND radio. It is just not good enough to join wire A to point X, pull down switch Z and hope for the best.

Perhaps the wise Chinaman who said, "I hear and I forget; I see and I remember; I do and I understand", had something after all, so what price construction?

From "Westlakes Amateur Radio Club" Newsletter  
May 1982

Photographs for AR  
DON'T KEEP THEM  
TO YOURSELF  
Send them in — NOW

## This is only a Test...

Saturday morning, 6 a.m., and it's my day off. I've got a thousand things planned for today. This is really too early to get up. Roll over and go back to sleep. What in the world are those kids doing already outside playing at this time of day? Where did they get the sledge hammer that they're using to beat on the side of the house? I'm going to destroy the "clacker" on that Big Wheel tricycle. Why did I think I'd be able to sleep this morning? Uh-oh, 8 a.m. (yawn) already. I gotta get some coffee. Dog-gone-it, there goes the phone.

Hello . . . there's what? . . . Oh geeez . . . This morning? . . . I gotta get some coffee . . . OK, I'll check into the net . . . good-bye. Where's my robe? What? Oh, sure honey, I remember. I'll get right on the garage as soon as the NET is over. Yeah, we might even be able to get one of the cars in the double garage this winter. You bet, I'll get the dead limb on the tree in the front yard right after I get the garage clean enough to find the tree saw. Open up the shack. Man, I've got a lot of

stuff piled up in here. Turn on the rig. I've gotta get some coffee in a minute. Net control, this is WA5RPP checking into the net. Yes, I understand the situation is a downed jet plane, and that the two men aboard have bailed out safely. I also understand . . . "THIS IS ONLY A TEST". Did I remember to plug in the coffee pot? Who's at the door? You kids better not be ringing that doorbell. Oh, hi Jack. You aren't KU5B (WB5TZZ)? I see, you are a simulated downed airman from a simulated crashed plane. Sure, you can park your car in my driveway. As soon as they send out mobile units, they'll find you in short order and I can get some coffee. I remember . . . THIS IS ONLY A TEST. Back to the rig. Yeah, the mobiles are closing in on the blue Toyota that is parked in my driveway simulating a downed airman. Now I can get my coffee, finally. I don't mind a simulated Emergency Test, but I get a little cranky if I have to simulate the coffee, too!

— WA5RPP

Derived from "Collector and Emitter", Nov. '81

# HOW'S DX

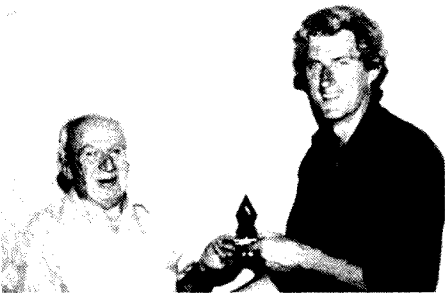
Ken J. McLachlan VK3AH  
PO Box 39, Mooroolbark 3138



During my writing and correlation of HOW'S DX over the last year it has always been my intention to invite some personalities who have contributed to the hobby over the years to express their point of view and share some of their experiences with the readers of AR.

The first invitation to participate was made to an avid CW listener who supplies copious and accurate information for this column of the magazine, who has the outstanding total of 330 countries heard on CW and 323 verified since 1945. This listener could be no one else but Eric Trebilcock, known to all as SWL L 30042 / BCRS 195 who has voluntarily and unselfishly contributed thousands of hours to our hobby. Very few apart from his XYL, Gene, family and close friends, know how much Eric has contributed to the hobby.

It would be impossible to attempt to name everything that this quiet and unassuming gentleman has done or the number of years that he has been doing it but a chance glance at a Wireless Weekly of 1935 vintage showed that Eric BERS 195 came third in the BERU Receiving Contest that year and it is known that this was not his first or last participation in such a contest. Since that period there have been many rearrangements of the ornaments on the mantelpiece to make way for trophies such as the Rosebowl which is awarded annually to the winner of the SWL Section in the BERU Contest.



**Eric, being presented with his award for the 1980 BERU Contest by Dennis, G3MXJ. This was Eric's 40th entry and seventh win in the contest.**

Also, it is not general knowledge that prior to WW II, Eric, under his own call sign VK5TK, operated from Tennant Creek in the Northern Territory. Skipping a couple of decades of time, due to the necessity of brevity, he took over the VK3 Inwards QSL Bureau, to assist for a short time until a suitable volunteer was found. No one else came forward or was available and Eric operated it unaided for some twenty years. During this period, Eric retired after fifty years with the one employer, the Commonwealth of Australia. In 1976, in the Queen's Birthday Honors list, Eric, was awarded the British Empire Medal with the citation reading "FOR PUBLIC SERVICE".

The Victorian Division of the WIA in 1980 recognised Eric's service and conferred Life Membership of the Institute to him for his untiring service to the VK3 Inwards QSL Bureau and to his fellow amateur.

Eric Trebilcock, B.E.M., WIA Life Member and SWL L30042 / BCRS 195 over to you.

*During my fifty years plus membership of the Wireless Institute of Australia, I have, on more than one occasion, become the recipient of one of its honors including Honorary Life Membership which I thought would be the final. However, "Amateur Radio's" DX Editor has decided otherwise and has kindly asked me to be this month's GUEST DX EDITOR, a position I sincerely and most thankfully accept.*

*As an ordinary fellow, who has been around a relatively long time, enjoying the bad times as well as the good, and also never having spare moments on my hands, it has often given me a cold sweat to hear, and read about my fellow men and women, of all ages and standings, getting into a state of boredom because they could find nothing to do to fill in their spare time.*

*Why, you may well ask, to which my reply is NO-ONE should get into such a groove in this day and age, with all the various hobbies that are around waiting for takers. These are too numerous to mention here, but some which come to mind are Coin Collecting, Stamp Collecting, Photography and Amateur Radio, all four of which have been part of my life continuously since my school days.*

*During my first working days, some of my friends took an interest in amateur radio also, and we spent many an hour, singly and collectively, learning all about the simplicity of radio, or, as it was termed then, sixty years ago, "A Fascinating Game, played by Young and Old". It kept our hands full and there was never a dull moment in our lives!*

*It is true that we tinkered with only the simple gadgets such as crystal sets, aerials, earths headphones, dry batteries, insulators - even water pipes and home made morse keys - yet come to think about it, we were both learning and keeping from becoming bored with ourselves through would-be idleness.*

*As then, so now it behoves of all Amateur Radio enthusiasts, wherever you may be, to do your best to lessen the boredom of your fellow men and women in your locality, by whatever means is best available - you can do this, readily by preaching the Gospel of Amateur Radio, at every opportunity.*

*A second matter, which angers me at times, is one which all of you readers out there must meet up with from time to time with regards to the deterioration in Amateur Radio Operating behaviour in the past few years. To quote instances, I mention the*

*running of carriers for minutes on end when tuning up, as well as absence of call signs when so doing, also the maddening pileups which occur almost daily on frequencies occupied by rare call signs. The bad manners indulged in have reached beyond this old timer's wildest dreams of half a century ago, at which time good operating manners were the rule with hardly any exceptions.*

*These bad habits are most noticeable on HF, and it is to be hoped that they are not repeated when the 1983 Heard Island joint Australia/America venture, which is being organised by the VK6 DX Chasers Club and is supported by the WIA, gets underway using the callsigns VKOCW, VKOHI and VK0MD.*

*In particular, ALL Australian Amateurs interested in DX, should endeavour, (in an orderly and expeditious manner) to contact one of these three stations, on both CW and SSB during its expected six weeks of operation on all bands (including Novice segments) 160 through to six metres.*

*Amateurs in VK and world wide, this may be the last chance, in your lifetime, to contact the rarest "VK" of them all, so note the time now - viz. January to March 1983. Please remember at all times fair operating tactics are a MUST.*

Thank you Eric for so much food for thought and to Gene and yourself a continued happy retirement and good CW listening.

## DX JAUNT

Well known Federal Councillor, Federal QSL Manager and active amateur, Neil, VK6NE, is preparing to take a rest from the work QTH and all other duties including those of being a co-ordinator of the group that intend putting VKOHI, VKOCW and VK0MD on the air in January next year and is flying off into the wide blue yonder.

First stop (from 20 Oct. to 3 Nov.) will be a DX operation from the Cocos (Keeling) Islands using his call VK9YE. Then onto Christmas Island from the 3rd. till the 10th. November. With the DXing over, it is time for some sight seeing in 9V1, prior to attending the SEA NET Convention on the 12th. - 14th. November.

Neil hopes to operate the station that is located at the convention centre, the Majestic Hotel, whilst there. After hobnobbing with the Who's Who at the amateur get together of South East Asia, Neil will attempt the "long path" home via VS6 for a twelve day shopping spree (all orders for souvenirs received QTHR now). To round off a fine trip, Neil will stop over in both BV and BY land for a week before returning home to work and a backlog of QSL cards.



## NEW VU YL

Rather rare is the sound of a VU YL operator but Usha VU2XYL has been quite active on 20 metres of late. As it is a new call, direct QSLs can be routed through VU2RX or via the Bureau will be 100%.

## DON'T FORGET

Don't forget that Ernie, VK3DET, will be on a Mini DXpedition starting on the 12th October. Planned visits to Fiji signing 3D2TN, Tonga, A35TN, Western Samoa, 5W1DW and in American Samoa the call to look for is VK3DET/KH8. Full details of the proposed itinerary were published on Page 33 September '82 AR. Ernie has indicated that he will be particularly looking for VK/ZL contacts. Novice Operators and checking into the usual DX Nets when propagation allows. All QSLs via Dick, VK3VU, PO Box 600, Ballarat 3350.

## HELPING

Reliable sources confirm that Marty, OH2BH, has set up a training programme for two prospective ZA's. Word has it that Marty will be taking them to his QTH for practice in actual operation of transceivers. Congratulations Marty on your positive approach in assisting and sharing your knowledge with the amateurs of the future.

## MAYBE

Word is around that both XU and XV maybe active in the near future. This would have to make all DXers happy and particularly those that have recently taken up the facet of the hobby that involves "pasteboard" collecting.

## SHARING

Andy, ZD9BV and Lorna, ZD9YL, can never QRM each other as they use the same equipment. Who uses the equipment and when may be a different story. Antennas are now operational for 80 and 40 metres, so another country is available for the Low Band DXers. All QSLs to W4FRU.

## MALAGASY

Alain, 5R8AL, has returned from his holidays in France with a new rotator for the antenna which was donated by the IDXF and intends to be more active as he has requested more cards to be printed by the Foundation.

## CROZET AGAIN

George, FB8WG, is scheduled to return home from his tour of duty at the end of this month. An all out effort to accommodate the needy will be made and listening below 14.120 MHz could be fruitful. QSLs to F2CL.

## LIBYA??

5A1AD has been active but is he genuine? Work him first and worry later. I8ACR has been nominated by the Tripoli based station as the QSL route. Incidentally the ARRL microscope still will not focus on cards that were eventually received from G3JKI/5A and have been submitted for DXCC credits.

## ANOTHER BY

When tuning the bands for the genuine BY1PK, don't overlook a new station due to grace the airways. BY1BC.

BY1BC, is the station of the University of

China, and word is that it will be joined by a BY4 from Hunan province and a BY7 from the Canton province in the near future followed by stations from other provinces. Tong Xiaoyung, who is responsible for BY1PKs operation has been conducting classes for "supervisors" from all over China and new stations will be set up in the near future.

Patience, is required, whether in finding them on the band, waiting to work them or actually during a QSO as speed is not important to these friendly people. Their main concern is to master their operating technique and the English language and given time they will appear on all bands including the WARC allocations as their administration has granted their approval to their use.

QSL the BY1PK you hear or work to PO Box 6106, Beijing, Peoples Republic of China and you are assured of a prompt return, even if you are not in their log due to the activities of the unscrupulous in pirating their call, a courtesy card to that effect will be sent to you.

## CLYDE VALLEY DX

(Refer May p21 and August p33 Amateur Radio)

This operation is now finished. QSL information is via GM3UCI QTHR in current Overseas Callbook, complete with eight IRCs to cover mailing charges.

The operation was apparently quite a success and it is known that at least one VK amateur was successful in working them from all four locations and he is now anxiously awaiting his special award.

## RADIO CLUB DE CHILE CELEBRATES ITS 60th ANNIVERSARY

This IARU member club was founded on the 12th July 1922 by a small group of radio experimenters and has now grown, with some 2,200 members, to be one of the largest radio clubs in South America.

The club owns a comfortable two storey building which houses a conference hall with a capacity for 500 people, three separate radio shacks all containing working, all mode, modern equipment, several classrooms to prepare students for amateur licences, an import department which imports equipment from all over the world and sells to members at convenient prices, a VHF department which is in charge of the various 2 metre repeaters located around Santiago and a QSL Bureau which handles over 150,000 cards per year.

A magazine, "Caballeros del Aire" is also printed and distributed to the members. There were some excerpts from this magazine and also a cartoon in last months column.

The official celebrations for the 60th Anniversary took place on the 17th July. During the celebrations a special plaque and gold medal were presented to Sr. Enrique Sazie, XQ3XX, one of the original founders of the Club, in recognition of his contribution to Amateur Radio.



Carlos, LU9CN presenting a commemorative plaque on behalf of the IARU to Gomez, CE3GF President of R.C. de Chile on the occasion of the 60th anniversary.



Enrique, XQ3XX (seated centre front) founder member of the club surrounded by directors of the Club at the celebrations.

**TA OPERATIONAL**

Word is around that C6ADV will be operational this month from Turkey. It is expected that the prefix TA will be heard for the duration of his twelve month stay in Ankara. QSL's should be routed through N7YL.

**ACTIVE PREFIX**

VU9 is a optional special prefix that may be used by VU stations for the period mid-August to mid-December this year. Certificate hunters may gain a special Award for contacting ten VU9 operators in this period. Requirements are a copy of your log (no certification or cards are required) to the Awards Custodian, VU2RX, V.J. Bhatt, 5B Suresh Colony, Opposite Juhu Aerodrome, Vile Parle West, Bombay 56, India. Vas, VU2RX (VU9RX), requests that 6 IRCs accompany each application to defray mailing charges.

To gain a VU9 QSO, one may find Vas, VU9RX active most days around 14.205 MHz at 1300 UTC and an extra point towards your score of 10 may be obtained by asking Vas during a QSO if you may speak to his XYL Usha. Usha, VU2XYL, is very new to the bands and has made many friends worldwide already considering that she has only been licenced since July this year.

**CHAD ACTIVATED**

TL8GM claims to have the correct paperwork which enables him to cross the border and operate TT8LM. The proposed activity was due to commence in mid September and continue through until the first week of this month. QSL's to F6FYD.

**SILENT KEY**

It is sad to record the loss of Dick, KV4AA, who passed away suddenly in early August. A very jovial and active amateur who gave many a Dxr their first KV confirmation for DXCC. The frequency of 14.202 MHz which he generally occupied, particularly since his retirement, gave me many hours of pleasureable listening over the years.

**INTERESTING QSO's**

Some interesting QSO's that were overheard included those of LA1EKO/P, Op.Tor, QRV from a Gas Platform off the W. German coast. QSL via Bureau.: TL8GE, Op. Michel, QTH Dolobo. QSL via F6FYD.:4K0A, Op. Vic. QTH 85° N. 163° E. QSL via UA1ADQ (Bureau):F6FIC/TZ Op. Jean, QTH Bamaka. QSL via F6CRS.: DK2XN/TZ Op. Alex QTH Mopti. QSL via home call (Bureau): CS5SRL Boy Scouts Station at Obidos. QSL via CT1AHU.: I8UDB/IL7 QTH Tremiti Is. QSL via I8ACB.: C3LM, QSL via EA3BKZ.

**SOURCES**

These notes have been compiled with information gained from magazines including BREAK IN, CABALLEROS DEL AIRE, cqDX, DX BULLETIN, GEOFF WATTS Newsheets, QTC, QRZ DX, W6GO/K6HHD QSL MANAGER LIST, WORLD RADIO and overseas amateurs including G3NBC, ON5NT and WA3HUP. Also reports and additional information from VK3FR, PBA, UX, WJ, 4AIF, 6FS, HD, IH, NE, XI and L30042. Thanks to one and all.

**DX ON THE NOVICE BANDS**

**10 METRES**  
3B8DB, 4Z4QK, 9J2BO, AH2AC (Johnston Is), C21NI FK8KAB, FWOAG, HS1ANG, KC6SX (Caroline Is), LX1KW, T2AGD, T30AC, VK0AN, VK0DX, YJ8DB.

**15 METRES**  
4X4KP, 4Z4QK, 6D5XNT, 9J2BO, 9M8JS, C21NI, CR9AK EA6NV, FO8GW, H1LGS, HP1ANE, T22NS, T2AGD, T30AC, T30DB, VK0AN, VK0DX, VS5HG.

**SSB WORKED ON THE WEST COAST**

**10 METRES**  
KC6SX, VK0AN

**15 METRES**  
M1C

**20 METRES**  
6W8DY, 9M8NL (YL), FR7GT/T, H44KR (YL), KC6WS (YL), OX9V (YL), VU2XYL (YL).

**40 METRES**  
8P6AG, 8P6OR, 9M8JS, 9V1TL, C21NI, HK3BAV, JHIHV/JD1, PJ9EE, T30DB, VK0AN, VP2VD.

**80 METRES**  
9M8JS

**CW HEARD AND WORKED ON THE EAST COAST**

**15 METRES**  
5Z4CM, A92E, EK0K IT9TY, LU1HDC, NOZO/DU2, UA0ZDA

**20 METRES**  
FR7BP

**SSB HEARD AND WORKED ON THE EAST COAST**

**10 METRES**  
3D2DX, 4D1PJS, 5W5DQ, 8J7BSJ, 8O7AZ, 9M2EE, 9M8JS, DU1CPL, FR7CG/T, HC9PP, HS0HS, KC6WS, KH8LW/KH7, N6DPH/DU2, O4AARQ/HK5, SM0MLL/C9, T2AGD, T30CB, VP2MO, YB2SV, YJ8TT

**15 METRES**  
T30CB

**20 METRES**  
3B8SJ, 5H3BH, 7X4AN, 9X5PP, A71AD, A92P, AH3AC, FB8WG, FG7BT/M, GD3KHE, J6LB, JW7FD, LZ5A, ON4MK/LX, PZ1BK SM0MLL/C9, T30BK, T30CB, T32AB, VK0AN, WB1HA1/KG6.

**CW SWLing with ERIC, L3 0042**

**10 METRES**  
NOZO/DU2, HG5A, JA1OLX, JAORUG, T2AGD, VQ9GD, W7MCG, ZL1AMO, ZL2BGV, ZL3FX.

**15 METRES**  
VB2A, N6DPH/DU2, DX1F, EA3AQS, FK8DP, HL5OC, KC6INS, KH6OZ, KX6OS, UK9MAA, VU2GJS, YB4YB, YC2BDJ, YC5AR, YU3EA, ZS6BIM, 9M8NL.

**20 METRES**  
EA3AWO, ELOAX/MM, FK8KAA, FO0TM, FR7BP, G5RI, IS0AGP, KG6RT, KP4BJD, OK3AL, T2AGD, T32AF, EK0K UA0KAW, VP2MM, VP9GK, VQ9GD, YB5AES, YJ8TT, Y73L, ZB2EO, 9Y4VU.

**30 METRES**  
DJ0GF, EA4AXW, DL7AEA/EA6, F6FGN, G2RF, GD4BEG, GM3MXN, HB9DX, JA6PJ, OE1GPU/3, OK2KQG, DJ8NY/OZ, PA0RVR, VE1ZZ, VE2DC, VE3LSK, VK6NM/MM, VP2MIX, YB5AES, YU3DA, DL2GG/YV5, 6Y5FS.

**40 METRES**  
C21NI, C30CB, C30LM, CO2JY, DL8AN, EA3EF, FK0TAA, FO8FW, G3FXB, HB9AHA, I1UNO, HK0BKX, JH1HVF/JD1, KC6SX, KG6RT, LZ1KSN, OK1TN, SM0GNU/OH0, T12DLK, UK2GJL, UL7PGA, UQ2GFM, VQ9GD, Y54UL, YU3MY, YV1AOT, 3D2DX.

**80 METRES**  
DF1JN, HK3YH, JA7FUJ, KV4CI, OK4AWQ/MM, OH1TN, ON7KD, SM7BIC, UA3ZFN, VK9NS,

W2QD, N4ZG, K9AJ, YB5AES, YU3MY, YV1NX, YJ8IND, ZK1DX.

**160 METRES**  
VKs 2BRA, 2DSG, 4XA, 5KL, 5UD, 6HQ, W7TJ.

**QSL'S RECEIVED (AUGUST) —**

CN8AT, DL0IG1 (10m beacon), ON4VJ/LX, 8J5SUN, 8J1RM, KP2A/KP1, PY3CFD, RK2ABC, RG6G, VQ9CW, ZS6BSZ, 4X4FU, 8P6AU.

**QTHs YOU MAY NEED**

C21NI, Box 29, Republic of Nauru.  
FK8BLI, Box 2448, Noumea New Caledonia.  
FK8EJ, Box 872, Noumea New Caledonia.  
FO8FW, Box 5006, Papeete Tahiti.  
H1LGS, Box 1157, Santo Domingo Dominican Republic.  
HP1ANE, Box 7407, Panama City Panama ZIP5.  
KA6NFL/KH0, Box 209, Saipan CM96950 West Pacific.  
T30DB, Box 494, Betio Tarawa Kiribati Central Pacific.

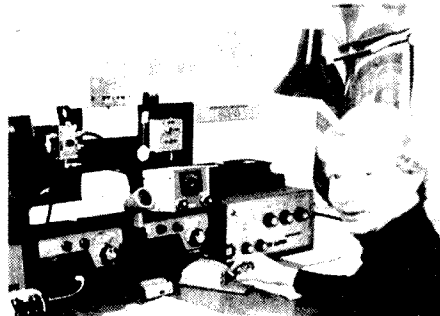
**QSL MANAGERS**

4U1 ITU April 13-17 '82 (DF3ZE), 4U1 ITU WPX SSB '82 (OH2BBM). 4U1 ITU July 29-31 '82 (DJ8NK), 5H3BH (SM0EA), 9L1FC (WOCAE), 9N1BMK Jan/March '82 (JA8BMU), AA6AA/3B8 (AA6AA), AH2AI (WA3HUP), C21NI Jan 25-26 '82 (PA0GMM), FC0ZN (DJ9ZB), JY1 (WA3HUP), JY3ZH (DJ9ZB), TYA11 April 10-16 '81 and July 9-19 '82 (W2TK), TYA11 all others (ON5NT), VK9CCT/VK9Y (VK5QX), VK9CGT/VK9Y (VK5QX), VK9YA (VK5QX), VK9YB (VK5QX), VK0DX (VK7LG), VK0JH (VK3DJV), VK0RH (VK3FR).

**Faces Behind the Key and Microphone**



Garry VE3GCO



Gunther DK2WH

# Heard Island Update

FROM VK6NE

## PROFILE OF AMATEURS UNDERTAKING THE GRUELLING TRIP

**VK0HI :: DAVE, VK3DHF, ex VK9ZD.** Leader of our DX group, with experience on Willis Island, and in the Antarctic Regions. Experienced technician, meteorological observer and photographer. Presently employed as a Technical Instructor with the Bureau of Meteorology.

**VKOCW :: ALAN, K8CW, ex W8BDO, W5ODJ, K8CW/KH6.** Alan comes with top recommendations from the USA. Has excellent operating techniques, a mechanical engineer by profession who will ensure our generation equipment keeps functioning at "contest" pitch.

**VKOMD :: CHUCK, N4BQW.** Vast experience in internal medicine, specialising in the sports area. Prior to commencing private practice was Chief of Sports Medicine and Team Physician at Iowa State University.

## EXTRAS

Also accompanying the mountaineering team at the advance base will be another doctor, possibly an amateur. The mountaineers are a very competent group. Some of the activities have included Himalayan and New Zealand climbing. Even the climbing of Balls Pyramid has been attempted and conquered by this group. A recent article in an Australian-wide newspaper, showed the two convenors of the Expedition, abseiling down the Gap in Sydney. The article went on to explain what the group intends to do while on Heard Island. Great publicity.

## ANACONDA II

The maxi Yacht, Anaconda II, will be carrying the men, woman, and around two tonnes of equipment. Remember, they have to be fully self-supporting for three months in a very hostile environment. Since being launched, in the early 70's, this vessel has sailed approximately 150,000 nautical miles, including two circumnavigations of the world.

The yacht's most recent trip was participation in the Rio de Janeiro Yacht Race, which led her through the "roaring forties", into the Southern Ocean and around Cape Horn — a fitting trial for the expected conditions that lay ahead.

The magnificence of this vessel cutting through the water is a sight to behold with its overall length of 84 feet, beam of twenty feet and towering main mast of 98 feet. This is complemented by the mizzen mast which is some 74 feet high and a sail locker second to none.

This vessel is motorized with a 135hp diesel, a fuel capacity of 1600 litres, it's cruising range is quite extensive. Electronic equipment carried includes modern radio, radar, depth sounder, telephone, satellite and terrestrial navigation equipment, complemented by access to two offshore computers.

Australia's claim to Heard Island is rather tenuous with some countries disputing our sovereignty over it. As the Expedition's operation will include some work on behalf of government departments, as well as including, by invitation, a Government Officer that will carry out scientific studies, it should help to reinforce our claim.

From the concept of the expedition, safety of all personnel has been of paramount importance. Every aspect of the operations of both the base camp at Atlas Cove and the advance camp at Spit Point has been considered. We now have Richard Priddy, an Australian qualified Antarctic medical officer, joining the mountaineering group.

## But back to Amateur Radio: HEARD ISLAND ON SIX METRES

Right from the days of spark and crystal, amateurs have done the impossible.

So, who will be the first to score a contact on "6" with VK0HI. Dave has given an assurance that he will have a station operational and a beacon will be setup using a Kenwood TS660 Transceiver, this with the aid of a Keyer designed and built by Gil, VK3AUI, will be capable of transmitting six and listening on ten metres.

This unit has been built and tested with the transceiver and it is capable of having both the six and ten metre frequencies independently set. The ten metre listening frequency will be programmed into the six metre CQ call.

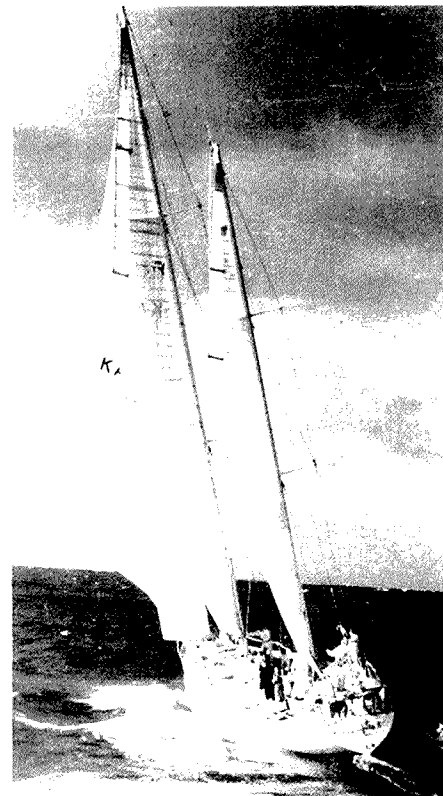
Six metres distance records put Heard Island within reach of many operators. Its no use the "experts" saying its the wrong time, propagation will not be good, an attempt for a new country to be worked will be made.

One aspect has crossed our minds about interference and pirate operations. Heard Island is so remote and isolated from anywhere with an amateur population that signals not emanating from the island should not give the true bearing of Heard Island.

The duration chosen should give all amateurs a chance at working this sought-after location. This is not a one or two week hit or miss affair. Sufficient time will be available to overcome some non-operational times. These could be caused by violent storms, rain static, solar disturbances and a myriad of other problems that plague even the best organized expeditions. We hope Murphy hates being seasick and stays at home, leaving our expedition to have a trouble-free three months.

## SUPPORT FOR THE TRIP

Support is still coming and a number of organizations have given pledges of some thousands of dollars as well as equipment. We would like to see greater support from the Australian amateur, as this is an Australian organized expedition.



The Anaconda II at sea.

HIE Photo '82

## COMMERCIAL SPONSORSHIP AND DONATIONS

Financial and equipment donations from and including Companies and organisations such as DAMART, EXPLORERS FUND, MONT, NEW ZEALAND ALPINE CLUB, OUTBOARD MARINE PTY. LTD., PURAX FEATHER MILLS, WILDERNESS EQUIPMENT AND W.L. GORE have been received with sincere thanks.

The VK6 DX Chasers Club would like to thank the following, who have joined as an associate member of the Heard Island Expedition '83, and to the many others who have helped to get us this far.

## DONATIONS RECEIVED:

NCDXA US\$10,000  
WIA VK1 Division \$50  
WIA VK2 Division \$200  
(For Equipment)  
VK3UX, \$10.

## ASSOCIATES:

VK3DKH, VK3ZGA, VK6CT, VK6CU, VK6DV, VK6DQ, VK6FS, VK6YL

The above list does not include associate-ships taken out by the general public.

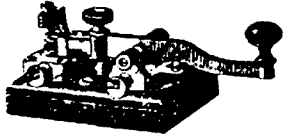
## All donations and Subscriptions to

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VK6 Division — WIA,  
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INSERT NOT RECEIVED?

Due to miscalculations, some members did not receive the Heard Island insert last month. If you require a copy please write to the above address.

# POUNDRING BRASS



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## THE CW QSO (Part II)

Communicating in Morse can be as quick and efficient as on phone. You might have to think about that for a minute, but it is pretty much true. If you can work CW at a speed of, say, 15 WPM or more, all you have to do is optimize your format and you can convey as much information in as little time as you could on phone. Most of us become hot-air merchants as soon as we key the mike, and the apparent goal is to keep an over going as long as possible. Listen to any ordinary QSO on phone and count the number of times you hear the syllable "ah ....." "OK, Fred, your, ah, FT101E is doing a terrific job there, and, ah, the dipole sounds real great too. Ah..." Now see how long it takes you to send "FB UR RIG ES ANT" on the key. Admittedly only one word (rig) is spelled out, but we are talking about running a QSO here, not studying or practicing for a DOC exam. Abbreviations are a fact of life, and as long as everybody uses the same ones, they make CW operation faster and more enjoyable.

Abbreviations and their usage should be inversely proportional to the speed you are working. In other words, the slower your working speed, the *more* abbreviations are required. If you are working a fellow who can obviously go a lot faster (maybe you followed the "Golden Rule" and answered his 20 WPM CQ at your own speed of 10 WPM, and he has slowed down accordingly), you owe it to him to cut your transmissions down a bit. Many ops would send "MY NAME IS ARTHUR? ARTHUR BT MY QTH IS GOULBURN? GOULBURN, ABOUT 120 MILES SOUTH OF SYDNEY? SYDNEY". Remember that you are a 10 WPM man sending to a 20 WPM man; you sound to him just like a 5 WPM man does to you. All you should be sending is "NAME ARTHUR? ARTHUR BT QTH GOULBURN? GOULBURN ABT 120 MI S SYDNEY." **N.B.** Repeating your name and QTH is more or less mandatory, but takes no longer than phonetic spelling on phone. Also note:

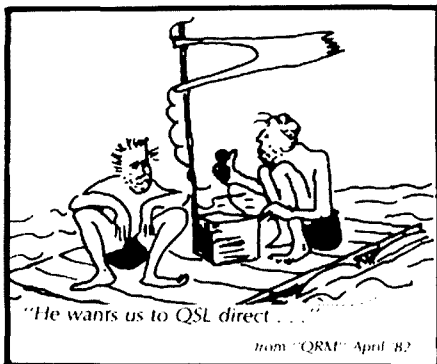
use of the ? or IMI to indicate that you are about to repeat the preceding word is highly recommended.

What should you say? Well, the old familiar "rubber stamp" QSO makes a very good building block for a CW QSO. You should at least exchange name, QTH, and signal report, and it is also customary to exchange details of rig, antenna, and weather. The order is optional, but common sense dictates that the information should be sent in order of importance. The order given above is a fairly common format, usually taking two overs to get it across. Having exchange the "standard" information, a decision has to be made whether to continue the QSO or terminate it. If you want to continue, you might ask a question about something the other station has sent, or give him your age and occupation. If you want to finish the QSO you should answer any questions you have been asked, thank the guy for the QSO, and end it.

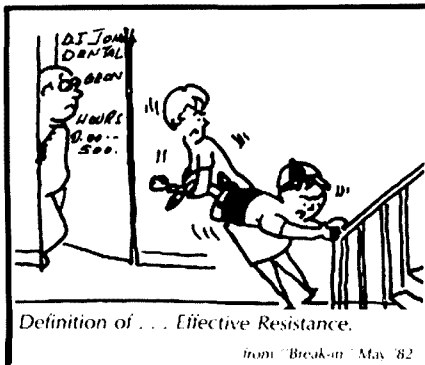
Ending a QSO seems to present difficulties to a lot of ops. You don't want to appear to be rude, but you really do want to make some more contacts. Well, the other guy is probably in exactly the same position, and he'll thank you for ending it gracefully. Once you are sure that all information has been copied adequately at both ends, all you have to say is "OK JOHN TNX FB QSO ES HOPE CU SOON BT FER NW 73 73 ES GL ES GN AR (callsigns) SK". He will respond in kind, and probably finish with "SK E E" to which you may respond with "TU 73 SK E E," after which you will hear his final "E" by way of "Cheers." Nothing to it — certainly no need to make up excuses like "the XYL wants me" or "I better go see if the tower's still standing." No muss, no fuss, and no time wasted.

Next month we'll talk about abbreviations and similar. Till then, 73 ES CU AGN.

- ... - PSE QRS means "please reduce speed to .... (WPM)." PSE QRS 10 gives the other op a lot more to go on than just "PSE QRS."



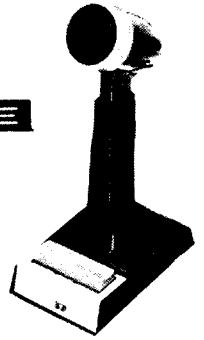
from "QRN" April 82



from "Break-in" May 82

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# COMMERCIAL REPORT

Compiled by: Gil Sones, VK3AU  
Technical Editor  
Brenda Edmunds, VK3KT  
Federal Education Co-ordinator

## VSC SOUNDPACER — MODEL C4

The VSC Soundpacer is a cassette recorder with some very interesting capabilities. Cassette recordings of speech may be played back at up to double speed without sounding like a bunch of chipmunks. The interesting thing about all this is that it is accomplished in a cassette unit only a little bigger than many cassette recorders used for dictation or recording business meetings.

The review model was provided by the local agents Hanimex Pty. Ltd. The price class is in the region of \$180. This is indeed very reasonable.

The very idea of speeding up replay and correcting the pitch back to normal was only a few years ago almost unthinkable. However recent developments have enabled such processing to be carried out in a small cassette recorder.

The recorder uses standard cassette tapes but an adapter for micro-cassettes is listed as an accessory. Thus it can be used for transcribing dictation with both major cassette types, and would be most useful as it would allow a typist to match the speed of replay to typing speed.

Applications of speeded up replay are numerous such as reviewing lectures, recorded meetings, log tapes, notes etc. Tape recorded loggings can be quickly reviewed or searched.

The speed up is at the price of some reduction of quality and a trace of processing noise but is entirely adequate for speech. Morse loggings were also speeded up but on morse practice tapes the processing noise could be heard which was masked by recorded receiver noise in tapes made off air.

The tapes used in these tests were of DX operations. It was interesting to note that a top DX operator was already speaking at a fast rate. When speeded up a top DX

operator was rattling along at a speed which would be the envy of any race caller.

One interesting feature was the ability to use just the pitch corrector without running the cassette deck motor. This is done by feeding audio input into the auxilliary input and taking audio from the monitor output.

RFI immunity was reasonable with no strange or untoward effects being noticed when the rig was operated at the 100 Watt to 200 Watt level on the 144 MHz, 52 MHz, or 28 MHz with the antennae in any direction. A really hot RF environment was not available as the reviewers tried to get the RF launched rather than crawling around the shack. These bands have been found to find the RF holes in many other pieces of gear including many transceivers in the past.

The recorder operates on 6 volts DC which may be obtained from four "C" size dry cells or from an external adapter. In operation the drain was in the region of 250 mA to 300 mA. Like most cassette recorders premium dry cells or alkaline cells would be advisable.

Operation is very simple with only four extra controls in addition to normal cassette recorder controls. A tape counter is provided to allow taped items to be indexed and cued.



Close-up view of controls.

The extra controls are an on-off switch for the processor, a switch to allow the processor to be used separately, and adjustable slide pots for tape speed and the pitch corrector.

In use, you simply start the tape adjust the volume and then switch on the processor. You must then adjust the speed control and adjust the pitch control to suit.

A short trial using the demonstration recording supplied will enable you to use the speed listening.

Also it is possible to slow down the speed by 20% but the pitch cannot be corrected in this case.

For recording operation is as for any cassette recorder with automatic level control and an inbuilt microphone. The standard external microphone and remote control jacks are provided.

The frequency response is adequate for speech and the main purpose is to provide a specialised speech recorder with the unique ability to provide speeded up playback.

The recorder dimensions are 150 mm deep, 265 mm long, and 50 mm high with a slight allowance for the difficulties in measuring any protrusions.

A most interesting development which offers a lot to anyone having to deal with recorded speech. The ability to move through recorded speech at greater speed is most appreciated by those who have had to deal with it.

As an instrument for variable speed CW practice it is perhaps less efficient. The variable speed is fine, but the pitch range is poor. On the tapes tested — DOC sample exams and practice CW from two separate operators recorded directly (i.e. not off air) — the only acceptable quality was achieved with a fairly high-pitch note. As soon as the pitch level is dropped regardless of the speed setting the dahs and later the dits start to break up and become 'spikey'. As it is usually the high frequency response that deteriorates fastest with ageing, many of the older novices prefer a slightly lower pitch which would be very hard to copy on this machine. The struggling student might be better to spend the extra money on a wider range of tapes at different speeds to be used in a standard player with variable pitch control only.

However there are many interesting possible uses for it in a normal school or college situation.

The VSC Soundpacer was provided by the Australian Distributors — Hanimex Pty. Ltd., 282 Normanby Road, Port Melbourne, 3207. All enquiries should be directed to Hanimex Offices throughout Australia.



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- IC251A** Icom 2M Multi-Mode Transceiver, 10W.
- IC451** Icom 70CM Multi-Mode Transceiver, AC/DC.

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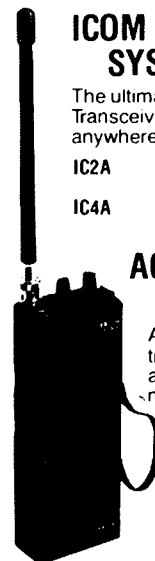
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- CX120P Vicom Coax Relay, 150W to 2.5GHz 12V DC.
- CX230 Vicom Coax Relay, 300W, 1.5GHz, 12V DC.
- CX600N Vicom Coax Relay, 600W, 1.5GHz N-type Con.

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Hands-off operation. The famous cross-needle meter provides three measurements at the push of one PTT button. And their compact size means they fit into even the most crowded shack.



- CN510 Daiwa X Needle SWR/PWR Meter 1.8-60 MHz 20/200W.
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- CN620A Daiwa X Needle SWR/PWR Meter 1.8-150 MHz.
- CN630 Daiwa X Needle SWR/PWR Meter 140-450 MHz.
- CN630N Daiwa X Needle Meter 140-450 MHz "N" Con.
- CN650 Daiwa X Needle SWR/PWR Meter 1.2-2.5 GHz.
- CN720 Daiwa X Needle SWR/PWR Meter 1.8-150 MHz.
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- CNW418 Daiwa Antenna Tuner - HF Bands.
- CNW518 Daiwa Antenna Tuner 2.5 KW PEP.



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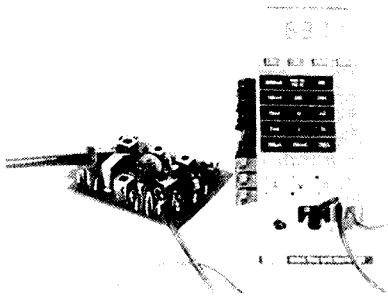
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# AR SHOWCASE



## 4½ Digit Handheld DMM Measures Frequency

Now a 4½ digit handheld digital multimeter that measures frequency as well is offered by the company that introduced the first handheld DMM in 1977. Engineering and calibration laboratories have relied on 4½ digit multimeters to provide high resolution and accuracy. Today, there is a real need for precision high-resolution measurements in the field and shop.

The Fluke 8060A true RMS multimeter is offered to fill this void in handheld instrumentation. The 8060A uses a four-bit microcomputer coupled with custom LSI to go beyond traditional five-function applications. Now, technicians can directly measure output frequencies of touch-tone oscillators and audio amplifier bandwidth with a handheld multimeter.

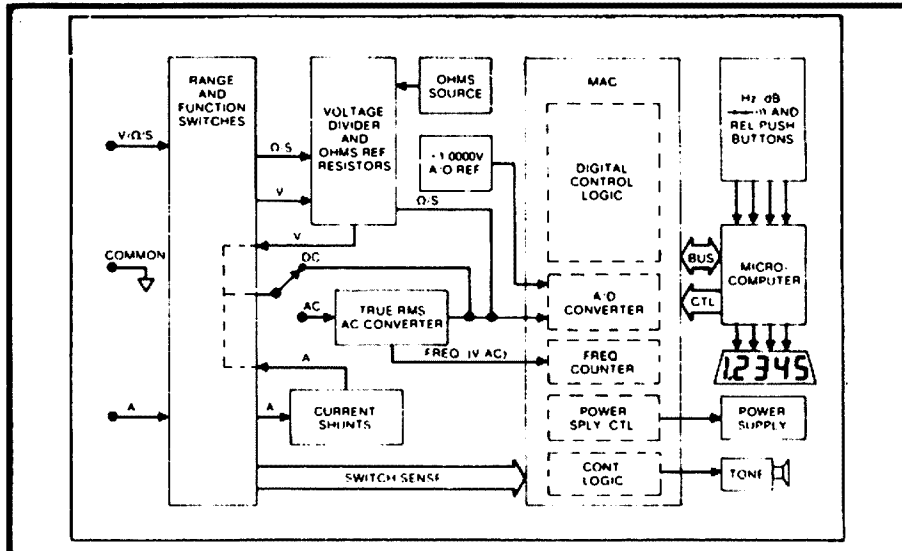
### MICRO AND CUSTOM LSI

Two major components make up the 8060A measurement system: a four-bit CMOS microcomputer and a custom CMOS LSI chip. The heart of the chip is a dual-slope analogue-to-digital converter and a digital control logic section.

Any reading on the 8060A display can be stored as an offset, or "relative reference". All subsequent readings are displayed as deviations from the stored reference. This feature is particularly useful when the absolute value of readings is less important than the amount of change.

When the 8060A is first turned on, the micro-processor tests the digital interface and illuminates all LCD elements for 1.6 seconds. Two additional diagnostic tests can be easily initiated by the radio test and a switch decoding test. The ratio test checks the A/D converter for functionality independent of any input circuitry. The switch decoding test indicates if the microcomputer is interpreting each of the eight switches and four pushbuttons correctly.

The microcomputer also monitors the in-



ternal (battery) power, and lights a display (BT) when 80% of the battery life has been expended.

### VOLTAGE

The 8060A measures dc voltage in five ranges: 200 mV to 1000 V, all full scale. Input impedance, fixed at 10 megohms in all ranges, can be increased to greater than 10,000 megohms in the 200 mV and 2 V ranges. AC voltage measurement capabilities are also found in five ranges, the highest range being 750 volts RMS. Of particular importance is the exclusive, Fluke-developed True RMS monolithic converter which provides accurate voltage measurements of non-sinusoidal waveforms. Displayed ac readings can be in volts, relative dB or in dB referenced to 600 ohms. The 8060A computes these dB readings from the linear voltage reading by a segmented curve matching algorithm. This means of dB calculation is far more accurate than the traditional log conversion which is usually implemented in hardware.

### FREQUENCY

Frequency read-outs from 12 Hz to 200 kHz is provided in four ranges which are fully autoranged under the control of the microcomputer. Frequency resolution is 0.01 Hz in the lowest (200 Hz) range and readings are updated at a once-per-second rate. The ac voltage function can be used to verify sufficient voltage (20 mV sensitivity to 20 kHz) for a valid frequency reading. Since the frequency function uses the multimeter front end, frequencies at 750 volts are safely measured.

### CURRENT AND RESISTANCE

AC and dc current measurements can be

made from 0.01  $\mu$ A (10 nA) to 2 A in five ranges. Resistance is measured in a ratio-metric mode, comparing the external unknown resistor to an internal reference resistor. All resistance measurements from 0.01 ohms to 200 kohms are low power so that resistances can be measured in-circuit. Output voltage is less than 250 mV and will not turn on semi-conductor junctions. In addition to the four selectable resistance ranges, the meter autoranges from 100 kohms to 300 megohms.

The 8060A continuity function is user selectable for visual (LCD) or visual/audible (LCD/tone) indication to allow checking of wiring and PCB traces for shorts, opens, or continuity without needing to watch the meter. To check semiconductor junctions, a constant current diode test function is provided. There is even one range of conductance, 2000 nanosiemens. The conductance function, basically an inverse resistance, range spanning from 500 kohms to 10,000 megohms, is particularly useful for making component leakage measurements or checking the conductivity of fluids and solids.

Accessories offered for the 8060A include: high voltage probes, high frequency probes and a variety of cables and adapters. Two optional temperature probes convert the 8060A into a direct reading (C or F) digital thermometer. Power is supplied by a common 9 V alkaline battery (170 hours continuous operation) or optional battery eliminator.

For further information contact Elmeasco Instruments Pty. Ltd. offices in Sydney, Melbourne, Brisbane, Adelaide or Perth.



## NEW HF NOISE REDUCING ANTENNA SYSTEM

The "Wandra" noise reducing antenna is a new HF Antenna which has been designed to allow HF Communication from electrically noisy situations, such as city and industrial locations, in which ordinary antennae operate poorly.

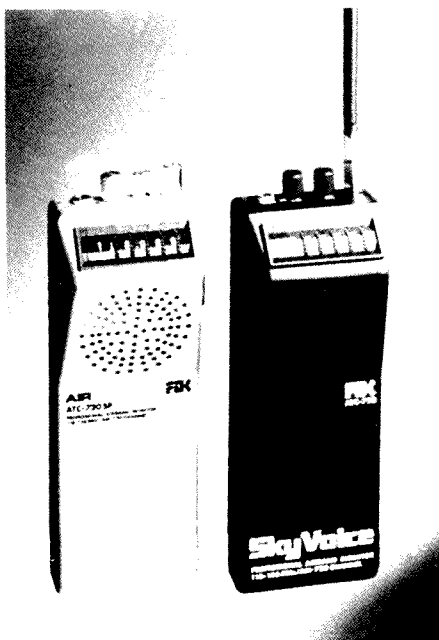
The "Wandra" allows operation on one, two or three frequencies with a preset low VSWR using automatic switching. It is a complete antenna system tuned specifically to the users frequencies and is capable of offering up to 30dB noise reduction.

The noise reduction is achieved by using a unique, carefully balanced crossed dipole radiating system with elements approximately seven metres long. Its noise reducing characteristics are at maximum on the two frequency version and all preset frequencies can be altered if necessary, at a later date, and feed impedance is 50 ohms.

Only one mast is required to mount the "Wandra" which is an attractive feature for city locations, and it is designed to stand up to natural elements as it is constructed using stainless steel, fibreglass and aluminium.

For further information contact GFS Electronic Imports, 15 McKeon Road, Mitcham, Vic. 3132. Phone (03) 873 3939.

\*WANDRA is an abbreviation for West Australian Noise Decreasing Antenna.



### AIR BAND POCKET RECEIVER

A new PLL synthesized air band monitor with 720 selectable channels for the VHF air band between 118 and 136 MHz has just been released. The channels are selected by a digital thumbwheel switch.

This compact size receiver is supplied with a flexible rubber antenna, nicad battery pack and an approved AC charger.

The receiver has a lightweight aluminium case, an adjustable squelch level to eliminate background noise and has an extremely low battery consumption which covers at least six hours of continuous operation.

This receiver would be ideal for general aviation pilots, local flying and gliding clubs.

Further information can be supplied from the Australian distributors, Vicom International Pty. Ltd., 57 City Road, South Melbourne. Phone (03) 62 6931 or 339 Pacific Highway, Crows Nest. Phone (02) 436 2766.

### NEW MARINE ANTENNA

Model CB135 from Scalar is a new design antenna for the 27 MHz Marine Radio Band. It can be used on all craft whether it be fibreglass, timber or metal, and needs no tuning as it has been factory tuned to cover all 27 MHz marine frequencies.

Comparative tests show the CB135 can be installed in close proximity to metal structures without seriously affecting performance and the entire antenna is enclosed in white tapered fibreglass radome. A white two-way plastic mount is supplied for deck or bulkhead mounting and is adjustable through 90 degrees in either direction to enable the antenna to be lowered for trailing. It is a shorter antenna than most others on the market which overcomes objections many boat owners have of excessive length and inconvenience.

The whip top is demountable from the base to allow for replacement of the antenna section should damage occur.

Performance is not affected by cable length and the cable may be cut or lengthened to adapt to a customer's particular installation.

As background noise, quite often caused by the antenna itself or at least exaggerated by it, can be the difference between hearing or missing an urgent signal, Scalar Technical Department has given special attention to this aspect and the CB135 is extremely quiet in operation.

The new CB135 is available from all Scalar Offices in Melbourne, Sydney, Brisbane or Perth.

## WIA INSERTS INTO AR



### NOTICE TO WIA ZONES, CLUBS AND GROUPS

**WIA Zone, Club and other Group Secretaries are hereby notified that inserts into AR henceforward will be accepted ONLY direct from a Division and then only by prior arrangement with the Secretary.**

**All inserts must comply with Postal Regulations and must be received not later than the 26th of the month preceding publication date.**

## Health Hazards from Hand-Held UHF Transceivers?

Jim Button VK2NPA  
9 Mulberry Street, Loftus 2232, NSW  
From "Dragnet" January 1982

From time to time the question has been raised concerning possible health hazards from hand-held UHF transceivers because the persons using these are in the immediate microwave field from the antenna. This matter was raised in the UK in the context of the UK proposed CB (or "Open Channel") radio service on UHF. In December 1980 the UK National Radiological Protection Board issued the following statement on this matter. The statement is of course equally applicable to UHF transceivers used by radio amateurs.

### "HEALTH RISKS FROM 'OPEN CHANNEL' RADIO

Objections have been raised to the UK Government's preferred frequency for a public "Open Channel" radio service (around 928 MHz UHF) on the grounds of possible health hazards. The specific dangers cited are the induction of brain tumours and cataracts in the eyes.

The UK National Radiological Protection Board considers that there is no scientific evidence that exposure to microwaves or radio frequencies will cause brain tumours or other cancers or that there is any evidence which indicates the existence of special hazards from radiation in the frequency range 150 to 1200 MHz.

Exposure to very high power levels of microwaves has been shown to cause cataracts in animals and may be inferred to give rise to a similar effect in humans, but the exposure must be such as to raise the temperature of the eye by at least 4°C for more than ten minutes. The normal temperature of eyes and body fluctuates daily by about 1-2°C, and possibly more under the influence of physical exertion. For hand-held radio transmitters with total effective radiated powers of less than 3 watts, studies indicate that the temperature rise in the eyes will not be more than 1.0°C when their aerials are held no closer than 1 cm to the face, and the transmitter operated continuously for several minutes. Direct comparisons between hand-held transmitters has shown little difference in the total power absorbed by the head at 150 MHz, 450 MHz and 900 MHz or in the maximum values of the power absorption. There is no reason to expect significantly different results at other frequencies in this range.

There is unlikely to be any direct danger to health from hand-held transmitters used for the "Open Channel" communication in any part of the radio frequency spectrum, when the effective radiated powers are less than 3 watts and the transmitters and their aerials are kept more than 1 or 2 cm from the head. In the case of mobile transmitters with effective radiated powers of 25 watts it would be inadvisable to place the head closer than about 10 cm to the aerial for any length of time."

# SAVE A FORTUNE ON SCANNERS

Why pay \$500 or more for a scanning receiver? Dick Smith has them from \$285! Get into the exciting world of scanning - it's the latest and fastest growing hobby in the world!



★ The new **DICK SMITH PRO 40 SCANNER**

Compare with similar performance elsewhere at nearly twice the price! The new PRO 40 Scanner from Dick Smith represents the state-of-the-art in computerised scanning receivers!

★ Completely solid state computer-controlled circuitry — no expensive crystals to buy — complete with backup battery for stored frequencies.

★ Specially prepared Australian instruction manual (written and produced by our own engineers). Other scanners often have hard-to-understand foreign instruction manuals.

★ Touch-type splashproof keypad for direct entry of all operational commands, frequencies etc.

★ Ideal as either a base or mobile scanner (operates from 12V — beware of others that don't operate from 12V!) with its own self-contained whip antenna or external plug-in antenna.

★ Complete with mobile mounting bracket and DC power cable.

**LOOK AT THESE SPECIFICATIONS:**

|                     |                                              |
|---------------------|----------------------------------------------|
| Frequencies covered | 68 to 88MHz — 136 to 174MHz — 360 to 512MHz. |
| Scanning steps      | 5, 10, 12.5, & 25kHz (depending on band)     |
| No. of channels     | 40                                           |
| Power supply        | 12 to 16 volts DC (battery memory backup 9V) |
| Scan rate           | Approx 18/sec                                |
| Cat D-2805          |                                              |

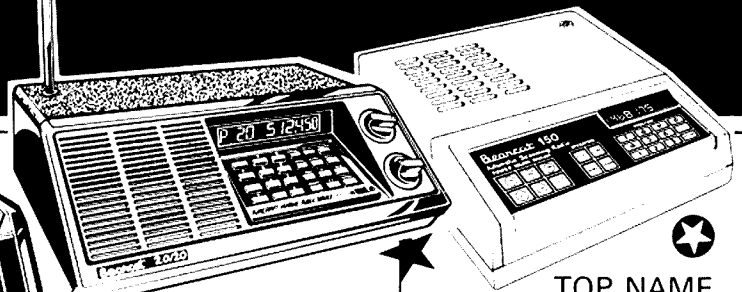
**AND LOOK AT OUR LOW, LOW PRICE**

★ **\$399** ★



★★ Dick Smith's **Australian Radio Frequency Handbook**

Enter the exciting world of scanning with this superb book. Covers everything you could possibly want to know about scanning. Watch our ads for further details.



★ **FAMOUS BEARCAT 20/20 SCANNER**

Catch all the action with this incredible receiver! It covers most of the VHF and UHF bands.

**Listen to ...** Aircraft, amateurs, pagers, business radio, marine and harbour, UHF CB, taxis and more. Cat D-2810.

**WHY PAY MORE? ONLY \$485**

★ **TOP NAME BEARCAT 150 FB SCANNER**

Listen to an amazing range of stations — ones you never get to hear. It's the latest hobby all over the world, and it's now in Australia.

**You can hear ...** Fascinating broadcasts, emergency services, taxis, ambulances, security patrols, aircraft, satellites and more. Cat D-2800

★ **\$285**

★ **LISTEN TO THE WORLD**

AMAZING RANGE!

WITH THE **FRG 7700SW**

If you want the most up-to-date short-wave communications receiver in the world, you want the Yaesu FRG 7700SW. Complete short wave coverage with ease of operation others only dream about. Features include timer, optional memory unit, all mode including FM, digital frequency readout with digital clock plus more. Cat D-2841



A **LOW LOW \$499**

**SPECIAL: FRG 7700 MEMORY UNIT (D-2842) WAS \$149.50 NOW \$129.50**

★ **SAVE \$40!**

**HORNET II 40 ch AM/SSB**

The latest in 40 channel CB technology. The quality of this unit is even better than the high standard set by its predecessor, the Hornet I. our most popular CB ever!

★ **ONLY \$239<sup>50</sup>**



★ Cat D-1710  
DOC APP  
NO. 249A006

**Short wave Antenna Kit**

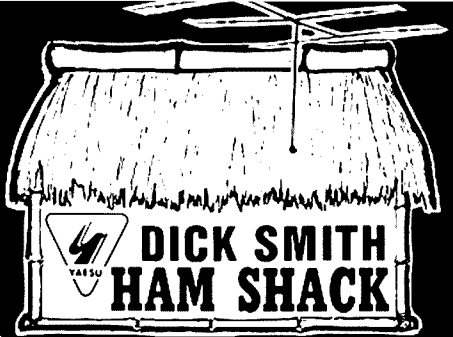


Get the best reception from your receiver with this high quality shortwave antenna. Complete and ready to assemble and needs no soldering. Cat K-3490

**ONLY \$10.75**

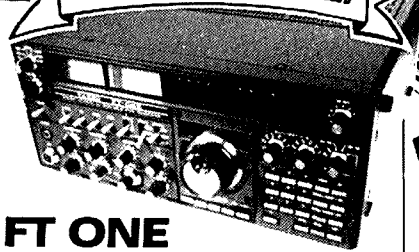
# DICK GETS FULL LICENSE VK2DIK

After 20 years, Dick has got his full license, and is going crazy on HF. He talked to everyone on the first leg of his flight. If you missed out — catch him on the second leg.



**DICK SMITH HAM SHACK**  
Dick Smith Ham Shacks are located in the Dick Smith stores listed below. You'll find a licensed amateur at each shack — someone who can talk your language and give you any help you need. (Amateur items also available at other Dick Smith stores.)

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### FT ONE

Top of the line transceiver, it's got everything — SSB — AM — RTTY — CW — FM\* — 100W PEP — Built in power supply. General coverage 150KHz - 30MHz. Cat D-2852

ONLY \$1995



### FT480R

'The Total Performance' machine. You get more than you'd expect. FM, SSB & CW over the full 2 metre band, with 2 VFO's, scanning and more. Cat D-2887

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TOP 2m RIG FM, CW & SSB



FT 230R 2m ONLY \$369

Super compact FM 3/25 watt synthesised - LCD - 2 VFO's - 10 memory plus scanning. It's out of sight 2m radio!! Cat D-2893



### FT 208R 2m

FM - hand held, 800 chan loaded with features. LCD, 10 memories, scanning, hi/lo power, touch tone, memory backup, and comes complete with charger and battery. Cat D-2889

WAS \$368 only \$339



**FL 2050 2m linear**  
70 watts output for 10 watts input. Great for mobile 13.8V operation. Perfect with our FT 480R and hand helds. Cat D-2547

WAS \$239 NOW \$199



### FT 290 R 2m

All mode — scanning portable plus LCD plus 2 VFO's plus 10 memories plus hi/lo power plus built in antenna plus NB plus memory backup. Cat D-2885

and it's only \$349

WAS \$395

## DEMO & STORE STOCK SPECIALS — YOU SAVE!!

Making room for new stock - Full 12 mth warranty

| Item                                                     | Description                  | Cat No | Was        | Now    |
|----------------------------------------------------------|------------------------------|--------|------------|--------|
| FT207R                                                   | 2m hand held - not many left | D-2888 | \$358      | \$235  |
| FT2                                                      | Mobile charger for FT207R    | D-2894 | 29.99      | 19.95  |
| <b>SPECIAL OFFER BOTH OF THE ABOVE FOR ONLY \$246.90</b> |                              |        |            |        |
| 11101M                                                   | HF TX at solid state         | D-2853 | ONLY \$850 |        |
| FT230RHM                                                 | 2m-25 watt TX scanning       | D-2890 | 449.95     | 369.95 |
| FT101Z                                                   | Digital readout 101 WARC TX  | D-2859 | 910.00     | 850.00 |
| FT271RB                                                  | 2m with scanning 10 watt     | D-2896 | 379.00     | 319.00 |
| FT0702M                                                  | Digital VFO for FT107        | D-2896 | 299.00     | 265.00 |
| MW62                                                     | Mobile bracket for FT107     | D-2897 | 36.00      | 25.95  |
|                                                          | Gibraltar paddle             | D-1103 | only 14.95 |        |
| FT902D                                                   | HF WARC TX 180 watt          | D-2853 | 1195       | 995    |
| FT901D                                                   | HF 180 watt TX               | D-2854 | 1075       | 950    |

**SPECIAL PACKAGE with FT 901D or FT 902D Bonus DC Converter (D-2856) while they last!**

**SPECIAL DEAL FT 902D (D-2853) plus FC 902 (D-2855) plus DC conv. (D-2856) for \$1195 - while they last!**

**SPECIAL DEAL FT 901D (D-2854) plus memory (D-2858) included for only \$1025 (\$1283 value!)**

DC-DC Converter for FT901/902 D-2856 69.00 49.00

Memory for FT901/902 D-2858 139.50 99.00

FT101Z(H) HF WARC FM TX D-2877 only 885.00

FT101Z HF WARC TX D-2867 849.00 795.00

**SPECIAL DEAL with FT101Z (fm) (D-2872) or FT101Z (D-2862) 101 counter unit (D-2861) FOR ONLY \$1011!**

**THAT'S AN UNBELIEVABLE \$142.50 VALUE — FOR \$101! CRAZY DICK!!!!**

**HOT PACKAGE FTV707 (D-2876) plus 2 mtr module (D-2877) for only \$244 (that's \$294 value!)**

**LIMITED STOCKS ON ALL THESE ITEMS — RING JIM POWELL (02)888 3200 — HE KNOWS WHERE ALL THESE CRAZY SPECIALS ARE FROM CRAZY DICK !!!**

\*\*\*\*\*  
**SAVE OVER \$300!**  
\*\*\*\*\*  
**FT 107M/DMS**  
\*\*\*\*\*  
A masterpiece of solid state engineering - you only have to take off the cover and look inside to see the care and thought has gone into the design. HF-WARC band coverage, of course, in all normal modes (FSK included). A massive 240 W PEP equal plus all the features you would expect from Yaesu. Great as a base or mobile. 13.5V and 240V supplies are built in. Everything you could want in a transceiver. Cat D-2871  
\*\*\*\*\*  
**WAS \$1328 NOW \$999**  
\*\*\*\*\*  
**FC 107 ANTENNA COUPLER** Cat D-2873 \$205  
\*\*\*\*\*



### FT 102 HF ALL MODE TRANSCEIVER

New from Yaesu and Dick Smith. Look at these great features. Unique recessable controls for VOX GAIN, DELAY, MIC GAIN, processor COMP, NB LEVEL and FM SQL - dual meter allowing much more all around operating convenience. novel chassis design and rugged cabinet construction AND MUCH MORE. Come in and check it out! Cat D-2880

\$1225

**ANTENNA COUPLER**  
Power handling capability of 1.2kW  
Cat D-2881

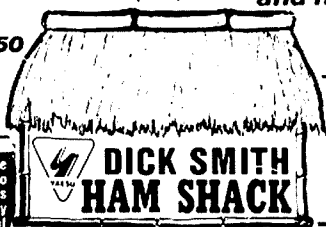
\$319

**EXTERNAL SPEAKER**  
with special audio filters. Cat D-2883

\$7250

**AM/FM PCB**  
Cat. D-2882

\$7250



**DICK SMITH HAM SHACK**

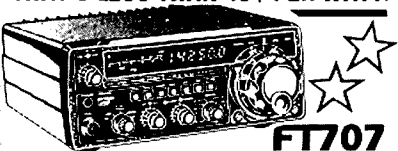


### FL2100Z 1.2kW LIN. AMP

For the amateur who wants to push out a strong signal. Easy to operate. Cat D-2548.

\$580

**THAT'S LESS THAN 49¢ PER WATT!**



### FT707

What a performer packed into such a tiny package! All HF bands (incl. WARC). Check it out! Cat D-2869

WAS \$798 ONLY \$775

### V5JR 5 Band Vertical

Virtually unnoticeable in your backyard, this is a highly effective antenna. Covers 80-10m. Cat D-4305

\$995

Sydney 125 York St. 290 3377 • Sydney 6 Bridge St. 27 5051 • Gore Hill 439 5311 • Melbourne 399 Lonsdale St. 67 9834 • Springvale Dandenong Rd. 547 0522 • Richmond 656 Bridge Rd. 428 1614 Brisbane: Buranda 166 Logan Rd. 391 6233 Chermside 842 Gympie Rd. 596255 • Perth 414 William St. 328 6944

A325M/LM

The stores at right stock this complete list of Dick Smith Amateur Radio equipment. All other Dick Smith stores stock some amateur equipment but may not be able to give you the service of "Ham Shack" stores listed.



# CONTESTS

Reg Dwyer, VK1 BR  
Federal Contest Manager  
P.O. Box 236, Jamison, ACT 2614

## CONTEST CALENDAR

### OCTOBER

- 2-3 VK/ZL OCEANIA CONTEST PHONE AR
- 9-10 VK/ZL/OCEANIA CW AR
- 10 RSGB 21/28 MHz PHONE
- 16-17 JAMBOREE ON THE AIR
- 16-17 ARCI QRP DX
- 17 RSGB 21 MHz CW
- 20-21 YLRL ANNIV CW
- 30-31 CQ WW DX PHONE AR

### NOVEMBER

- 3-4 YLRL ANNIV. PHONE
- 6-7 ARRL CW SWEEPSTAKES
- 7 CZECHOSLOVAKIAN CONTEST
- 13 ALARA'S SECOND CONTEST
- 13-14 EUROPEAN RTTY
- 20-21 VK VERSUS THE WORLD QRP CW
- 20-21 ARRL PHONE SWEEPSTAKES
- 27-28 CQ WW DX CW

### DECEMBER

- 4-5 ARRL 160m CONTEST
- 11-12 ARRL 10m CONTEST

## ALARA CONTEST 1982

### ELIGIBILITY:

All licensed operators throughout the world are invited to participate. Also open to SWLs.

### OBJECT:

PARTICIPATION! YL works everyone, OM works YLs only. One contest (combined phone and CW) run over 24 hours.

### STARTS:

Saturday 13th November 1982 at 0001 hours UTC

### ENDS:

Saturday 13th November 1982 at 2359 hours UTC

### SUGGESTED FREQUENCIES:

All bands may be used. The following are suggested frequencies for easier location of contacts:

|                        |                  |
|------------------------|------------------|
| CW 28.100 to 28.110PH. | 28.480 to 28.520 |
| 21.125 to 21.135       | 21.180 to 21.200 |
| 14.050 to 14.060       | 21.350 to 21.370 |
| 7.010 to 7.020         | 14.180 to 14.200 |
| 3.525 to 3.535         | 14.280 to 14.300 |
|                        | 7.100 to 7.120   |
|                        | 3.570 to 3.590   |

### OPERATION:

Phone and CW operation: Each station may be counted twice on each band for credit: once on phone and once on CW.

All contacts must be made in accordance with operator and station licence regulations. No net or list operations, no cross-mode. No repeater contacts may be claimed.

### PROCEDURE:

Phone: call "CO ALARA CONTEST" CW: call "CQ TEST ALARA".

### EXCHANGES:

ALARA member: RS or RST serial number starting at 001 ALARA member name

YL non-member or OM: RS or RST serial number starting at 001 name.

### SCORING:

Phone: 10 points for ALARA Club Stations contacted (VK2DYL, VK3DYF), 5 points for ALARA member contacted, 3 points for YL non-member contacted, 1 point for OM contacted.

CW: Double all points for CW contacts

SWL: 5 points for ALARA member logged, 3 points for YL non-member logged.

### LOGS:

Single log entry. Logs must show: date/time UTC, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked, and points claimed.

LOGS MUST BE SIGNED. Logs also to show full name, call sign and address of operator, and show final score (points claimed). Logs must be legible, either typed or printed. No carbon copies. No logs will be returned. Decision of the Contest Manager will be final. Logs must be received by the Contest Manager by 31st December 1982.

### SAMPLE LOG:

| Date/time UTC | Band MHz | Mode | Call sign | RS(M) & serial No. sent | RS(M) & serial No. recd. | Name      | Points |
|---------------|----------|------|-----------|-------------------------|--------------------------|-----------|--------|
| 13/11 0135    | 28       | SSB  | VK3DML    | 59001                   | 58028                    | Margaret  | 5      |
| 13/11 0141    | 21       | SSB  | VK2DYL    | 59002                   | 59037                    | Geraldine | 10     |

### CONTEST MANAGER:

Mrs. Margaret Loft VK3DML, 28 Lawrence St., Castlemaine, Victoria, Australia 3450.

### CERTIFICATES:

Will be awarded to the following:  
 Top score ALARA member in each country and VK call area  
 Top score YL non-member in each Continent  
 Top score OM in each Continent  
 Top score SWL in each Continent  
 Top score VK Novice

### 1982 VK versus THE WORLD CW QRP CONTEST

Sponsored by the VK CW QRPp CLUB (Member of the WORLD QRP FEDERATION) this contest is directed to all CW enthusiasts WORLD-WIDE who elect to tackle that extra challenge! Contestants may work DX or OWN COUNTRY for scoring!

QRO stations are invited to participate but must submit contest logs with QRP stations only to qualify for the QRO section of the contest.

QRP stations must sign ... "QRP" ... for identification.

### DATES:

Saturday Nov. 20 and Sunday Nov. 21, 1982.

*Australian Ladies' Amateur Radio Association*





awards this certificate to

.....

for

.....




DURATION:  
Total of 48 hours (0000UTC Nov. 20 to 2400UTC Nov. 21).

MODE:  
CW ONLY

CONTEST CALL:  
"CO QRP TEST"

BANDS:  
160m-10m (WARC BANDS NOT ALLOWED)

SECTIONS:  
Station categories:  
QRP: Single Operator: Multiband or Single-band.  
QRP: Multi Operator: Multiband or Single-band.  
QRO: Single Operator: Multiband or Single-band.

Period categories  
FULL PERIOD: 48 hours  
HALF PERIOD: ANY 24 consecutive hours.

EXCHANGE:  
All Stations: FIVE DIGITS RST report plus IARU ZONE NUMBER

SCORING:  
QRP Stations i.e. indicated output power into antenna NOT EXCEEDING FIVE WATTS ... each contact shall score points based on the following table:

|                        |            |
|------------------------|------------|
| 0 - 1 watt             | : 6 Points |
| Over 1 watt - 2 watts  | : 5 Points |
| Over 2 watts - 3 watts | : 4 Points |
| Over 3 watts - 4 watts | : 3 Points |
| Over 4 watts - 5 watts | : 2 Points |

QRO stations using more than 5 watts out-put to antenna: ONE POINT PER CONTACT (QRO/QRP only allowed)

MULTIPLIERS:  
Every contact in a different IARU Zone counts as a multiplier on each band.

BONUS SCORE:  
Field Stations using battery/solar/wind/hand generated power (motor generators excluded) ... multiply the Grand Total Score by 1.5.

CONDITIONS:  
Stations may be contacted ONCE ONLY on each band. Separate log sheets required for EACH BAND. Each logged QSO to show: Date/Time UTC ... Station worked ... Exchange (Sent/Received) ... Multiplier ... Power output ... Points claimed.

GRAND TOTAL SCORE = Total points from all bands x Total multipliers from all bands (x Bonus Score)

All entries MUST have a FRONT SUMMARY SHEET showing: Calculation of Grand Total Score; Name and Address;

Call sign; Signature and Declaration ... "I certify that all entries in my contest log sheets are true and honest."

Entrants are requested to include a brief description of station equipment and any comments/suggestions. Field stations are requested to include a brief description of operations/location/conditions etc.

CERTIFICATES:  
To the QRP Single Operator and Multi-Operator in each Country with the highest Grand Total Score in each section.

To the QRO operator in each country with the highest Grand Total Score in each section.

To the highest scoring VK CW QRPp CLUB MEMBER IN EACH SECTION.

CONTEST ENTRIES TO BE ADDRESSED TO:

CONTEST MANAGER ... VK CW QRPp CLUB P.O. BOX 109 ... MT. DRUITT, N.S.W. 2770 AUSTRALIA.

All entries must be in the hands of the Contest Manager not later than end-January 1983. Results will be available by end-February 1983 and posted to non-member contestants for 1 IRC (DX stations) or a 27-cent postage stamp (VK stations).



## LA Police Use Amateurs

Police officers at Los Angeles International Airport (California) figure if they ham it up a little, they might reduce a chronic problem of automobile thefts.

The Los Angeles Police Department (LAPD) is trying a pilot program using Amateur Radio operators as volunteers in surveillance at the airport's parking structures.

"What we want them to do is be our eyes and ears," said Lt. Paul Wright, commanding officer of the LAPD's airport substation.

If the amateurs see a crime in progress — or even if they just see someone acting suspiciously — Wright says, they will contact the substation and a regular police unit will investigate.

"We'll put them on the parking structures," Wright said. "They'll be able to observe the sidewalk areas and into the terminals, too, to watch for baggage thieves."

The program has proven successful in Hollywood in the last six months, says Officer Frank Pettinato, an amateur operator who supervises the volunteers there and who will work with the same group at the airport.

"Amateur Radio operators have a unique means of communication," he said, "by being able to carry a hand radio around with them."

The amateurs showed their usefulness, Pettinato says, during a hostage situation at a Hollywood hotel some time ago.

Some of them were on the hotel roof, watching the parking lots below, when they

heard gunshots and called the police station.

Under normal circumstances they would have ended their involvement at that point, but Pettinato says the regular police emergency frequencies were jammed, so the officers used the Amateur Radio frequency instead.

Pettinato says the amateurs are instructed to use a telephone if possible to call in routine information. He says a federal law prohibits the use of Amateur Radio frequencies for "business-type" communication.

"But once a crime is in progress they can use their radios," he said.

Pettinato says ten amateurs are used at any one time, usually all of them in a one-block area where there has been a particular problem with auto theft or robbery.

"We tell them not to get involved in any police action directly," he said. "They don't have the power to arrest."

The amateurs' first night at the airport was Friday, 31 July 1981 with Pettinato there to supervise. He said there would be a two-week evaluation period.

During that period we'll go out on week-ends," he said. "If we can prove we're doing some good, we'll be there on a regular basis."

About 30 or 40 amateurs are involved in the program, Pettinato says, and other areas in the city may use them if the program continues to be successful.

Wright, the airport substation commander, says auto and baggage thieves "are very

difficult to catch."

"It takes a lot of time and patience," he said. "But if we can use them, we won't have to use an officer to just sit and watch for this type of activity."

Norm Friedman of Encino, California has been working in the Hollywood program since its beginning. He was one of the amateurs at the Hollywood hotel during the hostage situation.

"It's just something to help the people out," he said. "The Police Department is on a closed budget and they can use the extra help."

*Reprinted from: World Radio, Oct '81.*

**Ed. Note: Should Australian Amateurs be directing their talents on a similar note??? Write to me with your ideas.**

**Bruce, VK3UV.**

### The Psalm of Radio

*Radio is my hobby; I shall want no other.  
It maketh me to stay home at night.  
It leadeth me into much trouble.  
It draweth on my purse (What purse?)  
I go into paths of debt for its name's sake.  
Yea, though I understand it perfectly,  
it will not oscillate.  
The different kinds of notes, they comfort me;  
It will not work in the presence of mine enemies. (Or anyone else).  
I anoint the coils with shellac,  
But the tube spilleth over.  
Surely the radio bug shall not follow me  
all the days of my life:  
For if it does, I shall dwell in the house of poverty FOREVER.*

*Amen. (Anonymous)*



# LISTENING AROUND

By Joe Baker, VK2BJX, Box 2121 Mildura VIC 3500



**All who engage in the hobby of shortwave radio, be it as a licensed amateur operator, or as a shortwave listener, are linked by a common bond which transcends social and religious barriers, links teenagers to "oldies" and gives us untold joy, whether we are well or disabled. And it brings great comfort to all. The following story will illustrate just what I mean.**

A short time before last Easter, some of us on the Cocktail Net were discussing the impending activities of America's Skylab, and speculating on what coverage was being given that event by the Voice of America. I particularly wanted to know the frequencies and times of the VOA coverage, and nobody on the net seemed to know. Unknown to me at that time, a 74 year old shortwave listener, Lance Rowe of 48 Webster Street, Ballarat, did know and when he heard me give my phone number at the end of one of my transmissions, he gave me a call, supplying the required information. To make that call he had gone out in the very early hours of a wet Ballarat morning to ring me from a public phone, and little did I know at that time that this was the first and last time that I would ever hear Lance's voice.

After this phone call, there was months of silence when nothing further was heard of Lance until 23rd of May when I received a letter from Lance's sister Mrs Lola Clark of 10 Gordon Terrace, Morphetville S.A. who wrote in part: "You no doubt will be very surprised to receive this letter from me but I have a sad duty to inform you that Lance died on 29 March."

*"I am his only sister, and found Lance's unfinished letter to you on his desk...."*

*"I am sorry, I should have written to you long before this, but with the Easter Holidays, Mothers Day and the school holidays, I also felt that I needed a little time to sort myself out also, but although life must go on, I miss Lance very much.*

*"My husband and self had written to Lance and made arrangements to go over to Ballarat for two weeks as we usually went over once or twice a year. We arrived as planned after lunch on Monday 29th (of March) and thinking that Lance was asleep (in another room), just made ourselves a cup of coffee and set about reading the paper while waiting for him to wake up. However, as time passed, I decided that it was time he knew we were there as the afternoon was getting late. But when I went to wake him, I found he was not with us any more.*

*"(A doctor was called) and the doctor said that Lance had died in his sleep in the early hours of the morning. This was a shock for us but wonderful for Lance as he*

*died peacefully in sleep and living alone we were able to find him so soon after. I now feel that everything was for the best.*

*"Lance did enjoy your conversations on the air. Sometimes when we have been in Ballarat, I also have listened in to you and 'the boys' as Lance called you all" (Apparently referring to those on the Cocktail Net).*

*"Lance was a South Australian who settled in Ballarat."*

Upon hearing the news of Lance's death, I contacted VK3NIO, Hank of Ballarat, who after a great deal of effort, checked in the Ballarat Radio Club to find if anyone knew about Lance, but he was unknown to members of that Club and did not have a shortwave listener's "L" number. So there was nothing anyone could do. Hank is very upset at the fact that there in Ballarat, living by himself and aged 74, was a shortwave listener, that nobody knew about. Had Lance let one of us know earlier of his existence, things might have been so different. Here is part of Lance's unfinished letter to me, which was sent by his sister.

*"Now who is this Rowe bloke, you well may ask because hearing from a stranger by phone or letter would be as tantalising as speaking to someone who refuses to remove his dark glasses in conversation or talking from a dark interior through a fly-wire screened door, so I shall open the door wide and let the light in.*

*"Well, I am a bachelor living alone and am 73 years of age. I do not cultivate many friends - being a bit of a loner if you like - and perhaps a 'snob' - being well satisfied with my own company, and am never, repeat NEVER lonely. I enjoy the company of radio and the friendship one derives from it, both on AM, long wave and SW. Am also a keen reader, abhorring fiction but finding great pleasure in biographies, exploration and history (English, Australian and European with a little Oriental thrown-in) Ballarat provides a marvellous collection of books not excelled anywhere out of Melbourne.*

*"However, I am not-may I stress, an academic - far from it being just an ordinary bloke who is interested in anything and everything, with a high value placed on, sedentary tranquility and being 'left alone' to do as I please when I please. These pleasures can be indulged in to the full when one lives alone - inconveniencing no one rather to the consternation of some of my delightfully pleasant and" .....here the letter ended.*

*In an earlier part of the letter, Lance wrote "It is a pity that TRUNK-LINING precludes more frequent calls as there are occasions when I would like to have an*

*'over' but not being an amateur am unable to make contact - sometimes rather frustrating."*

Relating to the one and only phone call that I got from Lance, he wrote "Unfortunately my phone call on the night of the Skylab launching achieved very little because by the time you had told the (Cocktail) group, and I had made up my mind to ring, the craft was in the air and the station had ceased transmission. However, the contact did at least break the ice - a step I had so often contemplated."

He goes on to say that my signals were always received well in Ballarat and gives details of his own equipment which included a Kenwood R1000. He mentions also having listened to Gordon (VK5HM) and Bronte (VK5KV) many times and goes on as follows:

*"Ballarat is geographically placed on a plateau, being 1416 feet above sea level, so that except for a few little lumps and hollows there are few natural barriers between your QTH and my antenna. My set is 'just ordinary' but seems to have roughly the same qualities as the reports given by others to others on the same night....I am using a long line wire about 95 feet of 7/044 hard drawn copper roughly centre tapped, with a 7/029 vertical lead in, and up at 26 feet at one end and 28 ft 6 at the other. On this set (being all-band) the Americans and England and Europe come in at room strength regularly if the bands are at all open on 20 metres, while 80 metres is never any trouble. In fact even for USA at times, I use no aerial at all if the static is bad beyond about 3 feet 6 or 4 ft of aerial dropped down behind the set after disconnection from a terminal block on the wall. There is however an aerial tuner between the leads and the set."*

As Lance Rowe never had a call-sign, one could not say that his demise was that of a "Silent Key" but what a wonderful person he must have been. I wonder how many other shortwave listeners there are out there who listen to us nightly on 80, and have never taken the trouble to let us know they are sitting there by their radios.

Ever since this episode, VK3NIA Hank at Ballarat, and myself have been asking shortwave listeners to let us know that they intend (to use a bit of CB slang) "have their ears on." Hank was a little disappointed at not having had much response until early this morning (24.8.82) but I have had letters from listeners letting me know that us night owls do indeed have an unseen audience.

While I was on the air early this morning 24.8.82 talking to VK5HM Gordon, and VK3NIA Hank, my phone rang and I thought it might be my longtime friend Reg Golding in Broken Hill whom I've so far unsuccessfully tried to talk into getting his amateur license. But the phone call was not from Reg, but

## HANDS ACROSS THE SEA

from shortwave listener L60935 John, of Perth, Western Australia. John said he would like to talk to Hank, and asked me to get Hank to mention his phone number so that John could talk to him direct. I asked John how he had got hold of my phone number which I often give on air to encourage SWLS, but he said he had not heard it on air, but checked my details in the call book against a phone directory and got it that way. No sooner did Hank give John his phone number over the air, than John was on the phone right across Australia to Hank, hence one more friendship via amateur radio has been cemented.

It might be of interest to know, that I myself came into amateur radio via CB about 1978, and before getting my first call VK2NIM, used to listen to that well known advocate for all things South Australian, VK5HM in contact perhaps with Bronte VK5KV, and I made the resolution that as soon as I was able to surface with a call sign, VK5HM would be one of the first that I would contact. That in fact did happen. Then Hank, an ex-truckie from Holland began listening to me with Gordon and Bronte, and as soon as he got his call-sign, I was one of his first contacts. Now we have John (L60935) over there in Perth who this morning was listening to the rest of us, and when he gets his call he will be joining our happy band. IT'S INFECTIOUS — THIS AMATEUR LARK — ISN'T IT? Cheerio for now.

73 Joe VK2BJX

What is Amateur Radio? Is it sitting in pile-ups, thumping it out for the elusive DX station, or the dedicated QRPer trying for the Miles per Watt record? Is it the maritime mobiles keeping contact with their loved ones? Amateur Radio is all this and more, but the greatest thrill the hobby can give is a personal "eyeball QSL" - the first face-to-face meeting of an old friend of the "airwaves" from the other side of the world.

One such occurrence has happened to me and believe me, its the richest experience an amateur can get from his hobby.

My story starts in 1977, when as a Novice I would make an occasional furtive attempt at working DX on my very rough CW fist (with the aim of increasing speed to upgrade the ticket), and as my speed and "fist" were nothing to get excited about, I found a haven ... the U.S. Novice bands where I found that when I called "CQ de VK2NPI" at 7-10 wpm, I received a reply - gratefully at the same speed not 25 wpm.

I had an answer to a CO one day which proved to be Dick Brinkman, KA6AHD - also a Novice - and I learned that I was Dick's first DX and his first VK (Dick had worked a lot of USA but not VK), so we ragchewed as much as our limited CW allowed us and made a sked for the next week.

I mailed my QSL card direct (as did Dick) to Simi Valley and we both put a few notes with the card. It appears Dick and I were the same age and with each of us having a young family, each found we had a lot in common.

We made contact fairly often and also corresponded, exchanged a few photos and generally kept in touch. (I might add that Dick only sent photos of his shack!)

The big news happened in November 1978 when KA6AHD became N6AYV and VK2NPI became VK2DAB ... we both made the UPGRADE in the same month. Now the skeds came thick and fast on the newly shared phone bands and the ragchews grew longer, I felt a great friendship for N6AYV that one only builds up rarely on the air, despite the many great guys one meets on "air".

The chance to meet Dick in person came in October 1980, when, after selling the business I was in, I had a chance to have a short trip to the United States with my family before starting a new venture; so with Lucy (YF) and harmonics Brad (12) and Anita (8) in tow, we headed "Stateside" armed with a TR2400 and a FCC Permit, and took on a rush "West Coast" holiday.

The moment finally came in downtown Los Angeles when, after talking "in" Dick on 2 meters, I was greeted with what could only be called my double. A short, stout (Lucy and Caroline (Dicks XYL) refer to it as "cuddly"?) bearded guy with a big smile. I couldn't believe it — here was my "airwaves" mate Dick, N6AYV.

We were whisked away to Dick's QTH in Simi and the families got together - the kids exchanging stories, the wives becoming good friends with new-found common interests.

Our stay in the USA was short, but made memorable by the hospitality, the trips here and there, the Halloween dinner we had never experienced before, Caroline's pumpkin pie (we "bake" it "down under"), the trips to the other Simi shacks, the many icy cold beers (a habit which Dick enjoys and VK's are known for) and the general good will generated by the Brinkman family.

Well, we returned home to Griffith and the skeds continued with renewed vigour, and then one Saturday, Dick dropped the bombshell, "Pete, I think I'll take you up on the offer. We are coming down to Aussie for a holiday."

At last a chance to return some hospitality and a chance to give Dick a few good Aussie beers and to work a bit of DX "VK" style.

Our skeds became more and more frequent until 11 August, and there I was waiting outside customs at Sydney Airport waiting for that familiar smiling mug when I got a tap on the shoulder and there they were - the Brinkmans: old N6AYV himself and Caroline, John (14), Ann-Marie (12), Pete (11) and Matt (7) on VK soil. It was a great feeling.

The three weeks flew. The kids played Aussie games, went to school for a day, the wives talked ladies "talk" constantly, and Dick (now VK2DTC) and I worked DX and drank a few beers.

Graeme, VK2DGW took the Brinkmans to Canberra (VK1) for a look at the capital and visits to Melbourne, Ballarat and to Maurie VK2NQW's wheat farm but the last days were coming up fast.

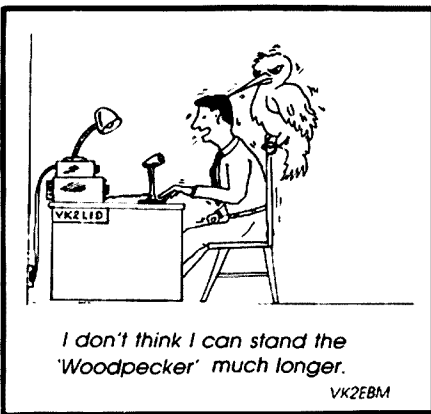
The farewell was a very sad one for all of us as our American family left.

Our big happy family of 10 became only four again; even the family dog moped that night. But we'll meet again; in fact, every Saturday (almost) we'll trade wisecracks, spin a few yarns, talk about Amateur Radio, and, most important-we'll "De-Gas an 807" (VK talk for opening a beer) whilst we cement the bonds of friendship that our wonderful hobby can give. Who knows, we might just get up "stateside" again and as my old mate Dick says, "Well, what can I tell ya!"

de Pete, VK2DAB

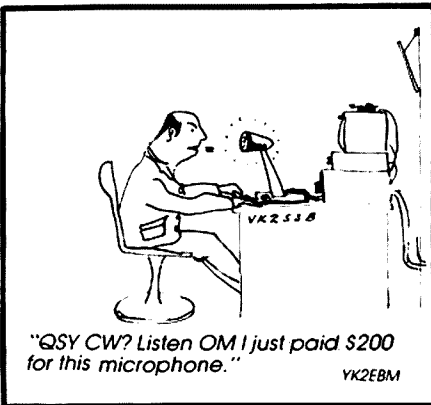
*P.S. A good friendship has developed between the Simi Settlers Radio Club and the Griffith Radio Club as quite often, various stations both sides of the Pacific drop in to say a few words. Dick and I are hoping to have an "On-Air" interclub visit between the two clubs with all operators in both clubs having a QSO party with a difference.*

Reprinted from World Radio June 82



*I don't think I can stand the 'Woodpecker' much longer.*

VK2EBM



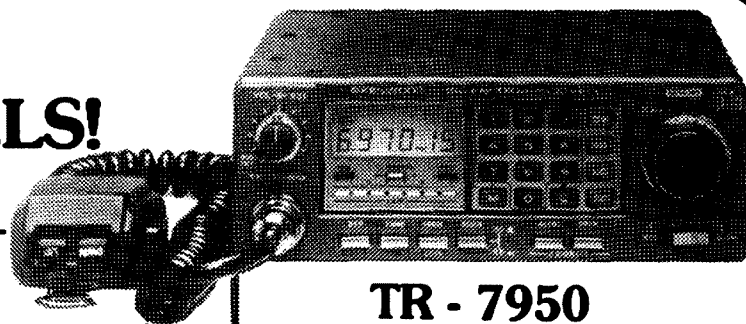
*"QSY CW? Listen OM I just paid \$200 for this microphone."*

VK2EBM

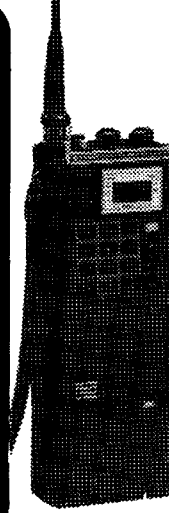
# KENWOOD

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|                              | Gain dbi | Boom  | Price incl. balun |
|------------------------------|----------|-------|-------------------|
| <b>15/11/10 Mx</b>           |          |       |                   |
| ATN 20-30-1 rotary dipole    |          |       | \$41              |
| 10/11 Mx model               |          |       |                   |
| ATN 28-29-3B 10 Mx           | 10.00    | 3.5 M | \$77              |
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| ATN 27-30-3B 10/11 Mx        | 10.0     | 3.5 M | \$92              |
| <b>6 Mx</b>                  |          |       |                   |
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| ATN 50-53-8                  | 14.2     | 5.5 M | \$153             |
| ATN 50-53-11                 | 16.2     | 9.0 M | \$194             |
| <b>2 Mx</b>                  |          |       |                   |
| ATN 144-148-8                | 12.7     | 2.2 M | \$60              |
| ATN 144-148-11               | 14.6     | 3.8 M | \$71              |
| ATN 144-148-16               | 17.0     | 6.3 M | \$91              |
| ATN 144-148-13WS             | 17.3     | 7.0 M | \$91              |
| <b>70 cm Model (N Conns)</b> |          |       |                   |
| ATN 420-470-6                | 10.2     | 0.6 M | \$46              |
| ATN 420-470-14               | 14.2     | 1.5 M | \$67              |
| ATN 420-440-11               | 15.7     | 1.85M | \$71              |
| ATN 420-440-15               | 16.7     | 2.85M | \$81              |
| ATN 420-450-27               | 16.7     | 3.05M | \$101             |
| ATN 432-16LB                 | 17.2     | 3.7 M | \$87              |
| <b>UHF CB (N Conns)</b>      |          |       |                   |
| ATN 47-5                     | 9.2      | 0.65M | \$46              |
| ATN 47-11                    | 17.0     | 1.7 M | \$67              |
| ATN 47-15                    | 17.8     | 2.8 M | \$77              |
| Amateur TV Translator        |          |       |                   |
| ATN 580-14 (N Conns)         | 17.5     | 2.0 M | \$71              |

**ALL LISTED HF ANTENNAS** use top grade 6063-T83 seamless tapered and swaged tubing elements with non-brittle ABS tough weather resistant insulators. Booms are 2" OD (longer booms use guys supplied) and elements taper from 1/2" OD or 3/8" OD depending on length. Longer elements use positive rake on insulators to reduce unsightly sag. The best possible materials have been chosen to suit tough Australian weather conditions.

**OSCAR PHASE III** Complete kit of Circularly Polarised 16 EL for 2 Mx + 28EL for 70cm + Phasing Harnesses + Fibreglass Crossarm + Bracket \$439.

**TRAPLESS TRIBANDERS, 13-30 MHz, Continuous Coverage (Includes new WARC & CB) (LOG PERIODICS)**

| Model   | Elements | Boom (metres) | Gain dbi Minimum | Price with 2kW PEP Balun |
|---------|----------|---------------|------------------|--------------------------|
| 13-30-6 | 6        | 6.0           | 7.5              | \$327                    |
| 13-30-8 | 8        | 8.5           | 9.0              | \$409                    |

**TRAPLESS DUOBANDERS, 20-30 MHz, Continuous Coverage (Includes new WARC & CB) (LOG PERIODICS)**

| Model    | Elements | Boom | Gain dbi | Price |
|----------|----------|------|----------|-------|
| 20-306S  | 6        | 4    | 7.5      | \$204 |
| 20-30-6L | 6        | 6    | 8.5      | \$235 |
| 20-30-8  | 8        | 8.5  | 10.2     | \$306 |

**MONOBANDERS — For 14 and 21 MHz**

| Model     | Elements | Boom | Gain dbi | Price |
|-----------|----------|------|----------|-------|
| 14-14.4-3 | 3        | 6    | 9.2      | \$183 |
| 14-14.4-4 | 4        | 7    | 10.2     | \$276 |
| 21-21.5-3 | 3        | 4.5  | 9.2      | \$122 |
| 21-21.5-4 | 4        | 6    | 9.9      | \$204 |
| 21-21.5-5 | 5        | 8    | 11.2     | \$296 |

Also available power dividers/couplers, quarter wave sleeve baluns and matching harnesses for stacks of two or more arrays; also 1:1 and 4:1 baluns in 200W or 1 kW and Insulators for homebrew. Write for free catalogue.

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# INTRUDER WATCH

Bill Martin, VK2EBM,  
Federal Intruder Watch Co-ordinator,  
33 Somerville Rd., Hornsby Hts. 2077



## INTRUDER WATCHING MADE EASY, OR

HOW TO HELP PRESERVE THE AMATEUR  
BANDS FOR AMATEURS IN ONE EASY LESSON.

There is no need to ask the question, "Do you wish to preserve the Amateur bands FOR Amateurs?" Any Amateur replying "No" would be a very strange fellow indeed.

Why then, do you suppose, we have a shortage of written objections to Intruders being submitted to the State Intruder Watch Co-ordinators? The only conclusion I can draw is that Amateurs who are suffering harmful interference from Intruder Stations are not sure how to go about registering their objections ... hence the title of this piece ... Now ... what do we do to report an Intruder? EASY — record the particulars of the Intruder just as you would make out a log entry for a QSO (get a bearing, if possible) and send the details to your Divisional Intruder Watch Co-ordinator, whose details appear below. Note that some of the Co-ordinators have been changed. We welcome the new State Co-ordinators to the Intruder Watch, and thank the retiring Co-ordinators for their help with their efforts to maintain the Amateur bands for the EXCLUSIVE use of Amateurs.

If you need any help, advice, etc., on Intruders or on Intruder Watching, write to your Divisional Co-ordinator, or to the Federal Co-ordinator. Remember that Intruders will not vacate our bands un-aided, and we must give them a little push to see them on their way. The way we can do this is to band together and report the Intruders, via the Intruder Watch, to the appropriate authorities. BUT WE MUST DO IT COLLECTIVELY. The authorities will not be bothered about spasmodic complaints. But they WILL listen to complaints of harmful interference if they receive complaints in sufficient numbers. YOU cannot shift Intruders; I cannot shift Intruders; ... but WE, together, can shift Intruders. **REMEMBER ONE THING** — it is a very slow and tedious business, and we must be patient, and not expect instant results.

Now that we have all attended and digested the one and only lesson on Intruder Watching, perhaps we are now looking for some Intruders on which to practice. I was rather hoping that this would have occurred to you by now. OK ... Try 21.115 MHz at 0600, 0800, 1000 UTC and tell us that you

heard a CW station (A1A mode) calling himself F9T, and sending either QRU, and nothing further, or QTC, and a coded message.

OR ... try sending a report on Radio Tirana, (Albania), which can be heard on 7.065 MHz, sometimes even in English.

There is even Radio Peking on 7.095, every evening, just waiting for someone to report him.

Do you know that you can obtain a cassette tape demonstrating all the radio modes by sending a blank C90 tape to the Federal Intruder Watch Co-ordinator? This is an interesting tape, and, Intruder Watch notwithstanding, is useful as a matter of further education to the interested Amateur, because it contains examples of many of the mysterious signals to be heard on the Amateur bands, some of which you probably have wondered, "What on earth is that?" Right; here's a chance to find out. Amaze your friends-in-the-shack by demonstrating your expert knowledge of any signals you may come across in the course of your daily tuning around ... "Oh yes, that is a radio-teletype transmission, with a shift of 500 Hz, or " This particular signal is an Amateur TV station", or ... "Hey — listen to this example of Amplitude-modulated, reduced-carrier, multi-channel, voice-frequency telegraphy." (R7B mode) Be an INFORMED Amateur. Know your modes by ear. Know you're listening to an INTRUDER. And with all this you can help the Intruder Watch, whose SOLE existence, after all, is to help all the Amateurs (including those around the world) enjoy their hobby without the frustrations of aborted QSO's caused by nuisance Intruders.

It's as simple as this: Amateur Radio frequencies FOR Amateurs. Here's where you can send your reports:

- VK1 Mr. F. Robertson-Mudie, VK1MM, Box E288, Canberra, ACT, 2600.
- VK2 Mr. Bill Martin, VK2EBM, 33 Somerville Rd., Hornsby Heights, NSW, 2077.
- VK3 Mr. F.S. Gardiner, VK3VAV, 1 Pine St., Kinglake, Victoria, 3175.
- VK4 Mr. A.G. Loveday, VK4KAL, Rubyvale, Queensland, 4702.
- VK5 Mr. Colin Ralph, VK5KCR, 14 Andrew St., Beulah Park, 5067.
- VK6 Mr. D. Couch, VK6WT, 9 The Grove, Wembley, W.A. 6020.
- VK7 Mr. Jim Davis, VK7OW, 55 James St., Latrobe, Tas. 7307.
- VK8 Mr. H.G.A. Andersson, VK8HA, PO Box 1418, Darwin, N.T., 5794.

**PLEASE HELP WITH INTRUDER  
WATCHING.**

# MAGAZINE REVIEW



Roy Hartkopf VK3AOH  
34 Toolangi Road, Alphington 3078

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

### QST June 1982.

Slow Scan Color T.V. (G) 6 metre receiving converter. (N) Low Noise 1296 MHz pre-amps. (P) L-C Oscillator. (N)

### ORBIT Feb 1982.

General Amateur Satellite Information. (G)

### 73 Magazine Sept 1982.

Cheap Satellite Receiver (P) RTTY Modem. (P) General RTTY Issue.

### CQ June 1982.

Special QRP Issue.

### MICROWAVES.

Although the situation is beginning to improve there has been, in the past, very little information in amateur magazines about the recent explosion of technology in the microwave spectrum. One magazine which reveals the state of the art is a trade magazine, "MicroWaves" from the Hayden Publishing Co. in America. Miniaturisation and integrated circuits completely changed general electronics and now they are doing the same for microwaves. With components the size of a pin head and lead lengths a fraction of a millimetre the problems of parasitics, strays and mismatches etc. become minimal and achievements, impossible a few years ago, are now routine. A compact solid state system at 94 GHz. GaAsFET amplifiers with 20 dB gain at 40 GHz with 1 Watt output. Varactor tuned oscillators in a TO8 case which sweep 1 GHz in the 2-10 GHz range with 10 Milli-watts output. (I have some and they really do work!) At present most of the devices are expensive but remember the first op-amps twenty five years ago which cost about 100 dollars. Now they are 30 cents. The same will happen with microwaves. It may well be that soon the television aerials will all disappear and be replaced by dishes (metalised plastic, available in all the supermarkets) which will provide the average household with radio, television, videophone, databanks and everything else from the local satellite. And even, maybe, a mobile, gyro controlled dish built into the roof of your car!

Roy, VK3AOH

## AX PREFIX

Don't forget you can use the prefix  
AX instead of VK for the period

15th AUGUST 1982

to

15th OCTOBER 1982 inclusive

to mark the occasion of the Commonwealth Games in Brisbane.



**This month we are presenting the first of a series of articles informing new members, and older members with over-stretched memories, of various Institute activities and services. We will also include items of general interest and guidance.**

## QSL BUREAU OPERATIONS

The VK3 Division QSL Bureau is divided into two sections:-

The Inwards QSL Officer is Mrs. Barbara Gray VK3BYK, 1 Amery Street, Ashburton, 3147. (Phone 25 1885)

The Outwards QSL Officer is Mr. Des Clarke VK3DES, c/- 412 Brunswick Street, Fitzroy, 3065. (Phone 417 3535) (Home 870 6550)

These services are provided FREE to **Financial Members** of the W.I.A. Victorian Division. Please observe the following conditions.

## OUTWARDS OPERATION:

1. QSL cards are sent to other QSL BUREAUX only.  
QSL cards for countries without a QSL Bureau will be returned via the Inwards Bureau.
2. QSL cards should NOT exceed 140mm (5½") x 90mm (3½"). Oversize

cards will be returned via the Inwards Bureau.

3. Call sign of recipient station to be printed on the rear of the card in the top right hand corner.

If via QSL Manager, note as follows:-  
e.g. HT2XZ via W6NA

4. Cards must be sorted in Prefix alphabetical order except U.S.A. and Australia.

These countries have different Bureaux for each Prefix Number, and should be sorted numerically irrespective of Alphabetical Prefix. USSR, Japan and Canada have a central Bureau for all cards, therefore sorting of cards for these three countries is not necessary, but would doubtless assist the destination QSL Bureau.

5. All cards to be posted or delivered to Outwards QSL, W.I.A. Victorian Division, 412 Brunswick Street, Fitzroy, 3065. Accompanied by your CURRENT 'AR' address label.

## INWARDS OPERATION:

Cards can be collected in three ways.

1. By calling by prior arrangement at Barbara's QTH. Please phone at a reasonable hour.
2. By sending STAMPED, addressed envelopes to Barbara. (Minimum size envelopes 7" x 5").  
Be sure to include YOUR own call-sign on each envelope.  
Postage at this time is 30c for about 15 cards or 45c for 30 cards.
3. Collect by prior arrangement with

Bruce VK3SO at Victorian Division Office between 10.00 a.m. and 3.00 p.m. weekdays.

NOTE: Incoming cards will be kept for twelve months only.

# Victorian Division WIA Western Zone Convention 1982

**VICTORIAN DIVISION WIA WESTERN ZONE CONVENTION — 1982**

**Location:** Ballarat, The garden City

**Host Club:** Ballarat Amateur Radio Group

**Date:** Weekend Saturday 30th October  
Sunday 31st October 1982

**Venue:** Sebastopol Football Club rooms.  
All accommodation is the responsibility of those attending.

## PROGRAMME

**Saturday:** Talk-in, registration, Talk-in Ch6750R and 3.585MHz. Official dinner at clubrooms (7 p.m. sharp)

**Sunday;** Trade display, competitions, BBQ lunch, novelty events, tea and coffee supplied.

**Information** available from the Secretary, Mr. Jim Wright VK3VZD. P.O. Box 216E Ballarat East 3350. Tel (053) 32 7563. Closing date for dinner reservations is October 15th.



## FIVE-EIGHTH WAVE

## NOTES MISSING:

We must apologise for the non-appearance of this column in August A.R. It was written by our President, Bill VK5AWM, and no-doubt would have made very interesting reading had it not gone astray. It looks as though you will be stuck with me for a while yet, as Bill is taking over the job of Editor of our local 'Journal' until we can find a suitable volunteer (don't all rush!). Those that miss out on this great opportunity will head the 'Short List' of Volunteers to write this column!

## ELIZABETH ARC:

One of the things that I believe was in Bill's column, was news of the Elizabeth A.R.C. This club would have to be one of the most active and enthusiastic in the State. In three consecutive weeks they had, a week-end Hamfest, the opening of their new club rooms (see Feb. AR), and their A.G.M. More than one hundred and fifty people attended the opening of the Water Tower, in glorious sunshine, on Saturday 7th August. Bill Wardrop, as divisional President performed

the opening ceremony. Tony Cooling VK5KNC the President of the club, spoke on the current activities of the club; and John Mitchell VK5JM, our immediate past President and a founder member of the Elizabeth club, spoke on the formation and early history of the club. The original minutes were read by their current Secretary Eddie Cooling VK5ZE. I was pleased to be invited to represent Federal Council, and happily didn't have to make a speech. I realised too late that jeans would have been more suitable for climbing the 'fire-escape-type' stairs than a dress with side splits, but it was worth the climb to see the amount of work that has been put into the first two floors. The Amateurs of S.A. seem to have a decided taste for strange buildings, or perhaps we see the potential in buildings that no-one else wants, divisional headquarters was an incinerator, and now Elizabeth has it's water tower. Both buildings have the advantage of height, but the disadvantage of not being able to be structurally altered. However this hasn't deterred the club members, whose current lack of funds seems to have been compensated for, to a large degree, by their ingenuity and enthusiasm. After the formalities we were entertained to a display of marching and rifle drill, by the Air Training

Jenny Warrington VK5ANW  
59 Albert St., Clarence Gardens, 5039

Corps; and last but by no means least a delicious afternoon tea was served. I believe those that could stay on, enjoyed a barbecue later. I would like to thank the Elizabeth Club for a most enjoyable afternoon, and wish them every success in their venture.

## BUY AND SELL

At our July meeting (which was a 'Buy and Sell'), it was moved that in future 'Buy and Sell' meetings will not be held on normal meeting nights, but on the fifth Tuesday in the month where one occurs. This means that next month we shall have our General meeting on Nov. 23rd, our Buy and Sell on the 30th, and our Christmas Social on Dec. 7th (bring the YL or XYL, and a plate of supper) and don't forget that it will be in the Thebarton Assembly Rooms on the corner of South and Henly Beach Rds. Also, don't forget the picnic at Bridgewater Oval on Sunday 21st Nov. — bring the whole family and your lunch. Interstate visitors are also welcome to any of these venues. (shout for help on repeaters 5 or 8).

This month's meeting will be the ever popular 'Display of members' equipment' at 8.00 pm in the Burley Griffin Building, on Tues. 26th Oct. QSL cards, E.S.C., and Publications available from 7.30 pm.



## VK4 WIA NOTES

K. B. Pounsett VK4QY  
33 Lasseter Street, Kedron, Qld. 4031

### COMMONWEALTH GAMES STATION

It has taken time, but approval has now been granted for the WIA to operate station AX4QCG at the Brisbane Commonwealth Games main stadium grounds at Nathan, Brisbane. Due to a variety of technical requirements, our site location at QEII requires that the station be located in a caravan, and transmissions be made on the 70 cm band, with a remote re-transmitting station being located at the home of Geoff, VK4ANP at Woodridge.

At Geoff's QTH, we will have a remote control box designed by Geoff VK4AG controlling the operation of two HF transmitters, either one being in contact with QEII by UHF. The HF frequencies for contact will be as follows:

80m - 3.580 MHz LSB; 40m - 7.085 MHz LSB; 20m - 14.342 MHz USB, 14.065 MHz CW; 15m - 21.380 MHz USB, 21.175 MHz USB, 21.135 MHz CW; 10m - 28.535 MHz USB, 28.200 MHz CW.

The station will also be operative on the WICEN repeater, 147.150/750 MHz. Wherever possible, the above frequencies will be used, and it is anticipated that the station will be operative from Thursday 30th September until Saturday 9th October, during the hours 0000 to 1300 UTC approximately. Any amateur contacting AX4QCG will receive a special QSL card, but please — NO RETURN QSL.

### WICEN IN QUEENSLAND

Here in the sunshine State, Wicen is very active. Apart from other unforeseen possibilities, cyclones are a real threat to lives and property along our entire coastline, from the Gulf of Carpentaria, all the way south to Coolangatta on the Gold Coast.

Ken Ayers, VK4KD, is the State WICEN Co-ordinator. Ken has been very busy organising our emergency network throughout Queensland and has recently held a very useful mobilisation exercise in the south eastern part of the State. Another recent exercise was held in conjunction with the BP Road Classic, a relay run involving teams starting from several different centres in South East Queensland.

Two more message handling exercises are planned for this month. One of these will cover communications for the Commonwealth Bank Cycle Classic on 11th October an International event over a Sydney-Brisbane route. Queensland WICEN is responsible from the NSW border to Brisbane section.

Over the weekend of the 15, 16 and 17th October, safety communications are being provided for the Warwick to Nerang Horse Endurance Trials. This is a gruelling event

over some very rough and dangerous country.

So with all this activity by the WICEN members, the cyclone season will be, perhaps, just a routine matter, after all that is the reason for all these exercises, isn't it?

### ATTENTION ALL RAILWAYMEN

The Queensland Institute Amateur Radio Club has been formed. The first meeting took place at Ipswich on 15th August.

Noel Wells, VK4NB is President and Dennis Breitkrentz, VK4KEW is the P.R. man. If you are a railwayman, you are invited to join the net any Wednesday evening at 0900 UTC on 3.580 MHz. VK4KEW is the net controller.

### SLOW MORSE

The first of September saw the beginning of the slow morse practice programme under the guidance of the Townsville Amateur Radio Club. Several clubs are participating in this programme, each being responsible for a particular night or nights. The frequency to listen to is 3.535 MHz.

### ROYAL FLYING DOCTOR SERVICE

This service, which is so important to outback Queenslanders, had a most interesting historical item on their stand at the recently held Brisbane Exhibition (Royal Show in other States).

On display and operating was a relic of bygone days in the shape of a morse code machine. Looking somewhat like a typewriter, it sends characters at about 10 WPM on pressing the appropriate keys. Because of such lower power from pedal wireless sets, CW got through when phone failed, as it still does today. Unskilled people could type out the message on the key board, it would be copied by an operator at the base station who would then reply on phone, using high power.

So just for once, the professionals were ahead of the amateurs in morse machines. It has taken the amateur fraternity about 50 years to get the same idea.

Bud VK4QY

## ALARA

AUSTRALIAN LADIES AMATEUR ASSOCIATION

Margaret Loft, VK3DML  
28 Lawrence St. Castlemaine, 3450

Last night on the 7th Birthday net for ALARA 18 members joined in from VK2: 3:4:5:6:7; and Pearl ZL2QY one of our DX members. Best wishes to ALARA were extended by all on frequency and the successful continuation of our group.

Sorry to hear of all the victims of the flu virus raging at present, it is a nasty strain and really takes some shaking off. We have all had it so know first hand.

The exams are over again successfully I hope for all candidates. Please let me know your new callsigns so they can be included in this column. We like to share in your achievements.

It has been suggested we compile a list of all licensed YL's and would like to hear from you if you have a callsign, aim is to have a list of calls and names. This will be printed in ALARA newsletter and if we hear you on air will know who you are. It also gives us an idea of the proportion of YL's to OM's now and also the percentage who have joined ALARA.

This month I received a letter from Akiya JH1GMZ the International Chairman of JLRS. They had the 25th anniversary of JLRS on 24th, 25th July in Tokyo. One hundred and thirty members and thirty five friends and OM's attended. At their first convention in 1957 they had twelve YL's as members, now their membership is four hundred and sixty. Certainly a very impressive achievement in twenty four years.

Congratulations to member Sue Brown VK2BSB on your appointment as President of the VK2 division of WIA, a first in the history of the Institute.

REMEMBER THE CONTEST on SATURDAY 13th NOVEMBER 1982 from 0001 to 2359 UTC. FREQUENCIES as per contest column of AR and associated magazines. Please join in and ensure its success, I look forward to meeting some of you. I will be using the club callsign VK3DYF for the contest. So hope to hear you.

All the best to all of you until next month, good health and enjoy your hobby.

33:73:88

Margaret VK3DML

### STOP PRESS

ARIANE ROCKET L5 was not carrying an amateur satellite when it failed to get into orbit after launch on the 10th September. L6 is scheduled to carry Phase IIIB amateur satellite and it is now assumed that the program will be considerably delayed.

BOB VK3ZBB

# VK2 MINI BULLETIN

Athol Tilley VK2BAD  
PO Box 1066 Parramatta  
NSW 2150.



\*\*\*\*\*  
**NOTE OUR NEW  
POSTAL ADDRESS:**  
  
**P.O. BOX 1066,  
PARRAMATTA 2150**  
  
**OUR OFFICE IS NOW  
LOCATED AT:**  
  
**109 WIGRAM STREET  
PARRAMATTA**  
  
**PHONE: (02) 689 2417**  
  
**LISTEN TO BROADCASTS  
FOR FURTHER DETAILS**  
  
**\*\* Please note phone no. amendment.  
It was incorrect last issue.**  
\*\*\*\*\*

## COUNCIL REPORT

The new headquarters of the Division at 109 Wigram Street Parramatta were the venue for the Council meeting held on the 13th of August.

Federal WIA advised that Bill Martin, VK2EBM, had been appointed as the new Federal Intruder Watch Co-ordinator. Bill will continue to act at the VK2 Co-ordinator and, on behalf of members, Council congratulates him on his new appointment and thanks him for his dedicated work.

Athol Tilley, VK2BAD, reported on the establishment of the office at Parramatta and progress on the work to install the office partitions and fitting out the library and members lounge area. Susan Brown, VK2BSB, reported on her discussions concerning the Division's responsibilities as to income, sales and state payroll taxes. Steve Pall, VK2PS, presented recommendations for upgrading the Division's insurance policies and it was resolved that the Public Liability cover be increased to \$1,000,000. A new plain paper photocopier and two filing cabinets were purchased for the office.

Marshall Emm, VK2DXP, advised Council that he was unable to continue as the Division's Slow Morse Supervisor due to his transfer to South Australia. Members will be aware of the vital role of the slow morse service and the dedication of the operators. Although Marshall has held the position for a relatively short time, he has demonstrated his enthusiasm in many ways, in particular the survey he conducted to find out if the existing format was suitable and what changes were desired by the users of the slow morse service. Council and members of this Division wish to thank Marshall for his work and wish him success in VK5. Ross Wilson, VK2BRC, has offered to act as Slow Morse Supervisor. Congratulations Ross and our appreciation.

An offer from Aub Topp, VK2AXT, to assist the Division was accepted and Aub is now

our new Honorary Library Officer. Council is aware of the considerable job facing him and is thus especially grateful for Aub's offer.

Ways of encouraging technical articles in Amateur Radio Magazine were considered. Council resolved that the VK2 Division will award annually a first, second and third prize of \$200, \$100 and \$50 respectively to the authors of the best three technical articles from VK2 members published in Amateur Radio. The awards will be presented at the Annual General Meeting of this Division, selection of the awards to be made by Divisional Council at its January meeting (NO — Councillors are not eligible!). A suggested name for these awards is being investigated.

An official opening ceremony for the new building was discussed and early February, 1983, is the tentative date.

## HOMEBREW COMPETITION

Built any home-brew equipment lately? Why not enter it in the competition described on page 58 of August AR and then provide a technical article for Amateur Radio - you might even scoop the pool for awards at the next AGM! Remember that the closing date is the 30th of November, so get your application form from your local Affiliated Club or the office NOW.

## NEW OFFICE DETAILS

The office of the NSW Division of the WIA is now located on the first floor of 109 Wigram Street, Parramatta and is open between 11am and 2pm Monday to Friday inclusive. The phone number is (02) 689 2417. Note that all correspondence with the Division should be sent to PO Box 1066, Parramatta, NSW, 2150 — no other address should be used.

Facilities include the office, library, a member lounge/meeting area and drawers or QSL cards. A roster system is proposed so the building can be open on Saturday afternoon and one evening during the week. When this is finalised, details will be on the weekly broadcasts and in this column.

## 7TH CONFERENCE OF CLUBS

The Westlakes Amateur Radio Club will host this important Divisional meeting at its clubrooms in York St Teralba, starting at 10 am on Sunday the 31st of October. Will your Affiliated Club be represented? The quorum is twelve Affiliated Clubs. Members of Council will indicate the importance they place on these Conferences by their attendance, as they have done previously.

This is an ideal opportunity to present your clubs views and meet the officers of other clubs, as well as viewing the operation of the QSL Bureau. As it is the first Conference of Clubs to be held north of Sydney, the north coast and northern clubs will find travel

much easier. Teralba is near Newcastle, only a few hours drive for Sydney clubs.

A presentation will be made to the winner of the "Dick Smith Educator of the Year" award. An award will be made to the club achieving the highest increase in WIA membership amongst club members since the last Conference. You know what was awarded in the past, so attend and see what award is made this year - if your club is not represented you might miss out!

I want to see as many clubs as possible represented at this Conference. Lets all be at Teralba on the 31st of October and enjoy the hospitality of the Westlakes Amateur Radio Club.

## JAMBOREE ON THE AIR - JOTA

The Scout and Guide JOTA will be held on Saturday and Sunday, the 16th and 17th of October. If a scout group contacts you to run a station and you personally cannot assist them, contact fellow amateurs or the Division. Likewise, if you wish to run a JOTA station, let the Division know and we will direct the scouts/guides to you. JOTA is one of the ways to introduce newcomers to amateur radio so please conduct your station with decorum and tolerance - not to forget the regulations.

## BLUE MOUNTAINS FIELD DAY - 1982

The annual field day of the Blue Mountains Amateur Radio Club will be held on Sunday, the 14th of November at the Springwood High School, Chapman Parade, Faulconbridge. It is expected that all the usual events such as foxhunts, talk-ins, ladies and childrens events will be provided.

For details and a program, write to the club at PO Box 54, Springwood, 2777.

## WICEN NOTES

The month of October has a considerable amount of activity for members of VK2 WICEN. Over the October holiday weekend WICEN, being a member squad, attended the annual VRA conference. From the 11th to the 17th October VK2 and VK4 WICEN will be involved with communications for the Commonwealth Bank Cycle Classic. This pushbike race will mainly follow the Pacific Highway from Brisbane to Sydney and the various Regional groups along the way will provide mobile coverage via the area 2 metre repeaters. The event is international with twelve teams of four bike riders who will finish at Pier 1 in Sydney on Sunday afternoon 17th October. SIMULATED EMERGENCY TEST (SET).

The Simulated Emergency Test is an annual event conducted across the US and Canada in mid October. The purpose of the SET is:-

**\* To find out the strong points and limitations of the amateur emergency groups and the third party traffic nets in providing emergency communications.**

\* To help amateurs gain experience in communications, using standard procedures, under simulated emergency conditions.

\* To provide a public demonstration to served agencies such as Red Cross, Salvation Army etc, and through the news media - the value to the public of Amateur Radio, particularly in time of need.

To achieve these aims the 3rd part networks and the emergency groups come together to make contact with the various welfare agencies and pass messages on behalf of these agencies.

This is a big event with over 12,000 emergency operators and a very large number of National Traffic System operators taking part in most of the activity during the nominated weekend. That will be the 23rd - 24th October this year.

**What has this got to do with Australian Amateurs?** It means that following the establishment of 3rd Party Traffic Agreements between Australia and both the US and Canada, Australia has been asked to participate in this years International Simulated Emergency Test. As this is our first venture in this area the level of Australia's involvement is being kept at a low level so that we can observe and learn and determine whether this should be a regular part of the Australian Amateur calendar.

The activities can be divided into 3rd Party Traffic activities (i.e. messages basically between members of the public) and WICEN activities (i.e. messages basically between agencies).

Most activities are expected to be centred on NSW with some WICEN activity in VK1 and VK4.

The WICEN activities will involve the National Disasters Organisation, the NSW Police Disaster and Rescue Branch and the various welfare agencies such as Red Cross, Salvation Army, St. Vincents de Paul and Seventh Day Adventist, etc. Area Co-ordinators for these agencies will be passing messages both within NSW and also to the US and Canada.

Apart from providing further clarification of the respective roles of WICEN and the 3rd Party Traffic Nets, this exercise will also explore some practical aspects of WARC resolution "BN" which deals with the use of Amateur frequencies during times of international emergency.

#### ANNUAL CONFERENCE

The Annual Co-ordinators conference will be held this year on Saturday the 30th October at the Westlakes Amateur Radio Club, Teralba.

Expanded details of WICEN activities are given on the Sunday broadcasts or the weekly WICEN nets on Thursday. There is a Sydney net at 1 100 UTC on WICEN repeater VK2RWS 7150 and the HF nets follow at 1130 UTC on 3.600 MHz. Included in each net are coming events, activity reports and short taped training lectures. Those who can report in on the nets will be kept up to date and an invitation is extended to all Amateurs to join in.

(From David Mackay NSW WICEN Co-Ord)

#### DETAILS OF 3 CLUBS AFFILIATED WITH THE NSW DIVISION

##### BATHURST ARC

PO Box 755, BATHURST, NSW, 2795

Meetings: 3rd Friday of each month at 8pm at SES Headquarters in George Street, Bathurst.

President: J. Willmott VK2AJX, V-Pres: N. Sweetnam VK2DLG, Secretary: N. Wilde VK2DR, others: M. Salmon VK2DLD, J. Thurgood VK2BHM, T. Stevenson VK2ZNU.

##### MANLY WARRINGAH DRC

PO Box 186, BROOKVALE, NSW, 2100

Meetings: Every Wednesday at 7.30pm at old RAAF Radar Station at Beacon Hill.

President: G. Aggett VK2ZGD, V-Pres: P. Angilley VK2BDF & B. Saward VK2KAD, Secretary: I. Dodd VK2DLU, others: M. Tremble VK2BIS, R. Grigson VK2RA, J. Blackman VK2KBJ, H. Leykem VK2BHF, R. Clarke VK2BYN, D. Whoolen VK2ZHY.

Repeater: VK2RMB channel 6875.

##### ORANGE ARC

PO Box 1065, ORANGE, NSW, 2800.

Net: Sundays at 2030 EST on repeater 6700 using VK2AOA.

Meetings: 1st Friday of each month at 7.30pm at Canobolas High School, Icely Road, Orange.

Classes: NAOCP.

President: P. Carter VK2TK, V-Pres: N. Wilde VK2DR, Secretary: R. Wilson VK2BRC, others: R. Alford VK2ZRJ, I. MacArthur VK2NYU, F. Aplin VK2ZFE, V. Marsden VK2EVM.

Magazine: Mini Tuned In, published approx. bi-monthly. Editor: R. Wilson VK2BRC.

Repeater: VK2RAO channel 6700.

#### COMING EVENTS

Jamboree on the Air: 16th and 17th October.

WICEN Regional Co-ordinators Conference at Teralba: Saturday 30th October.

7th Conference of Clubs at Teralba: Sunday 31st October.

Blue Mountains Field Day at Springwood: Sunday 14th November.

Homebrew Competition: entries due: Tuesday 30th November.

NSW members and clubs are invited to submit news items for inclusion in this column to PO Box 1066, Parramatta, NSW 2150. Items for December AR should reach us by October 22.

Athol VK2BAD.

## REMEMBER JOTA

OCTOBER 16, 17

## WHEN IS A STATIC CHARGE PRESENT?

You can never be sure if you or the items you are working with has a static charge but small charges up to 100 volts are common and large charges up to 35000 volts could be present.

#### Examples

- A person after walking on carpet
  - up to 35000 volts on a dry day
  - up to 2000 volts on a damp day
- A person walking on a vinyl floor
  - up to 12000 volts on a dry day
  - up to 400 volts on a damp day
- A person on a padded chair
  - up to 18000 volts
- Styrofoam coffee cup
  - up to 5000 volts
- Plastic solder sipper
  - up to 8000 volts at tip
- Plastic or scotch tape
  - up to 5000 volts
- Vinyl covered notebook
  - up to 8000 volts

#### Electro Static Discharge

- TO FEEL IT — 3500 Volts or more required
- TO HEAR IT — 4500 Volts or more required
- TO SEE THE SPARK — 5000 Volts or more required

Many electronic components including those in the chart below are susceptible to damage from a static discharge. Voltages far less than you can feel, hear or see can degrade or completely destroy components.

#### ESD Susceptibility of Various Electronic Devices.

| Device Type                  | Range of ESD Susceptibility (Volts) |
|------------------------------|-------------------------------------|
| VMOS                         | 30 to 1800                          |
| MOSFET                       | 100 to 200                          |
| GaAsFET                      | 100 to 300                          |
| EPROM                        | 100                                 |
| JFET                         | 140 to 7000                         |
| SAW                          | 150 to 500                          |
| OP AMP                       | 190 to 2500                         |
| CMOS                         | 250 to 3000                         |
| Schottky Diodes              | 300 to 2500                         |
| Film Resistors (Thick, Thin) | 300 to 3000                         |
| Bipolar Transistors          | 380 to 7000                         |
| ECL (PC Board Level)         | 500 to 1500                         |
| SCR                          | 680 to 1000                         |
| Schottky TLL                 | 1000 to 2500                        |

FROM COLLECTOR & EMITTER, APRIL 82



#### MEMBERSHIP

The mid-year edition of The Radio Bulletin of the Eastern and Mountain District Radio Club contains a call sign listing of Club members. Of the club membership totalling 511, 293 are current WIA members; all but 25 have Victorian addresses; of that 25 there were 5 in VK2 and 6 in New Zealand.

Cross modulation and spurious emissions on our crowded bands cause headaches to us all from time to time.

This excellent article by Or. R.W. Ellis will assist all to fully understand the problem and help in the prevention and diagnosing of this common fault.

NOTE: This article has been reproduced without alteration. The author has used the European practice of a comma to signify a decimal point.

# NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ  
Federal EMC Co-ordinator  
38 Wattle Drive, Watsonia 3087

## Practical approach to VHF co-location problems

By Dr. R.W. Ellis\*

\*Park Air Electronics Ltd. Peterborough, UK.

The rapid increase in the use of air transport over the last 20 years, coupled with the need to provide a cost effective and safe service with maximum aircraft utilisation and minimum turn around time, has generated an ever growing demand for VHF communication services at airports and en-route stations.

This in turn has given rise to the increased use of communal siting, with a comparatively large number of systems operating on different frequencies in a restricted area.

This proliferation of transmitters and receivers, combined with the use of single frequency simplex working, inevitably has resulted in a considerable amount of interference between equipment located in close proximity. Although equipment design has reached an advanced state it is essential that, as the use of VHF/UHF extends still further, precautions are taken to reduce the possibility of interference between systems operating under adverse conditions.

Interference between transmitters and receivers with antenna systems located close together is generally due to a combination of receiver related problems such as blocking desensitisation or compression, intermodulation, cross modulation, spurious responses and local oscillator radiation, as well as transmitter related problems like intermodulation, broadband noise and spurious/harmonic outputs.

With receiver blocking, the presence of a strong off-channel signal at the receiver input causes the RF amplifier and mixer circuits to saturate, which reduces their gain for on-channel signals. As a result, while the operator may not experience any apparent interference from a co-sited transmitter, his receiver sensitivity may be drastically reduced for the duration of the off-channel transmissions. In extreme cases the receiver mute will not lift even for relatively strong on-channel signals.

The blocking characteristics of a typical VHF receiver the PAE 1901 are shown in Figure 2. The graph shows the level of off-channel signal required to reduce the signal-to-noise ratio of a -107 dBm (1  $\mu$ V pd) on-channel signal to 10 dB, this being considered the threshold of interference.

It may be seen from the graph that for a channel separation of say 1 MHz between the wanted and the interfering signal, blocking will be evident for interfering signal levels in excess of -5 dBm.

Receiver intermodulation is extremely common when single frequency simplex operation is employed.

### SPURIOUS SIGNALS

If two signals are applied to a non-linear device, mixing will occur and additional spurious signals will result. The combined effect of two transmitters in the vicinity of the receiver having a certain frequency relationship to the receiver can cause intermodulation in the receiver by overloading the RF and mixer sections, with one of the intermodulation products falling within the receiver passband. Modulation of both the primary signals will appear on each of the spurious signals, which will cause severe interference.

A typical VHF receiver will produce internally generated intermodulation interference from received signals — with the

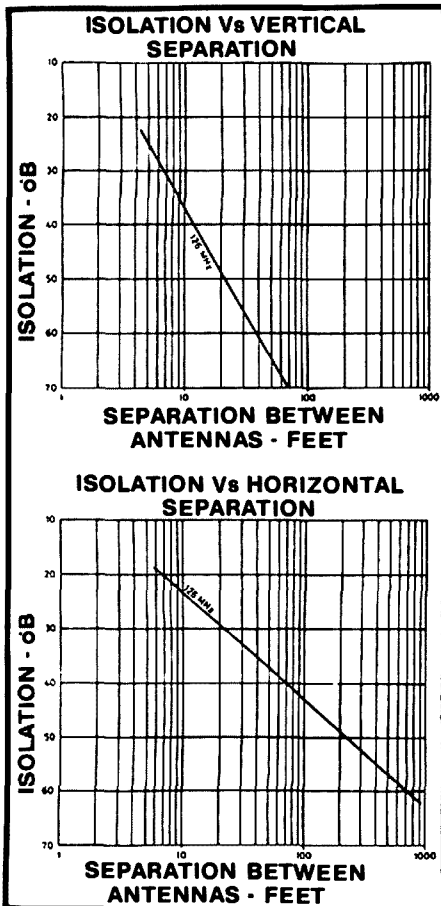
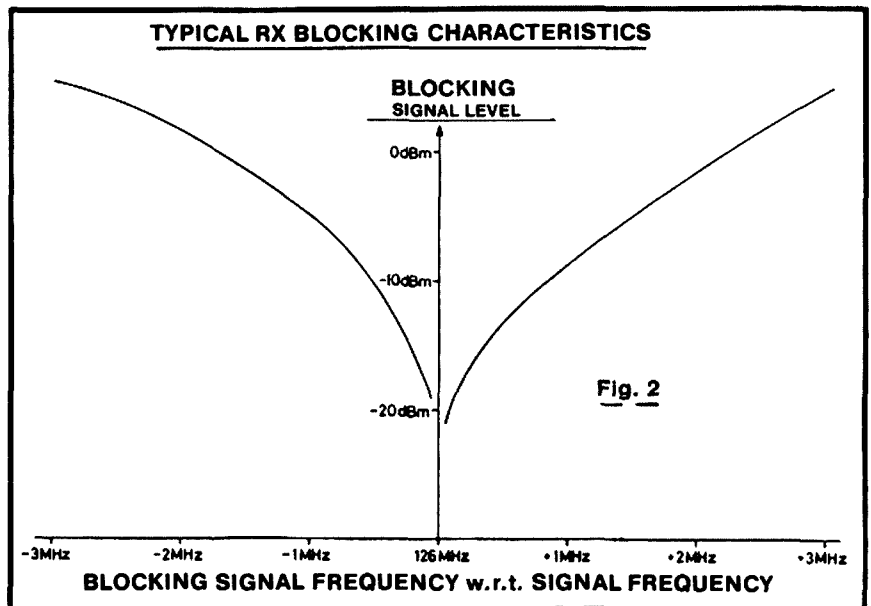


Figure 1 Two graphs illustrating the relationship between vertical separation and isolation and between horizontal separation and isolation.



appropriate frequency relationship — of 45 dBm. It should be noted however that the improvement resulting from attenuation of signals from interfering transmitters causing third order ( $2f_1 - f_2$ ) interference is much greater than the actual reduction in the level of the interfering signals. Normally every 1 dB change in the two tone input produces a 3 dB change in the third order product.

Receiver cross modulation is another very common form of interference and is caused by a strong off-channel signal from a single transmitter. If the off-channel signal is of sufficient amplitude to exceed the normal dynamic range of the receiver transfer characteristics, the modulation from the off-channel signal can be transferred to a much smaller on-channel signal which is being received normally. Only a single off-channel transmitter is required to produce the interference and it need bear no particular frequency relationship to the wanted signal.

The cross modulation characteristics of a PAE 1901 receiver are shown in Figure 3. It can be seen that off-channel signals of -10 dBm at 1 MHz away from the tune frequency will produce interference.

### MUCH LARGER CHANGE

The cross modulation effect is independent of the desired signal level until a level is reached at which the receiver AGC circuits reduce the RF amplifier gain and is proportional to the underside signal amplitude. For this reason, as in the case of intermodulation, a small change in the interfering signal amplitude results in a much larger change in the interference level.

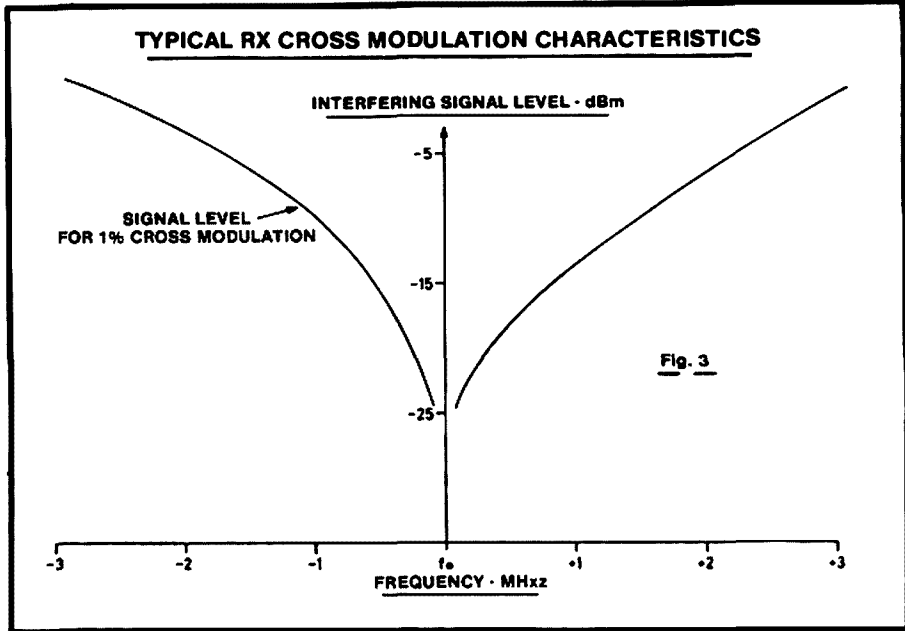
Spurious responses can be produced in the receiver when harmonics of the receiver local oscillator beat with harmonics of strong off-channel signals in the mixer circuits. If a resulting beat product falls within the receiver's IF amplifier passband, the off-channel signal will be amplified in the normal manner. Thus, interference is produced irrespective of the presence of an on-channel signal.

Receiver local oscillator radiation is inevitable despite careful design. A certain amount of power from the receiver's local oscillator finds its way into the antenna circuits where it is radiated into an antenna receiver as a potential interfering signal.

Intermodulation between transmitters on closely spaced channels is caused mainly by the degree of coupling between transmitters in the system. Coupling mainly exists in the antenna system and, because a common mast is often used, the coupling between antennae can be very tight, as shown in Figure 1. The effect of this coupling is to feed voltages from one transmitter to another and, as the output stages usually operate in class C, the non-linearity can be considerable.

### PROXIMITY IN RACKS

Some intermodulation can be present because of the proximity of equipment in racks. The possibility of standing waves on feeders close together also exists, but in general it can be assumed that the majority



of intermodulation effects at the transmitters occur by coupling in the antenna system.

Figure 4 illustrates the variation of intermodulation product levels with isolation, and it is evident that such information indicates the amount of isolation necessary to achieve acceptably low levels of unwanted products. Normally a minimum isolation of 35 dB between transmitters must be achieved.

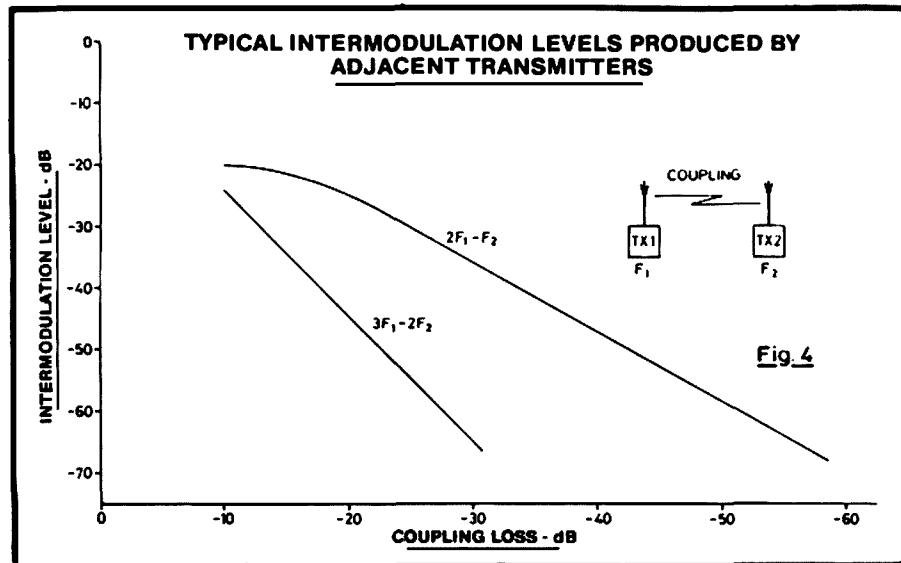
In addition to the usual noise source that receivers must cope with, there is the problem of wideband noise produced by nearby transmitters. Some degree of wideband noise radiation from a transmitter is inevitable, and the use of modern solid state wideband power amplifiers has meant that this particular aspect of transmitter performance has not been improved in line with most other parameters.

Figure 5 shows the noise performance of a typical VHF transmitter, the PAE 1500. The graph shows that at  $\pm 250$  kHz the noise

output is 150 dB/Hz below the carrier level. This is equivalent to a signal power of -61 dBm when related to a carrier power of 50 W/+47 dBm and a typical receiver detector bandwidth of 16 kHz.

In assessing the various causes of interference, it is apparent that the major factor is too close a coupling between transmitter and receiver antennae.

Most experts agree that the provision of as much space as possible between receiving and transmitting antennae is the most effective insurance against interference. The more space between the offending transmitter or transmitters and the receiver the less will be the interference problem. Doubling the distance will result in 6 dB of attenuation and, as has been shown, a reduction by 6 dB of a transmitted signal that causes interference may result in much more than a 6 dB improvement in the interference level. This is particularly true in the case of cross modulation and intermodulation.



It is possible to make reasonably accurate evaluations of potential interference problems, and it is convenient to divide these problems into two areas:

- \* Interference caused by blocking, cross modulation and transmitter noise.
- \* Interference caused by intermodulation.

### BLOCKING AND CROSS MODULATION

It is clear from the graphs of blocking and cross modulation that, for a transmission removed from the receiver tune frequency by 250 kHz, the maximum level of signal that will not cause interference is approximately -20 dBm.

Assume a Tx Power output of 25 W = +44, 4 dBm

Tx Antenna feeder loss = -3 dB

Tx Antenna gain = + 2, 15 dBi (½ wave dipole)

Rx Antenna feeder loss = -3 dB

Rx Antenna gain = + 2, 15 dBi (½ wave dipole)

Max Rx level to avoid interference = -20 dBm

Minimum attenuation = (44,4 -3 +2, 15) - (-3 +2, 15 -20) = 43,55 + 20,85 = 64,40 dB

Minimum Tx - Rx attenuation = 64,40 dB

### BROAD BAND NOISE

Considering the transmitter broad band noise:

Assume Rx Sensitivity = -113 dBm

Rx antenna feeder loss = -3 dB

Rx antenna gain = + 2, 15 dBi

Thus Rx System sensitivity = -112, 15 dBm

The graph of Tx output noise (Figure 5) shows that at ±250 kHz the noise output is approximately -150 dB/Hz below the carrier.

Assume Rx noise Bandwidth = 16 kHz (25 kHz channelling)

Then:

The effective Tx noise signal = + 44,4 dBm (25 W) - 150 dB + (10 log<sub>10</sub> 16 x 10<sup>3</sup>) dB = + 44,4 dBm - 107,96 dB = - 63,6 dBm

Minimum Tx - Rx attenuation = 112, 15 - 63,6 = 48,55 dB

From these calculations it is apparent that a considerable degree of isolation between transmitters and receivers is

necessary to avoid interference. This isolation must be provided by reducing the coupling between antennae or by providing additional selectivity at the receiver.

### CAVITY FILTER

To achieve the necessary 64 dB isolation a separation of approximately 300 m between horizontal antennae is required. This separation may be reduced by including a cavity filter in the receiver antenna lead. A tuned cavity filter is a high Q resonant circuit, usually in the form of a cylinder with approximate dimensions of 17 x 75 cm. Coupling adjustments are provided to adjust the insertion loss and selectivity.

Figures 6A and B show the characteristics of a typical VHF filter. It can be seen that an additional 15 dB protection can be provided at ±250 kHz. This would reduce the required antenna separation to 65 m.

Further improvement in the receiver selectivity would reduce the antenna separation required to prevent cross modulation and blocking, but of course would offer no protection from transmitter noise since this appears on the tune frequency of the receiver. To reduce this interference the cavity filter must be installed in the transmitter antenna system.

A reduction in receiver sensitivity would allow closer positioning of the transmitter and receiver antennae. Reducing sensitivity from -113 dBm (0,5 µV pd) to -93 dBm (5 µV pd) would allow an antenna separation of 30 m without the filter. With the filter a horizontal separation of 12 m would be required, or if the antennae were located vertically on the same mast, a 2 m separation would be sufficient.

### FREQUENCY SEPARATIONS

These calculations assume a frequency separation of ±250 kHz between the receiver and transmitter. The necessary corrections for other frequency separations can be made by reference to the graphs.

In the case of interference caused by intermodulation, the problem may be caused by intermodulation products generated either in the receiver or in a transmitter output circuit by cross coupling of power from another co-sited transmitter. A typical receiver will generate intermodulation from two off-channel signals of -45 dBm. The necessary attenuation can be achieved by frequency spacing or by physical distance, or by a combination of both, provided the effective resultant signals are less than -45 dBm.

Certain advantages may be gained by the use of special antenna systems. For example, an offending transmitter may be 400 m from the receiver and there is no necessity to receive signals from that direction. In such a case, a simple directional antenna with a front-to-back ratio of say 15 dB may suffice to reduce the offending signal to an acceptable level.

As in the case of cross modulation, a considerable improvement may be effected by reducing the receiver effective sensitivity by inserting an antenna attenuator. Reducing the sensitivity to 5 µV pd will allow the antenna separation to be reduced by approximately 10:1.

Clearly, because the threshold for intermodulation interference is much lower than that for other types of interference, wherever possible frequency allocations should be arranged so that third order products are unlikely to occur.

### MAXIMUM ATTENUATION

The generation of intermodulation in transmitter output stages is caused by coupling between adjacent transmitters. To reduce the coupling, antenna spacing should be arranged to introduce the maximum attenuation between the arrays in question. Maximum attenuation is always easier to obtain when antennae are in the vertical plane, as shown in Figure 1.

Further reduction in coupling can be achieved by the use of cavity filters in one or more of the transmitter antenna leads. Including a filter in the transmitter output also has the advantage of reducing the broad band noise from the transmitter.

An alternative method of reducing the coupling between transmitters, and one that has several advantages, is the use of ferrite isolators. The isolator is fitted in the transmitter output lead and provides approximately 20 dB attenuation.

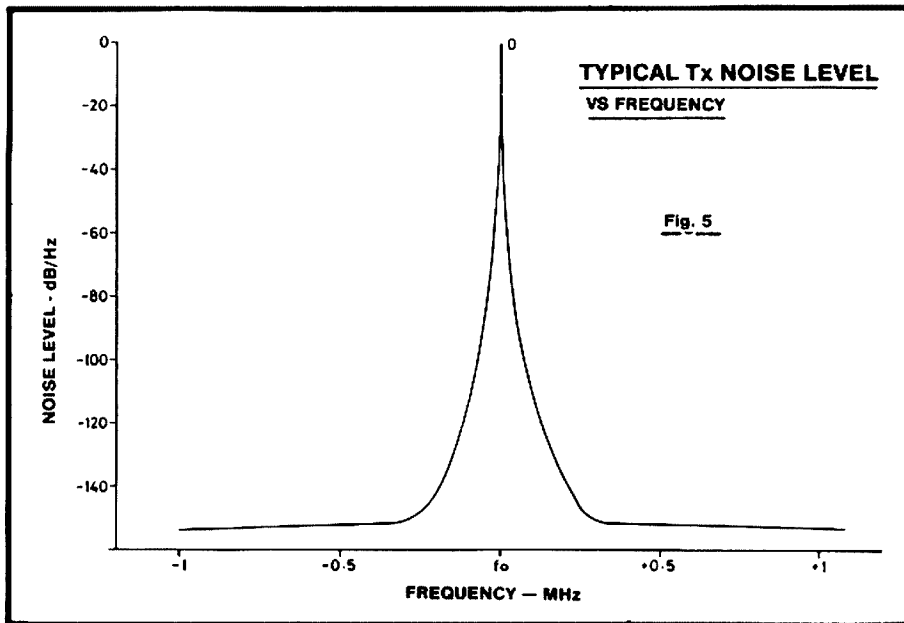
Reproduced by arrangement from:  
"Australian Electronics Engineering,  
May 1982"

### INTERMODULATION

A recent practical example of an intermodulation problem came to the fore in Melbourne recently.

The effect was first noticed by VK3DSW, and resulted in the effect of receiving a signal on 146.137.5 MHz when both "VOICE CALL", a new commercial paging service on 149.887.5 MHz and "TELECOM PAGER" on 148.012.5 MHz were both transmitting at the same time.

Much of the primary investigations were





### TYPICAL V.H.F. CAVITY PERFORMANCE GRAPHS

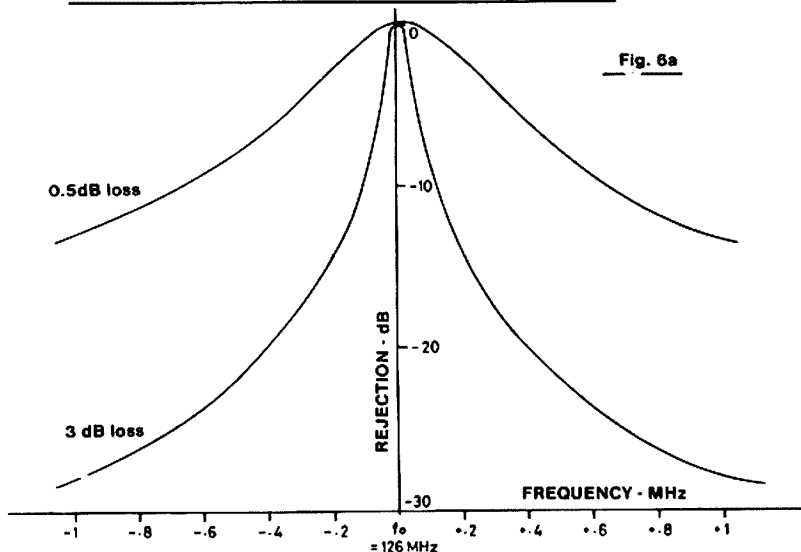


Fig. 6a

### TYPICAL V.H.F. CAVITY PERFORMANCE GRAPHS

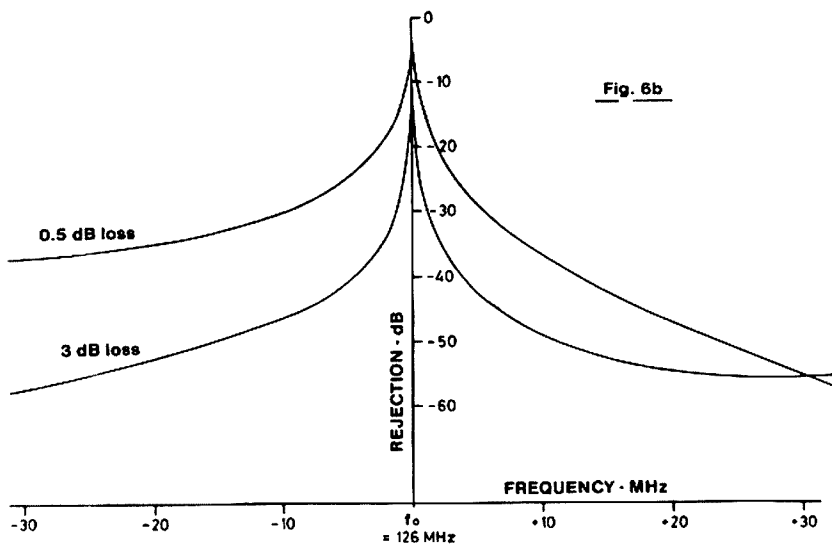


Fig. 6b

## "CABLE TELEVISION: YES AND BE QUICK!"

Cable and Pay TV should be introduced as soon as possible, according to the Australian Broadcasting Tribunal.

The Tribunal's interim report which was tabled in Parliament recently said, the social, technical and economic arguments against cable TV were outweighed by the arguments in its favour.

The Tribunal recommends that responsible organisations like TELECOM and the ABC should not be allowed basic control of the system. This is a good indication that we could have the "back-yard-mobs in for a quick quid" ..... Let us not forget Ch5A and Ch0! In effect, the Tribunal is recommending that we follow in the foot steps of the North American catastrophic mess. Even to the extent that an Association was formed recently in Sydney, with its main aim being to push cable TV.

The W.I.A. submission to the Tribunal in August last year, stated:—

*"If we have to suffer Cable and Subscription Television — better to use fibre optic transmission systems; but lets make sure that which ever system is used, it is designed, installed, tested and maintained to the highest international standards. And all engineering services and maintenance be placed firmly under the control of a responsible body."*

The A.R.R.L.'s recent petition to the FCC, requested that CATV systems be prohibited from using amateur frequencies for distribution of their signals ..... In response, the President of the Society of Cable Television Engineers said, "..... it is the responsibility of every one of us to do our part to ensure that state-of-the-art cable systems are maintained in a manner that does not give rise to these kinds of petitions being filed before the FCC."



# QSP

## STRANGE BUT TRUE

*Life is stranger than fiction. Two years ago, a Bellaire, Ohio amateur — Chuck Sempirek, K8WDC — had his 2 metre rig stolen from his car while at a bowling alley. Later, Police recovered the rig along with other items and kept it for evidence.*

*In the meantime, K8WDC migrated to Texas due to employment. Two years later, he was back in the area for the Christmas holidays. At that time, the Police went through the evidence room and saw the 2-metre rig. Opening it up to see who it might belong to, they noted an amateur's call. Getting in touch with another amateur, they found out it belonged to K8WDC who was in the area from Texas. As a result, he got a belated present, courtesy the Police Department.*

**MORAL:** Put your call letters, name and address inside that mobile rig.

Reprinted from World Radio, June '82

completed by VK3AMD; with technical assistance from VK3NE and VK3AFW, it was established beyond reasonable doubt that the problem was receiver 3rd order (2F1 - F2 = F3) intermodulation products. The effect is present in almost all receivers, although some have better immunity than others.

One of the most useful 'tools' for the location of intermodulation is a variable RF attenuator. Connected between the antenna feeder and the receiver input, it permits the reduction of the incoming signal in discrete steps and the observation of any overloading effecting the receiver.

It can be seen that a genuine on-frequency signal arriving at the receiver input can be reduced in level at the same rate as the increase in attenuation; yet an intermodulation product caused by receiver overload will disappear immediately the signal causing the overload is attenuated

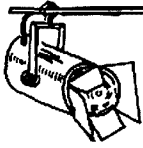
below the overload level.

If, on the other hand, a known intermodulation product drops in amplitude at exactly the same rate as the introduced attenuation, then it is certain that the receiver is not the cause, and the effect probably originates at the locality of the transmitter.

We would like to remind all Amateurs of the importance in giving every consideration to the susceptibility factor of their receiving equipment before investigating or filing complaints regarding what appears to be, commercial or non amateur signals within our bands.

If there is any doubt about your receiving equipment, try to borrow another receiver, preferably one with a known good immunity rating.

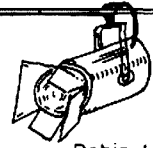
The National EMC Advisory Service is available to assist with any specific problems.



# SPOTLIGHT

## ON

## SWLing



Robin L. Harwood VK7RH  
5 Helen Street, Launceston, Tas. 7250

### ESPERANTO

Recently, in this column, I mentioned that only a few broadcasters were utilizing Esperanto — the artificial language devised to become an International means of speech and conversation. It never quite caught on, as English has become regarded as the universal language.

Purely by accident, I came across Radio Peking using this language on an unusual channel in the maritime radio allocation, on 8.425 MHz at 1300 UTC. The programme that I heard, mainly consisted of classroom lectures in this language. This programme, according to the WRTH is daily and is also on other channels and at other times of the day. Most of the broadcasts in Esperanto are weekly or monthly, from other shortwave stations. The signal was comparatively clear, but this would not always be so, as it is allocated for maritime communications, and there is considerable activity around this channel. You could try either 15.165, 11.685 or 6.995 MHz besides the 8.425 MHz outlet at this time. Two hours earlier, the same programme is on 9.860 and 15.510 MHz.

### NEW DX CLUBS

The DX scene in Australia has changed in recent weeks, with the formation of two new DX Clubs. Both were formerly branches of the Adelaide based Southern Cross DX Club, and have broken away to establish independent groups; one based in Melbourne, and the other in Sydney. The Melbourne group has adopted the name of "DX Australia" and is comprised of most of the serious DXers of the Southern Cross group. In Sydney, they have taken the name of the bulletin that the former SDC group used as the title for their club — "Capital DXers". In the statement put out by this club, they announced they were an independent group of DXers, and the onus would be on individual members which club they wished to support. DX Australia is a completely new organization with a monthly newsletter,

which is identical in layout to the "DX Post" in Adelaide.

The Australian Radio DX Club is therefore the only national organization still in existence. I do have serious reservations whether Australia can support three identical clubs each catering for the same enthusiasts, and duplicating what is obtainable in other magazines. Only time alone will tell if this is so.

### OLD TIMER SWL

Mr. Trevor D. Moore VK6NIU of Coolbellup W.A. has sent me a clipping from a local newspaper about a Joondanna man receiving recognition from Deutsche Welle for monitoring their transmissions for 30 years. He was presented with a service tray and a folk song collection on tape for his efforts. Mr. William Grosser has been submitting reports to various stations for over fifty years, and at 75 years of age, still finds enjoyment from listening and monitoring stations. Thanks Trevor, for submitting the clipping and our congratulations go to Mr. Grosser for a job well done.

### MEMORY EXPANDER

Here is some news for owners of the Yaesu FRG 7700. A Canadian firm has a Memory Expander for this model. As most of you are aware, there is an optional memory unit with 12 channels for this model. By modifying the receiver and memory, this can be expanded to 72 channels! I would imagine with the addition of this Memory Expander, this receiver could possibly be worth getting now. Further details can be obtained from:- Shortwave Horizons, 6815-12th Ave., Edmonton, Alberta, Canada. T6K 3J6

### EVENING OPENINGS

By now, you should be noticing that the higher frequencies are opening up again in the evening hours. With the sunspot number declining, it is unlikely that we will get the phenomenal DX, particularly on ten

and fifteen metres. Also, the lower bands will become rather noisy at night with atmospheric noise present, almost constantly. One compensation will be, however, that with daylight saving in the southern states, we will be able to get up at a reasonable hour and receive signals from Africa.

### WATCH TV

Do you remember seeing in the Dick Tracy comic strip so many years ago, a wristwatch TV set. Well, this has or soon will be a reality. Seiko, the Japanese watchmaker, has released a wrist-screen TV with a 1.2 inch liquid crystal display (LCD) and it draws its light from outside, hence no picture tube is required. There is a headset, which doubles as an aerial. It will weigh 1.5 ounces and will retail in the States for about \$US 400. I suppose that this will be the craze of the future.

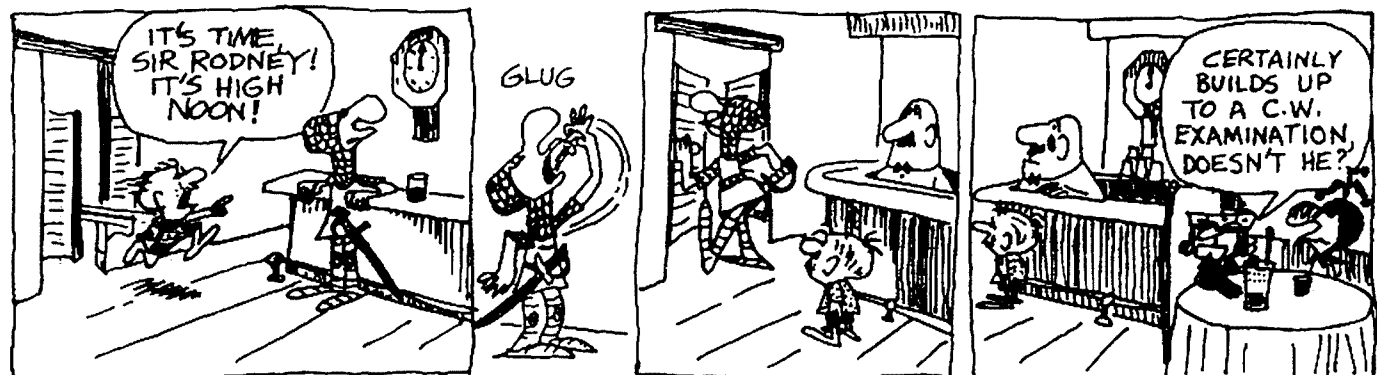
### NEW READING MATERIAL

One useful book I purchased at a recent WIA meeting was titled "Better Shortwave Reception". It has been written by William I. Orr, W6SAI and Stuart D. Cowan, W2LX and published by Radio Publications of Wilton, Conn. While it is written mainly for American readers, it still has a wealth of information for Australian readers. It deals with what shortwave radio is, buying a receiver, aligning it, antennas as well as a section on listening above 30 MHz.

As it has been written for Americans some of the information relates to the domestic requirements, for instance, information on amateur radio and CB, which is different here in Australia. Nevertheless, it is still worth getting as it explains everything in a simple, direct style. It should be obtainable at most Technical Bookshops at a reasonable price.

Well, that is all for this month. I look forward to your company, next time. Until then, the best of 73's and good DXing!

Robin VK7RH



The Propagator — May '82



Mike Bazley VK6HD  
 Federal Awards Manager  
 8 James Road, Kalamunda WA 6076

### OPENING COMMENTS

Many thanks to those of you who took the trouble to comment on my remarks in June A.R., concerning the present status of DXCC. I hope to be able to give you further details of these views in a later issue. Comments ranged from scrapping DXCC to scrapping ARRL DXCC, with the W.I.A. running the International DXCC Awards programme! To give you some idea of what this latter comment entails, the ARRL DXCC awards programme, in 1981, issued 3516 new DXCC awards and checked 526,359 QSLs!!!

### J28 AWARD

The Amateur Radio Association of Djibouti (A.R.A.D.) issues the J28 award to licensed amateurs and SWLs. All contacts must be made after 27th June '77.

All QSOs with J28 stations are valid as well as the special calls J27RDD and the DX-peditions: J28A, J20Z, J20D, plus any provisional J20 calls.

### FIRST CLASS:

8 QSOs with stations in the Djibouti Republic, all modes but a minimum of two (2) bands must be used.

### SECOND CLASS:

15 QSOs with stations in the Djibouti Republic. All modes but a minimum of two bands must be used and 5 QSOs need to be on CW.

The same station can be contacted on several bands.

### APPLICATION:

List the QSOs. Photocopy of the QSLs. The fee is 8 IRCs.

### ADDRESS

Award Manager J28DM, A.R.A.D., P.O. Box 1076, Djibouti, Djibouti Republic, East Africa.

### VK4 AWARD

A note from J. Moulder, VK4YX says that he is the new custodian for the Queensland worked all cities and towns and worked all shires awards. Details of these awards are in the 1981/82 Call Book or alternatively information can be obtained from VK4YX, P.O. Box 323, Warwick, 4370.

### DXCC NOTES

Rumour has it that the ARRL is considering dropping 3 countries from its DXCC list. These are KS4 Serrana Bank, HK0 Baja Neuvo and 8Z4 Neutral Zone. If you haven't

worked these take heart, by September you may have three less countries to work. At this rate the ARRL will soon have to issue a new award called "DXCC Deletions!!" These three countries will take the deletions past the fifty mark.

### OMANI AWARDS

Details of two Omani awards have been received, which are detailed below. Unfortunately my copy of this award is a black and white photocopy so I am unable to give readers a colour description.

The Royal Omani Amateur Radio Society was formed in 1972 under the gracious patronage of His Majesty Sultan Qaboos Bin Said (A4XAA). To celebrate the Tenth Anniversary of this occasion it is intended to operate a Special Event Station for a forty-hour period on the weekend of Saturday 27th and Sunday 28th November 1982.

The callsign of the station is to be A4XX. Times of operation are 0200 UTC on the Saturday to 1800 UTC on the Sunday. The mode of operation will be SSB only on the 10, 15 and 20 metre bands simultaneously.

1. THE "OMANI AWARD" with Tenth Anniversary Endorsement may be claimed by working A4XX on three bands. A special QSL card will be available for single band contacts. All claims for the award should be accompanied by a log extract certified by an amateur radio club official and should also include five IRCs or equivalent. Claims should be sent to The Awards Manager, ROARS, P.O. Box 981, Muscat, Sultanate of Oman, no later than 31st May 1983.

2. "ROYAL OMANI AMATEUR RADIO SOCIETY AWARD" is designed in such a way that it can be awarded for any number of events, contests or conditions as determined by the ROARS Executive Committee. The conditions and parameters, within which the award may be claimed, are as follows:-

The award is currently available to claimants who have worked eight stations SSB or five stations on CW with the A4X prefix. The award will display the appropriate endorsement.

The following conditions must be met:

1. The claim must be accompanied by a "log" extract. This is to be certified and countersigned by an official of an affiliated radio club.
2. Five IRCs or equivalent should be enclosed.
3. The claim is to be addressed to "The Awards Manager", ROARS, P.O. Box 981, Muscat, The Sultanate of Oman.

Incorrect claims will not be entertained or replied to.

Happy Hunting,  
 73 DX. Mike. VK6HD

# COMMERCIAL CHATTER

## "ELECTRONICA 82"

ELECTRONICA 82 — 10th International Trade Fair for Components and Assemblies in Electronics, will take place from 9-13 November 82 in Munich/West Germany.

1,060 exhibitors from 31 countries will show latest developments in the dynamic world market of electronics.

ELECTRONICA is organised into live main product sections. These are:

SECTION A — Semiconductors and tubes

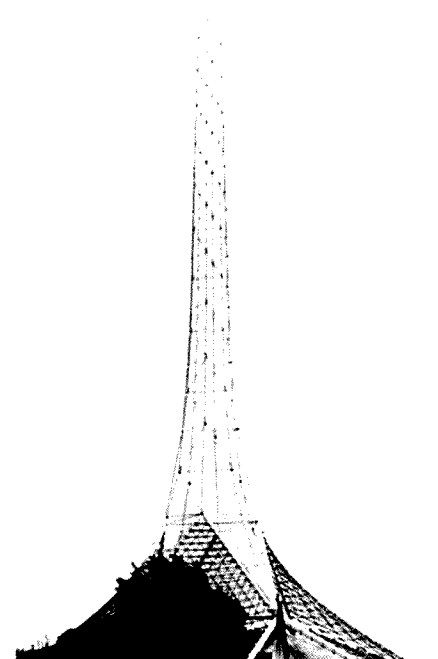
SECTION B — Passive components and connecting elements

SECTION C — Devices made up of components

SECTION D — Electro-mechanical and mechanical components

SECTION E — Aids for electronics development

ELECTRONICA '82 will be supported by an interesting programme of congresses and lectures beginning with the 10th International Congress on Micro-electronics. More details are available from German/Australian Chamber of Industry and Commerce, 18th Floor, Amex Tower, 388 George St., Sydney. Ph: (02) 232 5922 or Melbourne (03) 51 5826, 51 5504.



"My new log periodic and 96 element 70 cm beams will go up next week if the dock strike finishes in time".

(with apologies to the Melbourne Arts Centre).

VK3C1F

Do Not Forget

Jota Weekend  
 16 & 17 October

# CLUB CORNER



## 'LYREBIRD' HAS FEATHERS PLUCKED!!

Back in 1975 the only two Amateurs in the Milton/Ulladulla district. VK2HQ and VK2BTQ (then VK2YDQ), initiated a move to provide a VHF Repeater service for itinerant amateurs on the Mid-South-Coast. A Club was formed for this specific purpose, and over the years the Repeater has filled a need, and the Club has grown (although mostly members of other Clubs). Now, however, the establishment by the Shoalhaven District Amateur Radio Club of a fine Repeater, VK2RSD, on a superior site, has rendered VK2RMU superfluous. The Shoalhaven Club, with its youthful state-of-the-art membership, is better able to cope with Repeater problems than the Milton/Ulladulla retired over-the-hill types. Two country Repeaters, both performing a roughly equivalent service, were considered an unnecessary luxury.

At this stage the Club's Repeater Officer and the Editor of the Lyrebird, because of advancing years, decided to curtail heavy-demand activities. Accordingly, a "Steering" Committee was formed, comprising the amateurs in the district to study the matter, weigh the pros and cons, and present the findings to the October quarterly meeting. This was done, and after discussion the meeting passed the following resolutions:

(1) That the Repeater VK2RMU be shut down as from 1st November 1981.

(2) That the Mid-South-Coast Amateur Radio Club be closed down as from the Annual General Meeting to be held in January 1982 (now February 13th).

(3) That the Executive Committee take the necessary steps to wind up the affairs of the Club and dispose of the assets.

Although this was a majority decision, there is some sadness at the passing of the three-monthly barbecue/meetings, which many have proclaimed as the most stimulating and pleasurable Amateur gatherings they have been associated with. It is not surprising,

therefore, that moves are afoot to reconstitute the Club, on a social basis, to continue the cordial and convivial relationships already established.

Our heartfelt thanks and gratitude to all who have assisted the Club over the years by donations of money, material, loan of equipment, and hard work generally. Mention is made, in particular, of the outstanding encouragement and support given the Club by its one and only five-year President, Frank Hill, VK2HQ. From the beginning, Frank and XYL Jean, made their delightful property available, at personal inconvenience, for barbecues and meetings, and, for four years, tolerated the presence of the Repeater (with attendant nuisance maintenance visits at all hours) in their front garden. Thanks Fred and Jean! The world would be a better place with a few more like you! Our appreciative thanks also to our successive Secretary/Treasurers...VK2YDA...VK2ADR...VK2ATO... and VK2YGY. They have performed duties of sterling worth with mathematical precision. Then, without doubt, we owe a great deal to Bill VK2JJ and XYL Helen for the many hours of Newsletter typing. We fear that Bill's saltmine contracts must have suffered accordingly. Without Bill and Helen the "Lyrebird" would have had a very miserable plumage. Thanks also to Brian VK2AUN whose unstinting assistance involving many hours over this last year, has been greatly appreciated. And not forgetting, of course, all who have supported and controlled our weekly nets, outstanding of whom has been Kevin VK2BKG. Great work, Kevin!

After some 21 issues of Lyrebird, the Editor lays aside his quill with regret, but also with relief at the conclusion of an onerous (to me) responsibility. I trust that all our readers have enjoyed the publication as much as I have in producing it. God bless!

John VK2BTQ

*(Editorial from "Lyrebird" (Final Issue) - December 1981)*

## A COMPLAINT ABOUT A BAD HABIT

*While I am typing this, I am listening to a scanning receiver loaded with most of the amateur repeater frequencies. I had not noticed how epidemic the practice of UNIDENTIFIED TRANSMITTING had become.*

*I hate to bellyache about minor rules violation but this is getting out of control. What I am referring to is repeater kerchunking. It only takes a couple of squirrels to trash a whole town full of repeaters. On the other hand, a whole town full of repeater operators can collectively do the same thing without any intended malice. For example, a thousand operators, each kerchunking once a day, will key a repeater approximately once a minute, assuming they all sleep eight hours a night, and at the same time.*

*I don't have any complaint about people testing their equipment, in fact I think it is a good idea. My complaint is that so many do it WITHOUT IDENTIFYING. The practice seems harmless enough, but it is contagious. Perhaps some of the reason is that the operator does not want to talk, he just wants to test. So what's wrong with saying "VK..... TEST"? Don't answer if someone calls. You can even say, "VK..... TEST AND QSY" to give some reason for not answering. All I am asking is that we try and give a better example than the anonymous CB operator.*

BRUCE VK3UV VIA

JOE K5JB IN COLLECTOR & EMITTER

# EDUCATION NOTES

Brenda Edmonds VK3KT  
Federal Education Co-ordinator,  
56 Baden Powell Drive, Frankston, 3199

## EDUCATION IN VK5

I have recently had the opportunity to discuss education matters and courses with a number of members of the VK5 division. I was most impressed with their enthusiasm and achievements in this field. John Mitchell VK5JM and others have produced a teaching guide to cover the Novice Syllabus and distributed it to all colleges of Further Education in South Australia. This course has now been in use for two or three years, and has resulted in pass rates among students completing the course which are significantly higher than the state average. The course is designed so that the instructor does not have to be an electronics or radio expert. It comes complete with morse tapes and slides, student handouts and overhead projection transparencies, and a suggested time allocation for each section. I have not yet had time to look at the content in detail, but overall it seems to be a most successful project. The only restriction on its broader use is that it is intended for use in an educational establishment, and relies on the availability of a certain amount of 'hardware' and duplicating facilities.

## UPGRADING COURSE

A VK3 group is now working on putting together a similar package for an upgrading course from Novice to Full Call. Any comments or suggestions from amateurs who have been involved in such courses, either as student or instructor, would be most welcome. Send your ideas to me QTHR or via the Executive Office, or call in on the Education Net which runs Wednesday evenings on about 3.685 MHz at 12.00 UTC.

I have also been in touch with a number of groups in Northern VK3. Many of those contacted report a drop in the demand for classes this year, but they are still offering classes if there is a demand. If you know someone who wants to gain a licence, find out what is being offered by nearby clubs or TAFE colleges.

## NEW NOVICE TRIAL EXAMS

I hope to have a new Trial Novice Theory Exam paper ready about mid October. If you are studying as a class member, check with your instructor before requesting a personal copy. I strongly advise all intending examination candidates to do as much practice as possible on multichoice questions under simulated exam conditions. Also, make sure you know why each answer was right (or wrong). There are many sets of questions available now. Even the poor questions have some learning value.

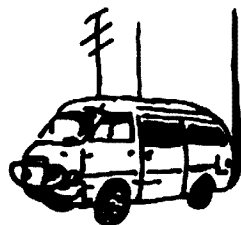
Keep at it — there's not much longer to go now.

73 Brenda VK3KT

# WICEN NEWS

## JENOLAN CAVES RESCUE

R. G. Henderson VK1RH  
171 Kingsford Smith Drive, Melba, ACT 2615



The Jenolan Caves are a tourist area about 3 hours drive west of Sydney. A number of the caves have been set up with paths, lights and guided tours for the public. Private exploration of the 300 caves in the area is restricted.

On Monday 23rd August a 15 year old youth, who was described as a cave fanatic, left his party to do some private exploration. He was only equipped with a box of matches.

When he did not return a search was organised. This was the first time in the 50 years that the caves have been open to the public that anyone has become lost in the caves.

In NSW the Police are in charge of all search and rescue operations, however the Police Rescue Squads do not have expertise in cave rescue.

The Cave Rescue Group of the NSW Volunteer Rescue Association were called in to direct the search operation. Like WICEN the Cave Rescue Group is one of the state-wide specialised squads of the NSW VRA.

By Tuesday midday the VRA, Police Rescue Squads, Local Bushfire groups and the Park officials had conducted a search of the nearby public areas above the ground. The underground search was continuing and a second shift of Cave Rescue personnel had been brought in to relieve those who had been underground for many hours.

Back in Sydney, other VRA squads such as the Bushwalkers Search and Rescue Group and WICEN were monitoring the situation in case of a step-up in the level of the search activity. Obtaining information on the current status of the search was made more difficult by the failure of all telephones at the Police Rescue HQ in Sydney.

As the afternoon passed with no sign of success, WICEN and the Bushwalkers S&R groups were placed in a state of readiness in anticipation of an expansion of the search activities.

The boy had been missing for over 30 hours and fear was expressed that he would have to be found soon. Although every sign indicated that he would be in the caves, there was always the possibility that he might be on the surface and with the cold nights could be suffering from severe exposure, especially if he was to be out for another night.

At \*242000K on the Tuesday the Katoomba Police Rescue Squad activated WICEN and requested 18 radio stations to be at Jenolan Caves and ready to go into the field by 250600K the following morning.

WICEN groups in the Central Western

region and the 3 Sydney regions were activated and prepared to leave for the area.

Whilst the Sydney groups headed for bed for a few hours rest before departing at 250300K, the Central Western group set about restoring the ch 6650 2m repeater at Mt. Bindo. This repeater is located near the site of the rescue, however, it had been partially dismantled following very high winds which had sheared the shaft on its wind generator.

From previous experience with searches, such as the search for a missing aircraft at Barrington Tops, we knew that there was the possibility of the search continuing on to the Thursday. Accordingly a relief group was also organised from amongst those who were unable to attend on the Wednesday.

Additionally home stations were rostered to provide a link back from the rescue site to the various HQ groups in Sydney.

After the period of hurried activity by WICEN Co-ordinators, everything appeared to be set for the start early the following morning. All operators had been told to carry some food in their cars as they could not be certain that they would be fed by the authorities and they were to carry some light refreshments in their pockets in case they found themselves away for a long period.

Just after 242230K a message was received that the searchers had voice contact with the boy and his parents were to be returned to the site. Rather than act on this information immediately to call off the activation, efforts were made to verify that the search was over. This action was taken because a Sydney group had been turned back on similar information earlier in the year — only to arrive home to find a message waiting telling them that the search was continuing and that they were to set out again. On that occasion many hours had been wasted.

The fact that the boy had been found only 30 metres inside one of the larger caves was soon confirmed and the activation procedure was started again. This time in reverse to notify everyone that they could enjoy a full nights sleep.


Everyone was relieved that the boy had been found uninjured and in reasonable health. He had apparently moved into the cave and his matches had run out, he fortunately had realised that to move about in the pitch blackness would result in injury. He had sat down where he was to await his rescue some 33 hours later. This was the most sensible thing to do in the circumstances and it must have taken a lot of courage.

A number of interesting lessons were learnt from this event. Apart from the WICEN members, who discovered that some of their gear wasn't in the state of preparedness that they had assumed, the fact that the call out occurred during the week severely restricted the number of people who could drop their work commitments and travel to the rescue site. For some the cost factor was also a problem. The return trip would have consumed a full tank of petrol. As a volunteer organisation WICEN provides its services FREE of any cost to the victims, the agency calling on our services or the general public.

That the Police had called on WICEN for such a large number of stations indicated that they would be placing a significant load on the amateur network and was a reflection of the trust and understanding that is being built up between WICEN and the authorities.

\* The times eg: 240300K are defined by date (24), time groups (0300) local (K).

D.R. Mackay, VK2ZMZ  
NSW WICEN Coordinator



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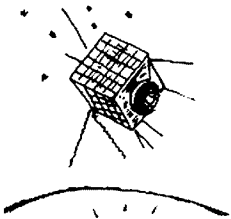
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# AMSAT AUSTRALIA

Bob Arnold VK3ZBB

41 Grammar Street, Strathmore 3041



The contents include operating frequencies and Aerial Polarizations as well as a lot of basic information on practical operating. Whilst several references are quoted, only one practical project - a 29 MHz pre-amplifier - is described in detail. My main criticism would be the lack of detailed information to interpret satellite telemetry information. In summary, a handy reference book for the experienced satellite operator and a must for the amateur (or listener) wishing to enter the fascinating world of satellites.

The Guide is obtainable from AMSAT-UK 94 Herongate Rd, Wanstead Park, London E125EQ for 55p plus 89p airmail (approx \$2.60 + draft). I have a number of copies on order for delivery by sea, hopefully in October, and will send these anywhere in Australia for \$1.90 each.

## CABLESAT

Information has been received that Cablesat General Corporation (CGC) has filed with the F.C.C. a request to launch and use two geostationary satellites.

Each satellite will be operated professionally but will have incorporated in it, an Amateur Transponder known as 'ARNET'.

The transponder will have an input frequency in the 5GHz band and the down frequency will be in the 3GHz band.

Ground station requirements will be modest, a 2m dish with ten Watts input power will be adequate.

A launch date in late 1985 is anticipated.

The location of these satellites in geostationary orbit is awaited with great interest.

## UOSAT

Despite the problems which have arisen on the command of UOSAT, considerable technological advance has been made with this satellite. The following report by Dr Martin Sweeting, G3YJO, the UOSAT Project Leader, reprinted by courtesy of AMSAT-UK is included to permanently record these achievements.

### UOSAT SPACECRAFT PROJECT - PROGRESS REPORT 9 JUNE 1982 Dr. M. N. Sweeting, G3YJO Project Leader

*UOSAT-OSCAR-9 was launched successfully by NASA on 6th October 1981 on board a DELTA 2310 from the Western Space & Missile Centre, Vandenberg, California at 11:27 UTC into a 554 km, 95 minute, polar, sun-synchronous orbit. Shortly after separation from the DELTA vehicle, the spacecraft primary (VHF) data transmitter was switched on by the Surrey Command Station and later the telemetry system was activated - providing data on the status of the satellite.*

*This report summarises the progress and status of the UOSAT spacecraft during the period from March 1981 to June 1982.*

*A series of detailed papers covering the UOSAT project have been submitted to the IERE for publication in an issue of their journal devoted entirely to UOSAT. Rather than duplicate the proofs for this report, copies of the journal will be sent to all project sponsors and will be made available, on request, to those who have been associated with the Project in other ways.*

*In summary, the following systems have been activated and found to be functioning nominally:*

- Telemetry (1200, 300, 110, 45.5 baud, morse code, & dwell mode)*
- Telecommand and computer uplinks*
- Power system*
- 145.825 MHz General data downlink transmitter*
- 435.025 MHz Engineering data downlink transmitter*
- Navigation magnetometer (One axis exhibits an offset)*
- Primary spacecraft computer (RCA 1802 - problem with computer/command port)*
- Secondary spacecraft computer (FERRANTI F 100L)*
- 20 keV particle detector experiment (40 keV detector not functioning)*
- Primary magnetometer experiment*
- Visual Display Experiment (Test pattern)*
- CCD camera (several random images)*
- Speech synthesiser (under control of the primary computer)*
- Attitude control magnetorquer*

*The Particle Experiment has detected several major electro-magnetic storms during October 1981 and February 1982, yielding counts in excess of 10,000 per second over the auroral regions. (The background count is usually around 50 per sec.)*

*Both on-board computers have been in operation since October, providing autonomous control of the spacecraft and the remote collection of experiment and telemetry data, whilst also generating useful data on the performance of both static and dynamic CMOS memory devices in a space environment.*

*The current orbit parameters are as follows:*

- Period 95.066814 minutes*
- Period drag factor .0006539202 minutes per orbit (subtracted)*
- Increment at orbit 23.765189 degrees W per orbit*
- Increment drag factor 0.0000135673 degrees per orbit (subtracted)*
- Inclination 97.462 degrees*
- Mean altitude 535 kilometres*
- (Note: UOSAT has 'dropped' some 20 km in altitude since launch due to atmospheric drag).*

## COORDINATOR

Chas Robinson, VK3ACR

## CORRESPONDENTS

VK3YQX, VK5AGR.

## ACKNOWLEDGEMENTS

AMSAT Satellite Report, AMSAT-UK News

## INFORMATION NETS

AMSAT AUSTRALIA 1000 UTC Sunday and Wednesday 3.680 MHz winter, 7.064 MHz summer. Control: VK3ACR.

AMSAT PACIFIC 1100 UTC Sunday 14.305 MHz. Control: JA1ANG

AMSAT SW PACIFIC 2200 UTC Saturday 28.880 MHz. Control: W6CG.

From time to time quite a number of stations in all States join the AMSAT - Australia net on Sunday and Wednesday evenings. Control station, Charlie VK3ACR is aware that there are also a number of listeners to the net - licenced amateurs educationalists, computer buffs and SWL's. Charlie would like to hear from these listeners with some comment on his signal strength and suggestions on what is required for the broadcast. Drop a note to Charlie at 338 Dorset Rd. Boronia, Vic, 3155; it will be appreciated and acknowledged.

## SATELLITE STATUS REPORT UOSAT 9

As previously reported the 46 metre dish at Stanford Research Institute, California was turned to track UOSAT. Several good tracking runs were made but the satellite did not respond to commands directed to it from the SRI transmitter. It appears that the 2 metre command receiver has precedence over the 70 cm command receiver.

The SRI station is now being reconfigured to permit command attempts on 2 metres.

## ISKRA RK02

It has now been confirmed that ISKRA 2 fell from orbit at about 0019 UTC on 9 July at a position just Northwest of the Canary Islands. To date there has been no comment from the USSR but it would seem that whilst the beacon performed well on 29.578 MHz the prime objective of operating the 21 to 29 MHz transponder was not achieved.

## AMSAT OSCAR 8 AND RS 3 to 8

Operating to schedule.

## PUBLICATIONS

I recently received a copy of the 1982 edition of "Guide to Oscar Operating" published by AMSAT-UK. Although including a short section of history, the text is right up to date and gives useful data on Oscars 8 and 9 together with RS3 to 8. Provisional data is given for AMSAT Phase III B so the book should remain current into 1985.

## UOSAT PRE-LAUNCH ACTIVITIES

A period of intense activity occupied the six months before launch and, rather than follow a blow-by-blow account, the major features are summarised:

### PRINTED CIRCUIT DESIGN & FABRICATION

An essential facility for the development of the electrical sub-systems was the computer-aided printed circuit layout-machine - the RACAL CADET. This facility enabled us to design the PCB layouts in-house, often by, or at least associated with the sub-system designer, yielding fewer mistakes and far more rapid turn-around than could be achieved by sub-contract. Five members of the team were taught to use the machine and after around one week's experience it generally took about 1.5 days to lay out a single (double-sided) PCB for the standard sub-system box containing around 45 IC's. More important still was the ability to have artwork back within one day, a prototype PCB within three days and later, modifications to final flight PCB's within a week! Flight PCB's were produced by MHOTRAK Ltd.

The CCD Imaging Expt. and Primary s/c Computer PCB's were generated by a sub-contractor and CERN respectively.

### SUB-SYSTEM TEST

The electronic sub-system development followed the well-trodden path of:

#### BREADBOARD

All the spacecraft sub-systems were constructed in a bread-board arrangement initially to assess overall performance, interface compatibilities and to uncover any unexpected problem areas. Provisional component procurement, interface and harness documentation was generated at this stage.

#### ENGINEERING MODEL

Engineering models of the spacecraft sub-systems were used to evaluate detailed system performance, interface and E.M. compatibilities, spurious emissions and responses and mechanical integration problems. Each sub-system was subjected to Flight qualification Environmental Tests as follows:

Vibration - after initial screening test, 1.5 times the levels and duration of the Delta Restraints Handbook

Thermal - 100 hours thermal cycling between + 50°C to -30°C.

Life Test - 1000 hours soak test at room temperature.

Antenna - a full scale RF model of the s/c structure with antennas was evaluated  
Deployment - Deployment of the gravity gradient boom and H.F. antennas were tested.

### FLIGHT MODEL AND SPACECRAFT INTEGRATION

Due to the extremely tight schedule (launch date had been provisionally brought forward six weeks), the flight-rated spacecraft structure that had been used for the flight acceptance vibration tests and the launch vehicle fit-check was cleaned to be used as the flight model. All flight hardware was assembled, and the spacecraft in-

tegration carried out, in the clean area using clean procedures. The assembled sub-systems underwent thorough test and preliminary calibration before a screening environmental test sequence carried out at Guildford, followed if satisfactory, by a sinusoidal sweep vibration test at flight acceptance levels using the RAE facility nearby at Farnborough. The sub-systems were thermal cycled between +50°C to -30°C on a 12 hour cycle for three days. Wherever possible, an additional 1000 hours operation at room temperature was also completed.

Final flight acceptance tests of the integrated spacecraft were carried out at the environmental test facility at British Aerospace (Stevenage):

Spin Balance - spacecraft structure underwent both static and dynamic balance to within  $\pm 10\text{gm}$  metres

Vibration - all axes to levels and duration specified in the DELTA restraints handbook.

Thermal Vacuum - thermal cycling according to test profile within +40°C to -20°C.

Solar Array performance tests were also carried out at the RAE facility and VI calibration curves obtained with reference to AMO.

The structure was de-gaussed and magnetic cleanliness tests performed at the Goddard Space Flight Centre Magnetic Test Facility (USA). The primary and navigation magnetometers were also calibrated.

Electro-magnetic compatibility tests were carried out both at University of Surrey and the Western Test Range, however it was not possible to perform these tests in an anechoic chamber.

### DEVELOPMENT AND FABRICATION LABORATORY FACILITIES

A clean area for the assembly of the flight modules and the integration of the spacecraft was not initially available at the University, so a small clean-room was constructed from wood with a polythene roof within an existing laboratory. The clean-room measured 12' x 12' x 8' and was kept under positive pressure by a filtered air-pump to maintain a dust-free atmosphere. The inside of the clean-room had been painted four times at intervals of four days after pressurisation to 'stick down' any dust. The cost of the clean-room was around £350 and proved to be considerably cleaner than most of the external test facilities. Gowns, gloves, over-shoes and hats were worn at all times in the clean area which was frequently vacuumed. By far the greatest amount of debris found was of human origin (hair, fluff).

A separate development lab area was established adjacent to the clean-room where the spacecraft modules were developed, tested and the ground support equipment assembled.

A 200 sq. ft. area was used for the Project Office and the assembly of the Ground Control Station adjacent to the main tracking antenna system.

### ELECTRICAL HARNESS

Inter-module electrical connections are made using standard 25 way 'D' connectors, with a maximum of three on both long sides of each module box. The wiring harness assembly runs up the outside corners of the central column and around its 'waist'. The 'D' connectors are high temperature mouldings with recessed pins and all wiring is PTFE (TEFLON) coated. Each connection to the 'D' connectors is sleeved with PTFE tubing, the connector secured with captive bolts and the joints supported by RTV potting compound. The electronic module boxes are all mechanically identical to ease fabrication, assembly and integration with the spacecraft.

### THERMAL FINISHES

Thermal analysis of the heat flow around the spacecraft body stepped through one orbit showed that the energy dissipated by the spacecraft electronics could be considered negligible compared to the energy falling on the solar arrays during the illuminated portion of the orbit. In order to maintain a reasonable operating temperature the top of the spacecraft is completely, and the 'bottom' partly, covered with silvered TEFLON Optical Solar Reflector (OSR). The reverse facet of each of the solar array panels is covered with KAPTON film in order to radiate heat away from the array itself when illuminated. The spacecraft should maintain a slow residual spin around the 'z' axis even when stabilised, in order to even out thermal gradients. The spacecraft has been designed to operate with a battery temperature between 0 to +20°C.

### LAUNCH AGENCY INTERFACES

Whilst there was direct contact between the Delta Project Office and the University of Surrey, AMSAT acted as a local UOSAT representative and dealt most effectively with the day-to-day matters thus minimising travel (three UOSAT visits to Delta and one Delta visit to University of Surrey). AMSAT-USA were, of course, heavily involved in the UOSAT Project as they contributed the Primary Magnetometer Instrument and thus were quite familiar with UOSAT.

The paperwork normally required by NASA presented a severe problem to the small UOSAT team who had neither the manpower nor the experience to comply fully. Delta responded by agreeing to minimise the paperwork to that necessary to satisfy the mission specification and safety requirements, whilst AMSAT agreed to advise UOSAT closely on the preparation of the necessary documents, comprising:

- Spacecraft Questionnaire
- Mission Requirements
- UOSAT Spacecraft Structural Analysis
- UOSAT Launch Procedures
- UOSAT Safety Drawings and Procedures

A documentation schedule was agreed with Delta taking into account the UOSAT timetable, although, as usual, this timetable proved difficult to maintain due to the pressures of spacecraft development.

Two major reviews took place between UOSAT-AMSAT-DELTA. The first was a 'fit-check' at the McDonnell Douglas Delta production facility at Long Beach Ca. where

the flight UOSAT spacecraft structure was mated to the upper stage of the vehicle. This proved to be particularly valuable as several potential integration problems were identified in time to be rectified and it was also possible to run through the detailed spacecraft mating procedures. A second major review was held at University of Surrey three months before launch where final launch campaign details were refined and final Delta integration and structural analysis examined.

UOSAT requested minimal support facilities from the launch site at Vandenberg Air Force Base, agreeing to cover all launch support requirements from either University of Surrey or AMSAT. Considerable launch support was provided by AMSAT members in California in terms of test equipment and necessary logistics. UOSAT requested a 400 sq. ft. clean area and a similar office area at Vandenberg with appropriate power sources only. In fact, the NASA-DELTA-MDAC launch support staff were only too pleased to provide any additional support necessary during the campaign, and were most helpful.

The UOSAT launch campaign comprised:

- 2 days shipping by air
- 3 days Magnetometer calibration at GSFC
- 2 days shipping by air
- 4 days Spacecraft final flight preparations
- 3 days Final spacecraft functional and calibration checkout
- 1 day Spacecraft integration with Delta 2310 vehicle.
- 23 days spacecraft enclosed in nitrogen purge bag awaiting launch.

#### ORBITAL SYSTEM PERFORMANCE

Following the successful launch and orbital insertion of the UOSAT spacecraft on 6th October 1981, the 145 MHz downlink transmitter was activated on the first orbit from the command station at University of Surrey. The downlink data selectors were initially set to monitor the data uplink and the next day the telemetry system was activated and 300 baud data transmission commenced. Initial telemetry data indicated that all the service substations were performing correctly and that the spacecraft was stable and spinning around the z-axis at a rate of once every 27 seconds. The spacecraft batteries stabilised at +3°C and since launch have cycled between -5°C and +6°C on an approx. six week cycle.

A checkout sequence was then initiated, progressively powering-up the engineering and science experiment sub-systems — all systems responded successfully. The importance must be stressed of a thorough and systematic check-out of the s/c computers, control algorithms and the calibration of the navigation sensors initial s/c orientation, before any attitude manoeuvres are attempted.

#### CONCLUSIONS AND FUTURE PROGRAMS

The UOSAT Project has clearly demonstrated the feasibility and capability of a small, low-cost space program within the U.K., carried out between a University and British Industry and Research Organisations. Commencing in January 1979, the

spacecraft was constructed, satisfactorily passed full functional and environmental tests and successfully launched by NASA two and a half years later within a cash budget of £120,000 with additional facilities to the value of around £100,000. The UOSAT spacecraft has been operating correctly in orbit for over seven months and has returned large amounts of engineering and science data. The 40 keV particle detector appears to have been damaged during launch and some difficulty has been experienced using the primary computer to control the spacecraft day-to-day operations. One axis of the navigation magnetometer exhibits an offset and it was not possible before launch to achieve as great a degree of isolation from the VHF/UHF antenna hybrid as was desired. A problem associated with this latter constraint occurred in April 1982 temporarily halting data flow, however, the problem has been simulated on the ground and should be resolved within weeks. All other spacecraft systems are performing nominally.

Several lessons may be learnt from the Project, summarised as follows:

A small team can successfully generate and manage the resources necessary to design, build and operate a small spacecraft capable of worthwhile scientific and engineering contributions.

A project of this nature can be successfully completed within a tight budget of around £225,000 and within a very short timescale of 2.5 years. It is only possible with a highly motivated, above average capability, multi-disciplinary team.

Geographic compactness of the primary team and in-house resources are essential.

Although several changes in approach would be taken for any future similar project, the basic approach is sound.

The post-launch operation and data collection from a low-orbiting spacecraft should not be underestimated and requires similar resources to the design and construction phase.

A person dedicated to realistic documentation control, procurement and interface control is essential.

The importance of the UOSAT Project is in that it has demonstrated the potential for a continued national space program, within a very reasonable budget, capable of significant science and engineering return. The relevance of low-cost spacecraft is directly related to the availability of inexpensive and useful launch opportunities. A number of sources exist and occasional opportunities do occur:

- NASA secondary payloads - expendable and STS
- ESA ARIANE secondary payloads
- USAF
- Commercial launch agencies - Space Services Inc.,
- India
- Japan
- Russia

Providing cost-effective launches can be procured, the scientific and engineering communities have a facility for carrying out

relatively small but profitable scientific, technology or applications experiments within a realistic budget, as an alternative to large and costly programs which favour exotic proposals and tend to preclude small science and industrial experiments.

#### ACKNOWLEDGEMENTS

It is impossible to acknowledge properly the very many individuals, groups, companies, research organisations and government departments that in some way or another supported the UOSAT Project and by their efforts ensured its success. It is equally impossible to isolate those who played an essential part as, in many instances, the provision of some small or relatively inexpensive part or service resolved a potential problem which would otherwise have halted the Project dead in its tracks and ensured that UOSAT would never have made the launch date! It was their personal determination in resolving the myriad of technical and logistical problems in the shortest possible time that made the Project a success on a short timescale.

It is appropriate to acknowledge with special appreciation the contribution of the primary sponsors of the Project as it was their 'faith' in the proposal to undertake a high risk project of this nature which, in hindsight, was well justified but, at the time, appeared well nigh impossible. I would similarly like to thank Dr. Frosch at NASA Headquarters for their support of the mission, Frank Lawrence of the NASA DELTA Project Office for their advice, commitment and particular helpfulness, McDonnell Douglas and Gene Langenfeld at Western Test Range, Vandenberg for launch support.

I particularly thank Jan King (AMSAT-USA) for his very hard work, perseverance and deep commitment to ensuring the success of the Project in the face of great difficulties.

I would like to acknowledge and thank my colleagues at the University of Surrey and within AMSAT for their faith, support, determination and endurance throughout a very taxing two years. None of this would have been at all possible if they had not given freely many hours of their own time.

#### AMSAT-UK PUBLICATIONS

Selected items available from AMSAT-UK at the address given previously in this column. Prices include airmail, and are in Pounds Sterling, current as at September 1982. It is essential that Money Orders etc. be made in Sterling on a UK Bank.

- Bi Monthly Orbital Calendar for Oscars and RS satellites. Twelve months supply as printed £9.00
- Single copy £1.58
- High gain 28MHz Pre-Amp PCB with circuit diagram 90p
- "The Best of Oscar News" Vol 1 £2.00
- 35mm Slide Set on UOSAT building and launch set of 6 £2.35
- set of 20 £4.25
- UOSAT Handbook £3.00
- Oscar - Amateur Radio Satellites (1976) £6.30
- Membership contribution 1 year £9.50





# VHF UHF - an expanding world

Eric Jamieson VK5LP  
1 Quinns Road, Forrester, SA 5233

This will be the last of these notes to be partially prepared whilst on the "Round Australia on Highway One" trip. My special thanks to David VK5KK for providing the bulk of the information as news seems to get scarcer the further one gets from home! Next month it will be back to the usual grind and these notes should contain some information obtained from the VK5LP shack.

Twice weekly skeds have been kept with VK5KK throughout the journey, on 7 MHz, the only band suitable for coverage from the various points visited. 3.5 MHz was reasonable until the distance lengthened to 1500 km and further and signals started to lose reliability. A switch to 14 MHz produced nil results due to the time of the year and local night time. So it became a case of mixing it with the Asian stations on 7 MHz with considerable success. Equipment from the mobile/portable shack consisted of a FT7B and a set of Yaesu base loaded mobile antennae designed for a gutter mount on the car. David's signals were nearly always S9 and mine varied from S5 to S7 which we considered to be very good under the circumstances. So now with the trip nearly over it will soon be time to put away the HF equipment and get down to some solid working on the VHF bands.

Since last writing I have spent an enjoyable couple of hours talking with Joe VK4JH in Townsville and learning something about what makes the man tick, and why he is so interested in VHF. It will make the future 6 metre contacts with him that more enjoyable and we look forward to doing it one day on 2 metres!

Caught up with Ross VK4RO one Saturday morning when he was very busy with his work, but he spared me half an hour in which to talk over a few VHF matters, and to provide me with a replacement coaxial fitting as I had left mine at home. This fitting was needed to allow two rigs to be connected to the car battery at the same time. Ross was still feeling very satisfied with the 2 metre contacts he had with me and others in VK5 earlier this year. I was able to assure him the feelings were mutual.

I hope to meet with Steve VK4ZSH in Brisbane if at all possible, but it is not easy when you are one of a party of 12 people and being the only one with radio interests. There's also Tom VK2DDG at Byron Bay, but it is dependent on dates and times for a meeting to occur.

The only letter I have received in the spasmodic mail whilst touring, this month comes from Bill VK2HZ, who reports: "The disturbed ionospheric conditions of the week ending 17/7/82 provided plenty of problems and unusual conditions for HF operators. The main disturbances were mid-week on Tuesday and Wednesday, the A index at one stage peaked at 133 and the K

index at 8, with the solar flux figure over 250.

"This did permit Rob VK3XQ and Bill VK2HZ to QSO at 0025 UTC on 14/7/82 via the auroral region. Signals peaking S5 were badly distorted phone and CW alike. The contact lasted 10 minutes. VK3XQ was beaming south of east and VK2HZ east of south. It is quite possible other contacts via the same medium were recorded during the same period."

Thanks for writing Bill, always interested to hear on any such contacts especially when via some of the more unusual mediums.

## SIX METRES TO THE NORTH

Bill Tynan W3XO writing in "QST" continues to report considerable 6 metre activity in the US. The August issue of "The World above 50 MHz" mentions, amongst other things, some more exploits of W6JKV (reported recently for his DX-peditions as C5AEH, 3D2JT and A35JT). This time he journeyed to Isla Revilla Gigedo, off the west coast of Mexico, and succeeded in putting that rare country on the 6 metre map.

Due to a mix up and other problems his linear amplifier and beam antenna were held up and he had to content himself upon arrival on the island with a 10 watt exciter and a simple vertical antenna, but nevertheless managed to work a number of US stations.

His amateur ingenuity soon came to the fore and upon finding some scraps of wire and with dimensions radioed on 6 metres by W7KMA soon had a 3 element beam of sorts working, with considerable improvement to signals, and worked more than 100 stations as far away as eastern USA and Canada.

## 6 METRES WITH VK5KK

Not as much DX as July. Most notable opening to VK5 was on 8/8/82 around 0300 UTC when the band was open to JA on 50MHz. No signals on 52. Tropo conditions on 22/8 enabled VK5ZEE at Woomera to work Adelaide (around 2300UTC), distance about 400 km. Neal, VK5ZEE, is currently operational on both 6 and 2 metres from Woomera. He will soon have 100 watts of SSB on 432 MHz also (around late September). He listens on 28.885 MHz.

## 2 METRES AND ABOVE WITH VK5KK

Good tropospheric conditions prevailed over the southern portions of Australia during the last week of August, once again created by un-seasonal weather conditions (One great big high pressure cell). Best day by far was 26/8. On 2 Metres Mick, VK5ZDR, worked quite a number of VK3 (Melbourne stations) up to 1400UTC. I only heard VK3ZCW and VK3YDE on my 3 element (still haven't got all the antennae back up again!). FM channels seemed to be buzzing

with several VK7 stations being able to access the Adelaide Channel 8 Repeater early in the night. Ch3 Ballarat, Ch7 Mt. William, and Ch 6 Mt. Gambier audible from 0930 UTC on. Also Ch 5A TV (ABC) possibly from Western VK3 and Ch 6 Ballarat TV at good strength.

On 432 MHz not quite the same activity but still good conditions over quite long distances during the same periods. On 22/8/82 very good local signals but the only signal to the SE was VK5ZO at Mt. Barker calling CQ (CW) at 1000 UTC. On 26/8 however, around 1200 UTC signals appeared on 432.1 MHz, although it took a while to work out where they were coming from! By 1215 UTC signals became readable and at 1220 UTC I worked Les, VK3ZBJ (Frankston, 780 km.) peaking to 53 at 1224 UTC. He was in contact with Rob, VK3BHS. When Rob turned his beam at 1227 UTC his signal was a good 57, varying only by 3 S units over the next 30 minutes. Rob, at Stawell, runs 20 watts to 4 x 16 element yagi's at 50 feet. Les's signal exhibited virtually the same fading but at a much lower signal level due to the extra 240 km.

Locally not much more to report on apart from the drought conditions brought about by the above UNSEASONAL weather patterns. Those living in the rural sectors that are affected (not too many aren't) would rather see a more winterish pattern, even though it is nearly too late to do much good. Eric will be back at his home QTH in two weeks after travelling around the top half of Australia (Your car should be well and truly run in now, Eric!)

73 from David VK5KK.

## SMIRK 50 MHz TROPHY

K5ZMS of SMIRK has been conducting a search to see who was the first station to work 50 countries on 6 metres, and Alfredo, LU3EX has been declared the winner. We congratulate Alfredo, who has done so much to put VHF on the DX map for a long time. Others who were in the running included JA1RJU, JA6RJK and KH6IAA, who will probably be eligible for the new SMIRK certificate which will be made available to operators who show proof of contacts with 50 different DXCC countries. This certificate might be very difficult for a country like Australia but one can never tell, it will come one day without doubt.

Having nothing else to report at this stage it seems appropriate to conclude. By the time you read this we should be in the middle of the spring equinox with the possibility of a few late F2 and other tropo contacts.

Closing with the thought for the month: "The best measure of a man's honesty isn't his income tax return. It's the zero adjustment on his bathroom scales." 73. "The Voice in the Hills."



# LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.



The Editor,

60 Yellow Rock Rd.  
Uranga, NSW 2455

Dear Sir,

Last one evening on 80 metres on the 3rd August last, I heard a group of amateurs on the novice section indulging in rather un-amateur like communications. After listening for some time, I heard a VK5 station break in to request the use of call signs. The group apparently took umbrage at being requested to the use of call signs. The VK5 station then pointed out, quite correctly it was good manners to use call signs when signing and finishing an over, it also helped set a good example for the new amateurs joining the band. At this point the VK5, signed and went clear. Where upon he was immediately denigrated, by the remaining VK2 stations for his "narrow mindedness" by requesting true amateur status be preserved on the amateur bands. About this time two other stations were heard to "break" one being a ZL station the other a local novice.

What ensued was a good example of bad manners, various overs being conducted, without inviting the ZL to join in. They had indicated they heard the ZL station when first he "Broke". At this time another station broke in to inform them that the ZL had not been invited to join the group.

This was noted, and a while later they decided to call the ZL in. Ten minutes would have elapsed from when he first tried to "break in". Naturally the New Zealand station had grown tired of being "left out in the cold." Surely sir, we don't require such rudeness on the amateur Bands.

Yours sincerely,  
B.H. Lackie VK2DLM

P.O. Box 1319, Southport,  
Gold Coast, Qld. 4215

The Editor,

Dear Sir,

Through this magazine I wish to express my views on what appears to me to be the thin edge of the wedge to the annihilation of amateur radio as we know it today.

Up to only a few years ago, to be an amateur radio operator required someone with the necessary technical and mechanical expertise to make or assemble the apparatus known as a radio transmitter or receiver. Today, I would guess that 99% of us buy commercial equipment, ready to go, for a variety of reasons. First and foremost is resale value of used equipment. Second would be pride of ownership of the latest and best. Thirdly, anyone who dares to say "I made it" is considered some kind of nut.

What all this means is that you do not require any technical expertise at all to operate a modern transceiver. Modern equipment is also very complex, so most persons shy off doing their own repairs. So this has set the stage for the non-amateur — the Pirate!! He or she can buy the latest transceiver (no license required) can install it at home, car or boat (no technical skill required) will operate illegally using made up call signs and when it cracks up will take it to your local radio repair specialist for repairs and no questions asked.

Now how about the trade answering a few pertinent questions:

1. How many transceivers capable of being used on amateur bands were brought into this country in the last five years.
2. How many were sold?
3. How many were sold to licensed operators?
4. Would retailers be willing to put their name to a list to be published in this magazine stating that they have not and will not sell to unlicensed operators?
5. Will this magazine publish such a list, so all concerned amateurs can blacklist those not on the list?

I feel that a quick survey of retailers will soon sort out those who feel that as long as the pirate operator behaves one's self, he/she is best left alone. This action condones piracy!!

What is the attitude of amateurs to the Pirate menace, at individual, club and WIA level? I believe that by their inaction, the WIA stands condemned. Why hasn't the WIA for the protection of its members, present and future, taken a hard core line with DOC on this matter?

Why don't Amateurs as individuals stand up and be counted on issues? Because in general, we are nice guys on air and "do nothings" off it.

How do you stop the rot? By changing the Law to make it mandatory for all sales of transmitting equipment to be sold only to licensed operators. This must be done at the point of sale — the retailer. He must also keep a list of all transceivers bought and sold along with make/model/S/N the same as the dealer in pistols or motor vehicles has to do.

Will the WIA take up the challenge?

Yours faithfully,  
Nev. Wright VK4ANW

## Editor's note:-

**One of the WIA's policies for many years has been 'point of sale licensing' and/or making the retailer responsible for ensuring transmitting equipment goes only to those licensed to use it.**

**We open here unfortunately a 'Pandora's Box' — how can it be enforced? What about used equipment?**

**Current legislation allows the sale of imported radio equipment by any person capable of obtaining the necessary customs clearance.**

**The Trade Practices Act (Restrictive Trade Section) and possible libel charges are only 2 items we have to contend with.**

**The issue is very complex and DOC have been most helpful in the past, but the matter is not altogether under DOC control.**

**Can you offer a concrete suggestion as to how this may be implemented with satisfaction to all parties concerned?**

**Bruce VK3UV**

114 Frederick Street, Launceston 7250

The Editor,

Dear Sir,

In addition to my letter of A.R. June-82 may I point out that the badge or logo is the symbol of the WIA. It is used on many occasions such as letterheads, QSL cards and many other applications. To use a different design in conjunction with

the original one is diametrically opposed to the original idea. The recent application form distributed by the WIA is a case in question. Is it absolutely necessary to have another design plus the extra cost of new dies — extra printing — one badge on this publication (Tasmanian QRM for August with the sole diamond displayed) another badge on another — and on another two badges. Unless action to drop the diamond is forthcoming — and given a little time, our true and faithful logo will be confined to the dust bin and become a part of history. The reply from Geoff Atkinson VK3YFA (A.R.-July-1982) is not sufficient reason for the change nor the reason contained in the WIA Book Vol 1.

If you want to split the organization this is one way of doing it. The adoption of a further logo will in no way compensate for the possible damage it can do to the WIA. And may I thank Chris Walker VK3DDX for his timely support as I was beginning to think I was a lone voice crying in the wilderness.

Yours faithfully  
Leslie Arnold VK7AM

562 Koorngal Road  
Wagga Wagga, 2650

The Editor,

Dear Sir,

I refer to the "Letter to Editor" published in August, 1982, issue of "Amateur Radio, in which Mr. T.P. Kelly (VK4NRE) opposes the extension of operating privileges to Novice operators and calls upon Federal Council to recommend a five-year tenure with re-examinations.

I point out that Mr. Kelly is quite entitled to hold opinions and to offer suggestions. However, I have had something to do with the Novice project and have no reason to offer complaint against Novices who, for reasons similar to Mr. Kelly's "personal reasons and ill-health" fail to up-grade to Limited or AOC status. One must remember that this is a LEISURE ACTIVITY and NOT a vocational situation. Also, I have been pleasantly surprised by the number of Novices who HAVE up-graded.

The "limited tenure" principle was suggested in the report submitted initially to Federal Council in the distant past when the Institute was involved in a "civil war" regarding the issue of "Novices or not". However, as our Committee extended its surveys and investigations, it was apparent that the majority of licensed AOC and Limited Amateur Operators did NOT favour a limited tenure, whereupon our Committee presented a Supplementary Report in which this attitude was expressed.

There are many retired and not-so-healthy Novices for whom this Amateur Radio activity is of real therapeutic value. There are others of limited ability to handle study at the levels required for AOC qualifications. Others have specific learning and educational problems, while family and business responsibilities inhibit the progress of others. In my opinion the Novice project was the best "shot in the arm" that the Amateur Service has had in decades.

I take issue with Mr. Kelly's statement that "This class was introduced to get "budding AOCs on air". One can well suspect that Novice class was approved by the Department in order to provide an alternative to the C.B. illegal operation during

the invasion of the 27 MHz Amateur Band, together with unlicensed and uncontrolled occupancy of spectrum areas allocated to other Services. The Amateur Service has gained a degree of extra membership from people who "got their feet wet" in C.B. — licensed or "pirate". However, now that C.B. is into a severe decline, this pool of potential Amateurs is drying up, so the Amateur Service should be examining alternative areas of recruitment. If Mr. Kelly's repressive notions take hold of WIA policy, then we are liable to place further obstacles in the expansion of the Amateur Service.

Yours faithfully,

Rex Black (VK2YA)  
Formerly Chairman of the Federal  
WIA Novice Investigation Committee

Box 342 Kalgoorlie 6430

The Editor,  
Dear Sir,

I am writing this letter for possible publication in AR for operators with computers and who enter contests. I worked the recent R.D. Contest to be able to test this programme under normal contest conditions with good results. The only problem I had, which was fortunate, was when my offside pulled the plug on the computer. The programme has a data dump routine in case something like this happens or in case of power failure. We loaded the data of callsigns back into the computer and ran a check with a result of a small problem in checking the 5 call area. 2½ hours later we had the programme operating correctly. In the first 12 hours before computer power failure we had a total of 9 VK5's duplicated owing to the programme fault, one VK3 and one VK4 due to operator typing errors. This was from a total amount of 420 contacts with a further 157 contacts with no more duplications.

The operation of the programme is for dupe checking only and still requires a pencil man to take times, number and any other information that is required for the particular contest.

The programme also, after every 20 contacts, puts the callsigns to tape in case of any failure.

My computer is a 'System 80'.

If anyone is interested, I will supply a printout of the programme if they can send a large stamped envelope to my QTHR or if required a blank tape with envelope.

Yours sincerely,  
D. Schneider VK6NHX

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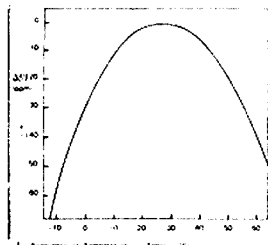
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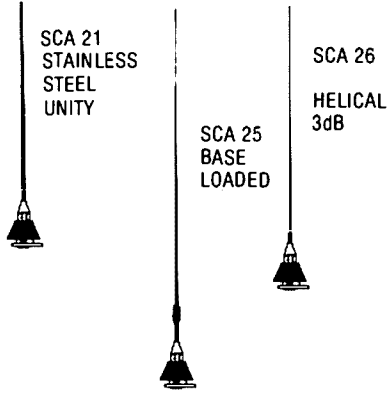
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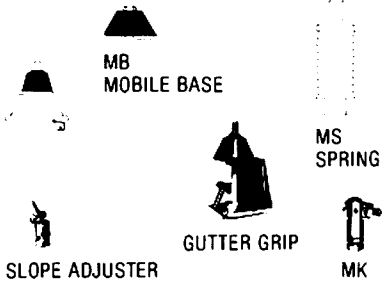
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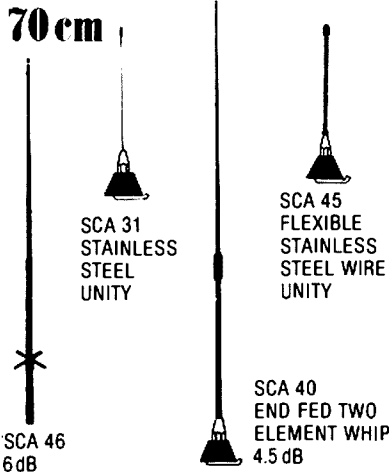
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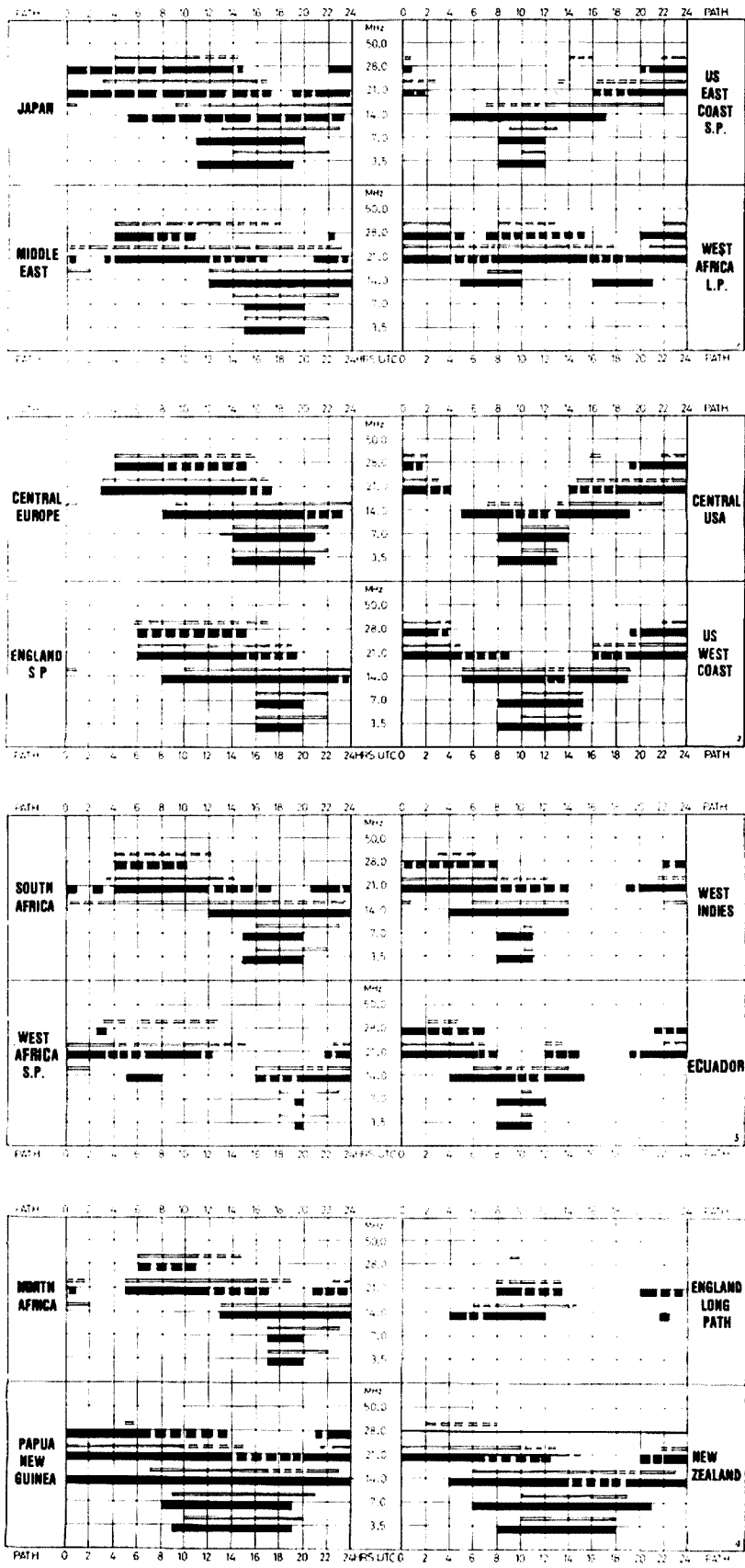


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# IONOSPHERIC PREDICTIONS

Len Poynter  
VK3BYE



## NATIONAL EMC ADVISORY SERVICE

The National EMC Advisory Service would like to remind all Amateurs of the importance of giving every consideration to the susceptibility factor of their receiving equipment before investigating or filing complaints regarding what appears to be commercial or non amateur signals within our bands.

Receiving equipment can, and quite often does, suffer from one or more of the following internal problems:— Spurious responses, Selectivity problems, intermodulation products, cross-modulation, and blocking.

If there is any doubt about your receiving equipment, try to borrow another receiver, preferably one with a known good immunity rating. Or, provide your existing equipment with a good front-end filter.

## Silent Keys

It is with deep regret we record the passing of—

|                    |                |
|--------------------|----------------|
| Mr. E. M. Bailey   | VK2BB          |
| Mr. M. J. G. Brims | ex XQA         |
| Mr. R. A. Jones    | VK3WL          |
| Mr. A. F. Marshall | VK4AF          |
| Mr. W. E. Pearson  | VK6BZ ex VK2LH |

## Obituaries

**EDGAR MERTON BAILEY. VK2BB**  
Eddie VK2BB passed away suddenly on 5th August at his home in Eungella. He was 59 years old.

He leaves a wife, two sons, Graham and Raymond and two grandchildren. Eddie served with the 2/1 Batt. A I F in New Guinea in WWII. I well remember Eddie, who became a very close friend, when we had our first Amateur Radio contact in December 1957. I visited him in 1958 on his family homestead at Eungella, where he was dairy farming and running a jersey studfarm. In later years he sold this property and took up radio as a profession, he worked as a service man for a firm in Murwillumbah however following a heart attack in 1977 he was forced to retire.

Eddie loved country life and was fond of animals, especially cattle and he was a keen member of the Agricultural Society and a member of the Murwillumbah Show Society committee, on which he served for a number of years.

He formed the high school radio club in Murwillumbah and was an instructor to the club and he also worked in a voluntary capacity at the Salvation Army Thrift shop as "Mr Fixit".

His funeral on August 10th was attended by a large congregation in the Uniting Church, Murwillumbah followed by a graveside service conducted by Rev. H. Sampson, Capt. K. Holland, and a member of the RSL and all spoke very highly of Eddie.

Eddie was a son-in-law of Charlie VK2AZK. He was a member of the W. I. A. since he obtained his call. On behalf of all amateurs I extend to his wife Phil, and all his family our deepest sympathy.

Frank VK4FN.

### MARCUS BRIMS .EX XQA

Marcus, who featured in a "thumb-nail sketch" in June "Amateur Radio", failed to survive an attack of 'flu in late July. He was 94 and when I spoke to him about a year ago he was, for his age active mentally and physically, although his memory was failing.

Marcus was always interested in new equipment and devices and the modern family plywood business reflects that interest. An example was a Ransoms electric truck which was in use during the first quarter of this century.

In the early days of Qantas the sheeting on the English 'planes such as De Havilland, failed rapidly and Brims supplied an acceptable substitute such that new 'planes had the sheeting replaced on arrival in Australia. This led to the manufacture of 'planes for some years by the firm.

Marcus is survived by a son John to whom we pass our sympathy. Hopefully one day we will see the 1914 amateur station of Marcus Brims re-erected in a permanent location.

Peter VK4PJ

### SYD DAHL VK4VT

On 25th July this year, at the age of 77, Syd Dahl VK4VT died in a North Queensland hospital, bringing to its close a full and fruitful life.

He was born near Palmerston North in New Zealand, and came to Australia as a child. Notwithstanding his Kiwi beginnings, he became in thought, language and lifestyle a "Truer Blue" Aussie than most who were born here.

Syd had a good education and became a qualified surveyor. He was a generous, intelligent man, with a perceptive appreciation of literature, history, poetry and what have come to be called the "finer things in life". Above all, he had a good sense of humour and an acid wit. He also had a direct and sometimes abrasive way of expressing his thoughts and feelings in the voice which earned him the nickname "Old Gravel". Underneath all this he was truly a rough diamond.

I first met him on air in 1967 as VK9KA Pt. Moresby where he was a surveyor in the employ of PNG government, as he had been for many years. On retirement he and his wife came to live at Innisfail N.Q., where he died about ten years later.

He was a stalwart for the WIA and its objectives, and most mornings was on the 14.150 VK3UE Net, where he stimulated some lively discussions.

His many friends, in and out of the Amateur world, will miss him deeply. I know I shall, for I am proud to have been a friend of Syd Dahl.

Doug VK4RP

### ARCH MARSHALL VK4AF

Born a son of the local village blacksmith, at Clifton, Q., on the 8th August, 1907, Arch Marshall lived most of his life there, and passed away on 22nd May, 1982, in the Clifton Hospital, a short distance from his old home and birthplace.

Early in life his interests turned to the intriguing hobby of radio, and it was not long after his secondary schooling at the Warwick Technical College he was awarded an A.O.C.P. — dated 25th. Sept. 1928. Whilst resident, and in conjunction with a few fellow Amateurs over the years, he activated Clifton radio-wise till only a few short days before his death. His last QSO was on 2 metre, simplex, to tell me he was "feeling pretty ill" with his attack of the prevailing 'flu, on 18/5/82. Later he rang to say he was being "bulldozed" into hospital — by four ladies (relatives) and the Dr. Arch had a very independent nature! Three days in hospital saw him improving as regards the 'flu, but in the early hours of Sat. 22nd., the heart gave up the struggle before the body, and Arch peacefully answered the roll-call for Silent Keys.

He remained a single man through life, a quiet unassuming man, happy with his lot in life, but always a conscientious, capable and respected workman at all his tasks. His trade involved carrying on the blacksmithing, engineering and fitting-and-turning business as partner with his brother. His army life was spent as an instrument-maker. Rifle shooting and fishing shared his hobbies with radio. I know, too, over the last few years how much he enjoyed sharing our day trips to the Australian bush — for a little prospecting, or maybe just for the scent of wattle blossom and perfume of burning gum leaves as we boiled the billy! On radio, Arch qualified easily as a model and example of an operator befitting our code of ethics.

His first contact I find recorded, without frequency used, was a reply to a CQ on 21/7/29 by VK2JZ, report Q4 R5, the input power for the CQ was 1.08 watts. On 29/7/29 the power had dropped to .75 watts (maybe the dry cells were going flat)! First contact on 20 metres recorded on 15/2/30, to quote "Sat. night after the pictures" 10.45 pm with VK3JK, report Q4, followed by VK7DX, at Q3 R5 — with an improved input power of 1.8 watts!

Appreciation is expressed by the Darling Downs Radio Club for receipt of his radio equipment, which Arch bequeathed to the Club. In due course, hopefully before year's end, proceeds from this will help finance a new 2 metre Repeater for VK4RDD, to be dedicated to our late member — VK4AF.

To all his relatives we extend our condolences — Amateur Radio shares the sorrow, and the loss, with them.

Jim VK4QC

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## HAMADS

**PLEASE NOTE:** If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.

- Eight lines free to all WIA members.
- \$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA current Call Book.

### TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is \$15 for 4 lines, plus \$2 per line (or part thereof) minimum charge \$15 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

**AmMec Ferrromagnetic Cores:** Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R.J. & U.S. Imports, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken St., Oakley, 2223).

**CB Radio** \$69; walkie talkies, short wave radios, military, outback, business, amateur, marine, repairs, RTTY Siemens 100A printer \$120; base mic, \$45; ultrasonic alarm, \$35; all ham bands on a single 6 ft. whip 1.8 to 30 MHz, for base or mobile, \$300; aerials, installation, demonstrations, 40 ch. CB conversions, accessories, new rigs weekly. Bridge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW. Mail order service and all enquiries to 2 Griffith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066.

**IEEE 606 (\$100)** 64K memory cards by Static Memory Systems. Use 2Kx8 RAMs or 2716 EPROMs. Kit less RAM \$178, A & T less RAM \$201. Also Gdoutbox cards and a large range of CPM software. Bits and Bauds. 25 Lotus Cres., Mulgrave. 3170. Phone: (03) 546 4830.

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### WANTED — QLD.

**ICOM 720A** Contact VK4PL QTHR or phone (07) 358 4884.

### FOR SALE — ACT

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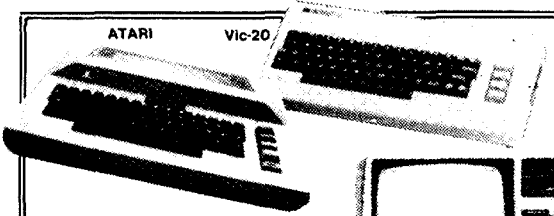
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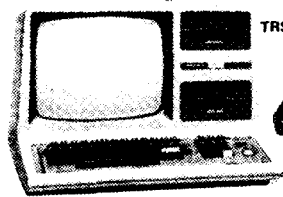


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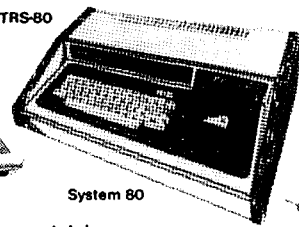
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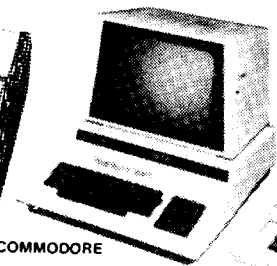
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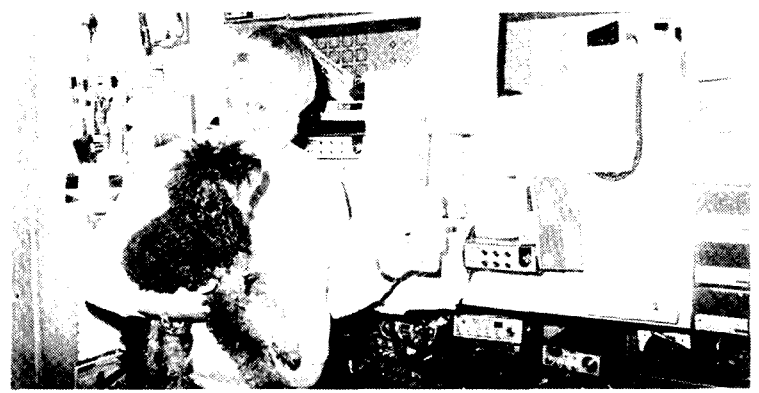
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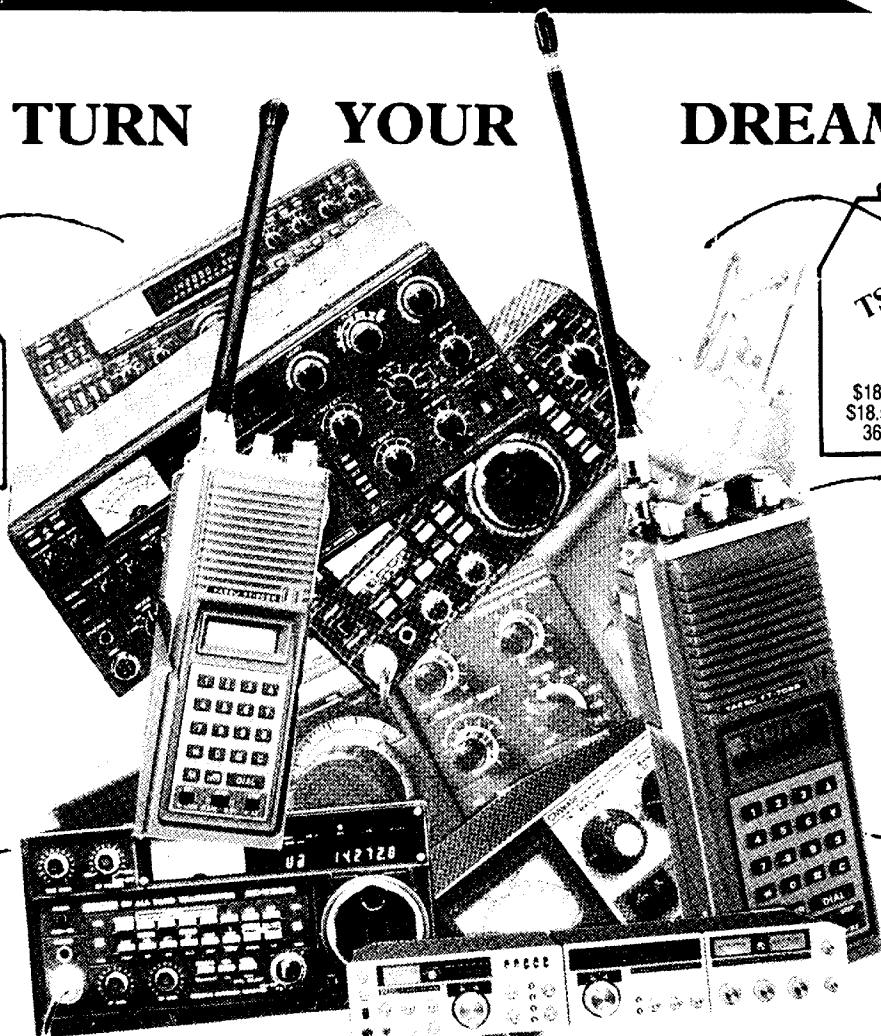
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# Amateur Radio

VOL. 50, No. 11 NOVEMBER 1982

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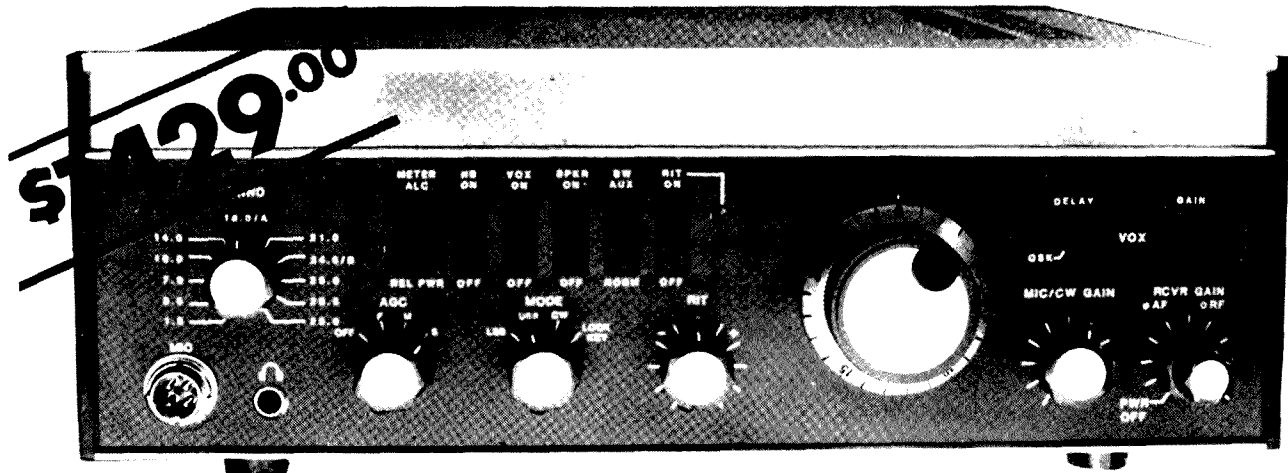


*This month's features include:*

- ★ **JOTA 1982 in WA**
- ★ **Crystal Ladder Filters**
- ★ **Thermal Soaring**
- ★ **RD Contest — Opening Speech**
- ★ **Reviews — AARON Oscilloscope FT 230 R**

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# amateur radio

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on the cover



Rear (L to R): Ian Gordon, Jill VK6YL/VK6SO. Front (L to R): Joanne Stamp, Bradley Stamp, Mandy Weaver, Tiffany Gunn, Fiona Gordon enjoying JOTA '82 in Jill's shack.

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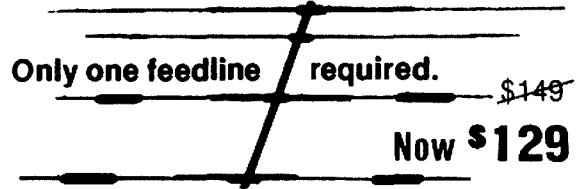
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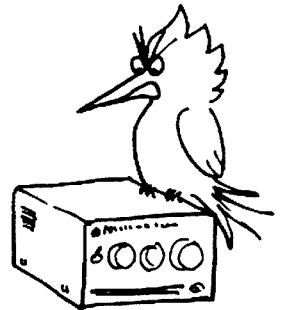
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## NICHOLLS COMMUNICATIONS

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And it's a leadership we've worked hard to achieve. But because Vicom was established by Amateurs for Amateurs, we think we've had a head start. Because we understand what you need and what you want even before you know it's available.

Our product range is as extensive as it is innovative. With names like Icom, Daiwa and Tono.

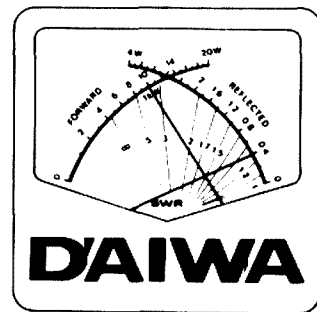


They're the market leaders in all aspects of Amateur radio from the state-of-the-art base station to technically innovative accessories like the Daiwa cross-needle meters and rotators that make your job that much easier. Plus the latest in Tono computer technology combined with their RTTY equipment, which makes your station more like a space station.

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W01102

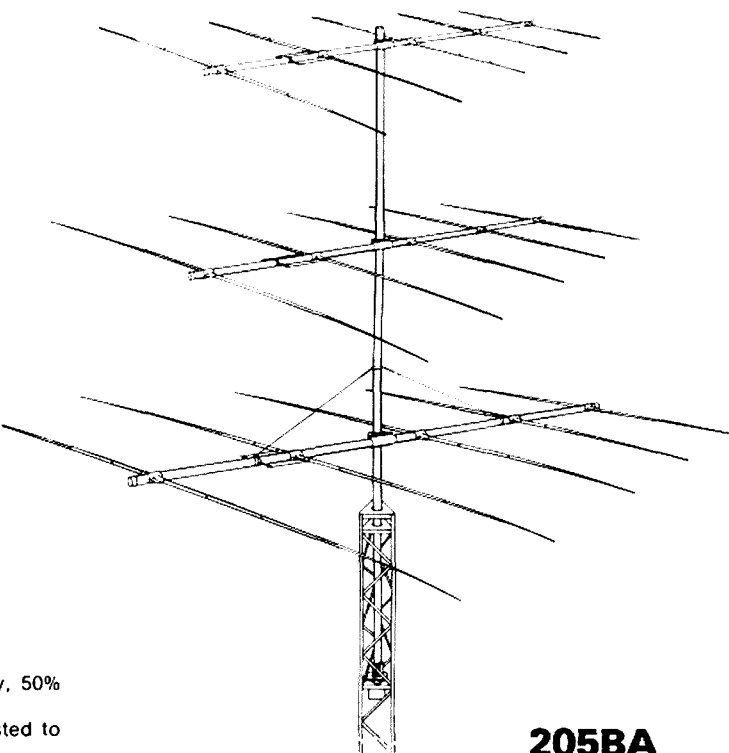
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Most HAMS would prefer Hygain to any other brand antenna, until now price has placed them out of reach of most people. Now Audio Telex Communications are joining with Hygain in making this direct offer on the entire range of Hygain antennas.

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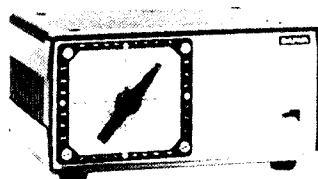
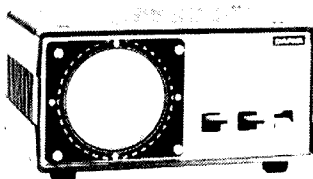
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## ANTENNA ROTATORS

Round controller with world map indicator. **DR7500R, DR7600R.**



Pre-set controller. **DR7500X, DR7600X.**

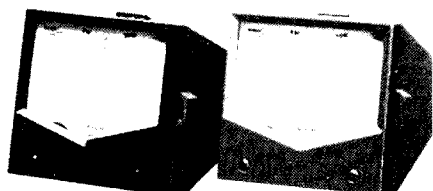
Set your antenna with a choice of Daiwa Heavy Duty and Medium Duty Rotators. They'll get you going in the right direction. Type X allows you to pre-set the call area you want and Type R comes with Paddle Switch Control and world map display.

**DR7500R** Daiwa Ant. Rotator, Medium Duty. **DR7500X** Daiwa Ant. Rotator, Medium Duty, Pre-set. **DR7600R** Daiwa Ant. Rotator, Heavy Duty. **DR7600X** Daiwa Ant. Rotator, Heavy Duty, Pre-set.

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Hands-off operation.

The famous cross-needle meter provides three measurements at the push of one PTT button. And their compact size means they fit into even the most crowded shack. There's a compact cross-needle meter to suit almost any need - choose the one that suits you.



CN510

CN520

**CN510** 1.8-60MHz. 200W/2kW. **CN520** 1.8-60MHz. 20W/200W. **CN540** 50-150MHz. 20W/200W. **CN550** 144-250MHz. 20W/200W. **CN620A** 1.8-150MHz. 20W/200W/1000W. **CN630/CN630N** 140-450MHz. 20W/200W. **CN650** 1.2-2.5GHz. 2W/20W. **CN720** 1.8-150MHz. 20W/200W/1kW.

## ANTENNA TUNERS

**AUTOMATIC** The **CNA1001** and the **CNA2002** are two of the most advanced antenna tuners on the market.

Both provide the convenience and accuracy of automatic tuning at the push of a button! The **CNA2002** is rated at 2.5kW PEP while the **CNA1001** is rated at 500 watts PEP. Both units auto tune within all HF bands 3.5-30MHz, including the new WARC bands. Both units incorporate the unique Daiwa cross-needle meter to indicate SWR and Power. A built-in dummy load is also included for preliminary tuning. **CNA1001** Daiwa Automatic Tuner 200W. **CNA2002** Daiwa Automatic Antenna Tuner 2.5kW.

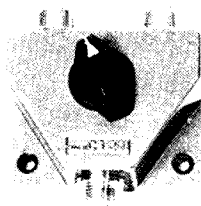
**MANUAL** Daiwa has a superb range of Manual Antenna Tuners to ensure your station operates efficiently by getting maximum power to your antenna system. Rugged design and ease of operation make these tuners a must for any amateur station! **CNW518** Daiwa Manual Antenna Tuner 3.5-50MHz (including WARC). **CN418** Daiwa Manual Antenna Tuner 3.5-30MHz. **CNW218** Daiwa Manual Antenna Tuner 3.5-30MHz.



Daiwa CNA2002

## COAXIAL SWITCHES

You get low-loss and good isolation with Daiwa's professional quality coaxial switches. They all complement Vicom's own unbeatable relays and operate from HF to 70cm. **CS201** Daiwa Coaxial Switch, 2 Pos. **CS201N** Daiwa Coaxial Switch, 2 Pos "N" type. **CS401** Daiwa Coaxial Switch, 4 Pos.



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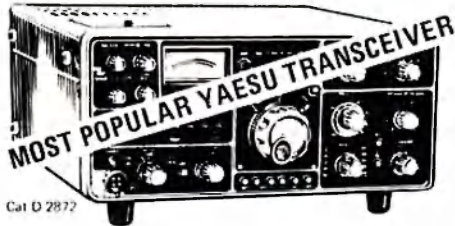
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**I MUST CLEAR THIS STOCK BEFORE XMAS - NEW PRODUCTS COMING - YOU REAP THE BENEFIT!**



## FT101Z FM



Cat D-2872

### SPECIFICATIONS

Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 and 10m. Modes of operation: FM, LSB, USB, CW, AM, Input Power: 180W DC (SSB, CW), 50W DC (AM), Sensitivity: 0.25uV for 10dB S/N (SSB, CW), 0.4uV (AM), Selectivity: 2.4kHz (6dB), 4.0kHz (-60dB), Carrier Suppression better than 40dB, Spurious Radiation: better than 40dB below rated output, Operating Voltage: 100-240V AC (1.3 5V with optional conv.). Antenna output impedance: 50-75 ohms unbalanced

## 902 SERIES

### FT902D

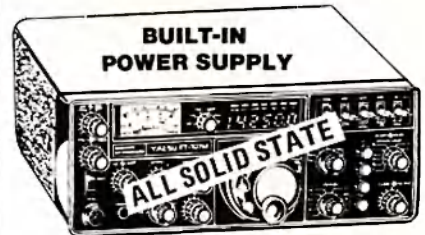


Cat. D-2853

### SPECIFICATIONS

Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 & 10m. Modes of operation: LSB, USB, AM, CW, FSK, FM. Input Power: 180W (SSB), 180W DC (CW), 80W DC (AM). Sensitivity: (0.25uV for 10dB S/N (SSB)) Selectivity: 2.4kHz (6dB), 4kHz (60dB), SSB. Carrier suppression: better than 40dB. Spurious radiation: better than 40dB below rated output. Power requirements: 240V (1.3 5V with optional conv.). Antenna output impedance: 50-75 ohms unbal.

## FT107 SERIES



### FT107M/DMS

### SPECIFICATIONS

Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 & 10. Modes of operation: LSB, USB, CW, AM, FSK. Input Power: 240W DC (SSB), 80W DC (AM, FSK). Sensitivity: 0.25uV for 10dB S/N (SSB, CW, FSK), 1uV (AM). Selectivity: 2.4kHz (6dB), 4kHz / 60dB SSB cont. variable from 200 to 2400 Hz. Carrier suppressor: Better than 40dB. Spurious radiation: better than 50dB below rated output. Power requirements: 240V & 13.5V supplies are built in. Antenna output impedance: 50 ohms unbal.

~~\$885~~

**\$825**

~~\$1195~~

**\$950**

### DC-DC INVERTER

Want to go mobile? Add this superb DC-DC inverter to your 101Z and run it from your car battery (13.5V nominal). Don't tie yourself to your shack and the 240 volts mains, get out to where the air is clean (and the DX is great)! Cat. D-2864

~~\$77~~ **\$55**

### DC POWER CABLE ONLY \$5.00!

with the purchase of the above inverter (Cat. D-2864)

(Usually \$22.00!)

### DIGITAL DISPLAY (Optional)

Want a digital display but you can't afford it? Buy the FT-101Z, then later on when you can afford it, buy the digital display and fix it yourself. It's so easy! Cat. D-2861

~~\$142.50~~

**\$99**

### ABOVE DISPLAY ONLY \$10!!!

if purchased with FT101Z FM (Cat. D-2872) or FT101Z (Cat. D-2862)

## ANTENNA COUPLER



**500 WATTS**  
FC902

Cat D-2855

This coupler can feed anything from a random length of wire to a beam. Match the load perfectly so you can deliver more power up there where it's wanted! Suits all bands, has built-in SWR/power meter as well. 50 or 75 ohm system. 500 watt rating

~~\$265~~

**\$195**

### MEMORY UNIT

You can get even more use and pleasure from your 902 with the optional memory unit. Instant recall of often used frequencies, repeaters, etc. Cat. D-2858

~~\$139.50~~

**\$99**

### DC/DC INVERTER

Go mobile... with the FC902 12 volts inverter. Simple connection, gives 'base station' performance from your car. Cat. D-2856

~~\$69~~ **\$49**

## FT901D

Cat. D-2854

### SPECIFICATIONS

Frequency coverage: 160, 80, 40, 20, 15, 10m. Input Power: 180W (SSB), 180W DC (CW), 80W DC (AM). Sensitivity: (0.25uV for 10dB S/N (SSB)) Power requirements: 240V

~~\$1075~~

**\$875**

## FT101Z

HF - WARC - TX  
Cat. D-2862

~~\$849~~ **\$749**

## FT101ZD

HF - WARC - TX WITH DIGITAL READOUT  
Cat. D-2859

~~\$910~~ **\$795**

## XTAL FILTER SPECIAL

901/902 - 107 - 707 - 101Z Series  
CWN (SD0418), CW (SD0417),  
AM (SD0416)

~~\$33~~

**\$24 ea**

~~\$1328~~ **\$999**



**Antenna Coupler FC107**

No problems with antenna mis match on your FT-107 - not with this superb coupler. Designed to match the styling of the FT-107, but also just at home with any transceiver. Huge meters for power output & SWR. Cat. D-2873

~~\$205~~ **\$185**



TH3JR offers top performance on 10, 15 and 20 metres. The TH3JR has an SWR of less than 1.5:1 at resonance. Cat. D-4304

**YOU WON'T BELIEVE THESE PRICES!!!**



# 2 METRE BARGAINS!

**FT-480R** Yaesu's top 2 metre rig: FM, CW & SSB!



~~\$589~~ **\$445**

Yaesu call this their 'total performance VHF computerized transceiver'. And total performance it is! As the top of the line Yaesu 2 metre family, you'd expect a lot. You get it: FM, SSB & CW over the full 2 metre band, with two VFO's which may be used for unusual repeater splits, four memory channels, scanning, 100Hz resolution on the digital frequency readout, a 'SAT' switch to make satellite operation easy (with an external receiver), a receive blanker, a hi/lo power switch (30W PEP max), an effective noise blanker, tone burst, priority channels, optical selector coupling. If you want the best, you want Yaesu. If you want the best 2 metre Yaesu, you want the FT-480R! As they say: Magnifique! Cat D-2887

**FT-227RB**



~~\$379~~ **\$299**

One of the most popular Yaesu transceivers we have ever had the pleasure to operate the incredible FT-227R. A PLL scanner will take you anywhere within the 2 metre band instantly — just press the scan button on the microphone. No need to worry about reaching for a selector switch in heavy traffic! And you have four memory channels to choose from, with a 600kHz repeater split for working standard repeaters, or up to a 4MHz split for unusual repeaters or requirements. Power output is ten watts, and the receiver has better than 0.3uV sensitivity (10dB S/N). It operates 13.5V DC, with protection against reverse polarity and high antenna SWR. For value-for-money, it's hard to go past the FT-227RB. Cat D-2891

**FT-207R**



~~\$358~~ **\$235**

with 10kHz steps  
PRICE INCLUDES NICAD BATTERY PACK AND CHARGER (Cat. M-9517)

Imagine a hand-held 2 metre transceiver with all the punch of the big guns — with digital display, 800 channels, 4-bit CPU chip for frequency control, 4 memory channels, repeater splits, auto scan (up or down), weighing just 680g. You're imagining the unbelievable Yaesu FT-207R! How does it perform? How about 0.32uV sensitivity, or 7.5kHz selectivity (-60dB) or a power output of 2.5W (nom). If you've always wanted a 2 metre rig you can throw into a bag to take on holidays, this is it! But a word of warning: don't pick one of these up. You may never want to put it down again! Cat D-2888

**FT-720RVH**



~~\$450~~ **\$345**

Yaesu brings you the flexibility and performance you need in today's amateur world. The FT-720RVH not only gives you top performance, it's also the most flexible Yaesu. It comes apart — so you can locate the microprocessor-controlled 'works close by' you, with the RF end out of the way. Or, just as easily, snap the two sections back together again for a complete transceiver. That's versatility! But nothing is spared in performance. PLL circuitry for maximum stability, scanning, five memory channels, LED P.O/S meter, 25 W output, and full 14c-148MHz operation. A superb transceiver, designed specifically for today's small cars, who simply don't have much room to spare! Cat D-2890

## FT707 SERIES



**WARC**

What a performer packed into such a tiny package! The FT707 is one of our fastest sellers, and no wonder. It's a full power all HF band (including WARC) multi-mode transceiver not much bigger than an average 2 metre mobile! And you get digital display as well, LED S/power meter, push button operation ... all the things the amateur needs for safe and yet reliable mobile operation. But it's more than that: team it up with a FP-707 supply below and it's a superb base station, too. We've waited a long time for a rig like this. Yaesu brought it to you, of course! Cat D-2889

**SPECIFICATIONS**  
Frequency coverage: 80, 40, 30, 20, 17, 15, 12 & 10m  
Modes of operation: AM, USB, LSB & CW  
Power input: 240V DC SSB, 80W AM\*  
Sensitivity: 0.25uV for 10dB S/N (SSB); 1uV for 10dB (AM)  
Selectivity: 2.4kHz (6dB), 4kHz (160dB) SSB; 3.6kHz (6dB) 6.8kHz (160dB) AM  
Image rejection: 60dB (80-12m), 50dB (10m)  
Carrier suppression: better than 40dB  
Spurious emissions: at least 50dB down  
Power requirements: 13.5V DC @ 20A (240V AC with FP-707)  
Antenna impedance: 50 ohms

~~\$795~~ **\$765**

## ANTENNA COUPLER



Get the most from your FT 707: use the Yaesu FC-707 antenna coupler and ensure your transceiver always delivers the power it should. Slim styling suits the FT-707 style, with all the features you need: large power/SWR meter, inbuilt dummy load, all band coverage (including WARC), less than 0.5dB insertion loss (you more than make up for that because of a better match!) Cat D-2875

~~\$157.50~~ **\$139**

## POWER SUPPLY (and external speaker)

The FT707 is a great mobile rig — but it's just as good as a base station. Just add the FP-707 mains power supply and you're away. You get a fully regulated 13.5V at 20A — just what your FT-707 needs. Plug in connections so you can't cause problems plus you get an extra large speaker — for greater clarity.

**GREAT VALUE** ~~\$32~~ **\$175**

## MMB8

Makes mobile mounting of the FT480 a breeze. Why put up with a jury rig when you can get the correct mount at this price? SD1335

~~\$21~~ **\$10**  
**SAVE \$11**

## FREE! MMB5 MOUNTING BRACKET

Yes — absolutely free with the purchase of the FT227RB SD1267

## PA 2 MOBILE CHARGER

Run your FT207 while mobile — includes 10.8V supply with in special holding cradle.

~~\$15.95~~ **\$15** Cat. D-2894  
**BELOW COST SPECIAL**

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When you purchase an FT720RVH The E72L allows you to split the 720 in two: great for compact installation! SD2120. WORTH \$22.00!!!

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## FL2050 2 metre LINEAR AMP



**SPECIFICATIONS**  
Frequency range: 143.5 MHz - 148.5 MHz  
Mode: A1, A3J, A3, F3  
Input impedance: 50 ohms unbalanced  
Output impedance: 50 ohms unbalanced  
Power output: 70 W

~~\$239~~ **\$189**

## SPECIAL OFFER! FT-207R & PA2 FOR AN AMAZING

**\$246.50**

## MMB3 GREAT VALUE!

Mobile Mounting Bracket for FT720 RVH SD2119  
~~\$26~~ **\$10.20**

**IMPORTANT NOTE!**  
These prices will never be repeated and stock is limited. If you cannot obtain any item, ring Jim Powell in Sydney for help. (02) 888 3200

## MOBILE BRACKET

Don't let your valuable 707 jump around the car. Fit it in a mobile mounting bracket for safety and security. Also holds the digital VFO. A must for the serious mobile operator. Cat D-2897

~~\$26~~ **\$22.95**

## DIGITAL VFO



Cat D-2896

Long n Slim — intended to sit under the 707. 12 memories, up/down scanning in 10Hz steps and receiver offset tuning. Powered by FT-707

~~\$299.50~~ **\$245**

## MR7 RACK FOR FT707



SD1019  
~~\$32~~ **\$26**

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# a word from your EDITOR



Printed in our DX notes is a current report on the "VK6 DX Chasers Club" expedition to Heard Island.

Of course we have heard rumours of the possibility of a second and separate expedition to Heard Island.

This is the "Heard Island DX Association" (HIDXA) led by Jim Smith, VK9NS from Norfolk Island.

Until recently we believed no serious plans had been made; however over the past few weeks Jim Smith VK9NS has told us that he has now been able to arrange a definite departure for Heard Island.

He tells us:

1. The whale chaser "Cheymes II" has been booked to leave Hobart on 1st January 1983.
2. Official permission from the Australian Government has been given for the HIDXA group to land on Heard Island for a period of no less than 14 days, but not exceeding 30 days.
3. The expedition will consist of 18 members, comprising eight amateur radio operators and 10 scientific investigators.
4. Operation will be on all bands through to 6 metres using CW, SSB, RTTY and SSTV.
5. Call-signs to be used will be VK0JS and VK0NL.
6. A large amount of funding and donations of equipment and supplies has been made available from various groups and personal contribution of the expedition members themselves. The expedition still requires support from amateurs, and donations may be sent to: HIDXA P.O. Box 90, Norfolk Island, South Pacific 2899.

Some people have mistakenly believed that the Wireless Institute of Australia (WIA) has underwritten the VK6 DX Chasers Club Heard Island expedition. This is not the fact. No WIA Federal funds have been advanced or promised for this expedition or any other expedition.

The Federal Executive of the WIA believed that it was proper to encourage this expedition, and it has done so through the pages of AR.

Naturally the WIA is anxious to see that all expeditions do not become the subject of criticism. QSL's are an important aspect.

Thus there is now the extraordinary possibility of two groups of amateurs operating at the same time from this much sought after DX country.

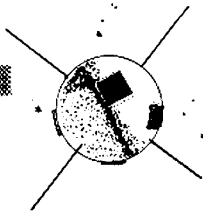
It is hard to believe that an amateur operating from Heard Island may have to face problems of local QRM. They may well need the same tolerance of each other as amateurs operating in a suburban area.

Only two months now remain before the expeditions set sail, and there is still a lot more work to be done and final preparations are yet to be made.

We wish both groups success and a safe return.

Information will continue to be published in AR as it comes to hand.

Bruce R Bathols VK3UV  
Editor



# QSP

## BEYOND 2000?

I recently caught part of "Towards 2000" — the ABC television programme which featured satellite research and the development of "killer" satellites — most enlightening to say the least!

Satellites have certainly revolutionised man's ability to communicate and the future holds much more.

However, the possibility, that the "basket" containing all the eggs, being destroyed is an awesome thought, especially in the case of societies or countries with access to only a limited number of communication satellite systems.

Towards 2000 left little doubt that there are at present many great minds already hard at work developing the so called killer satellite.

To date, little mention has been made of the possibility of jamming communication satellites. Even given the myriad of so-called safeguards, it will surely happen — just as some of the major political powers purposely jam each other's short-wave broadcast outlets. A futile exercise. And yet those same broadcasters demand more and more spectrum!

Most amateurs have experienced wilful VHF repeater jamming practices whereby a suitably located transmitter can render a repeater useless. Perhaps the day will come when similar actions are perpetrated at much higher levels, i.e. by governments and thereby render great sections of a country's communications network inoperative — perhaps even with a view to immobilising its defence communications.

With all this in mind, the HF spectrum may not be the "cast off" that so many were earlier predicting. To be able to use relatively simple independent and portable equipment, to reliably communicate over medium distances such as across a country's boundaries, or indeed across a continent, would not have gone unnoticed by defence planners amongst others who require the maximum reliability for communications networks.

With WCY-83 and its theme "development of communications, infrastructures" just around the corner we should be even more diligent in our approach to the preservation of our amateur bands.

As always we should "use them or lose them."

Peter Wolfenden VK3KAU  
Federal President WIA. AR

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OSCILLOSCOPES

PEARCE SIMPSON

MARKO

PRESIDENT



# WIA NEWS

The information in the letter reproduced is the result of negotiations between the WIA and DOC.



## DEPARTMENT OF COMMUNICATIONS

TELEPHONE: (03) 609 1555

TELEX: SECPAT 30148

ENQUIRIES

GPO BOX 5412CC

MELBOURNE, VIC. 3001

REFERENCE:

- 6 OCT 1982

Mr. P. Wolfenden  
Federal President  
Wireless Institute of Australia  
P O Box 180  
TOORAK VIC 3142

Dear Sir,

As a result of the recent negotiations between representatives of the Institute and Departmental officers, I am pleased to confirm the following revised examination exemption provisions:

- Examination pass credits will be retained for two years.
- Licensed amateurs who are candidates for higher sections will retain examination credits (including Telegraphy, Sections LS and LR) indefinitely.
- A previously unlicensed person, who obtains a licence during the validity of a pass, will continue to retain that credit indefinitely.

The new exemption provisions take effect immediately. They will also apply to those candidates who have recently contested examinations, subject to the following conditions:

- Candidates who gained passes within the last two years, upon application, will be credited with an exemption for two years from the date the pass was obtained in a particular subject.
- Novice and Limited (or Combined) amateurs who were candidates for higher sections, upon application, will also be credited with those passes obtained within the last two years. These credits will be retained permanently.

It would be appreciated, please, if you could arrange for these new provisions to be publicised through the Institute's usual channels as soon as is practicable.

Yours faithfully,

for Secretary.

**NOTE:**

*The onus is on all candidates in past examinations to apply to their State DOC office for credited exemptions.*

*Peter Wolfenden, VK3KAU  
Federal President*

# JAMBOREE ON THE AIR 1982

Gillian Weaver VK6YL  
23 Corbel Street, Shelley 6155

During the weekend 16th and 17th October 1982, the Amateur Radio bands came alive with young voices excitedly talking to other Guides, Brownies, Scouts and Cubs throughout the world to celebrate the 75th Anniversary of Scouting, the 25th Anniversary of JOTA and the 125th Anniversary of the birth of Lord Robert Baden Powell of Gilwell (affectionately known to us all as "BP").

On the regular official VK6 Broadcast on Saturday night, the Chief Scout for Western Australia, His Excellency Sir Richard Trowbridge, Governor for Western Australia gave the address passing greetings to all members of the Scouting and Guiding Movement and to the amateurs taking part. This was the first time His Excellency has graced us with his presence and it was to mark the quarter century of JOTA. The amateurs of course were particularly proud because he is also the Patron of the Wireless Institute of Australia, Western Australia Division. The Governor was most interested in the call-backs coming from all over our vast State.

Official figures are not yet to hand but it appeared there were in the order of 100 participating amateur stations in VK6 alone with around 140 amateurs operating. These amateurs played host to over 2500 uniformed members of the Movements with a large number of visitors who were also introduced to amateur radio. Participation cards for the amateurs will be distributed by the Assistant Branch Commissioner for Scout Radio, Peter Hughes VK6HU, with thanks from the various

Scout and Guide units who enjoyed their company.

VK6SAA, the Official Scout Station, operated for the first time in the State Headquarters Building in the centre of Perth with wire antennae in the roof (to avoid TV!!!!). Another first was the Official Girl Guide Station VK6GGA which operated from Paxwold in the Helena Valley, where 432 MHz Foxhunts were run much to the delight of the girls. Numbers of groups were in District Camps for the weekend with the young people combining amateur radio with other skills — for example Pioneering — building towers for aeriels etc.

During this and the previous JOTA's many memorable events happened . . .

In the country the Cuballing Girl Guides visiting Malcolm VK6XM had a most unusual guest to the shack — a five foot long carpet snake! On the International Scouting Scene overseas stations, who take the trouble to explain their customs and geography, play a wonderful part because of the isolation of VK in the world. Stations like ZE1JAM in Zimbabwe at the site of BP's great military exploits and

Frank VK9NYG together with Mike VK9ZYX who explained the fascinating wonders of Utopia, Cocos Keeling Islands. New pen pals from all over the world have grown through JOTA. These leave lasting effects on the participants especially when memorabilia is exchanged from parts of the world basically unknown to us.

In 1979/80 Perth played host to the 4th Asia-Pacific, 12th Australian Jamboree to which 11,000 Scouts from all over the world attended together with 2500 helpers. During the 10 days the WIA WA Division assisted the Scout Movement to mount the largest-ever amateur radio exercise in VK. This comprised three HF stations, two VHF stations, 1 RTTY station, 2 Workshops and a Broadcast Station 6SJ on 1610 kHz, also the first-ever licensed TV station on UHF was launched in Western Australia.

Over the years Jamboree on the Air has meant the union of the young Scouts and Guides and amateur radio. The youth enhance their communication skills and of course it is from their ranks that the amateurs of tomorrow will come.

## SUBS RATES AND JOINING FEES 1983

|                                                                                                  | ACT | NSW | VIC | QLD | SA | WA | TAS  |
|--------------------------------------------------------------------------------------------------|-----|-----|-----|-----|----|----|------|
|                                                                                                  | \$  | \$  | \$  | \$  | \$ | \$ | \$   |
| Bona Fide Student                                                                                | 21  | 22  | 20  | 11  | 18 | 19 | 9.75 |
| Pensioner                                                                                        | 22  | 22  | 22  | 22  | 24 | 24 | 20   |
| Ass. Member<br>(No Callsign)                                                                     |     |     |     |     |    |    |      |
| Met                                                                                              | 30  | 27  | 28  | 27  | 32 | 29 | 28.5 |
| Country                                                                                          | 30  | 27  | 28  | 27  | 30 | 29 | 28.5 |
| Full Member                                                                                      |     |     |     |     |    |    |      |
| Met.                                                                                             | 30  | 29  | 32  | 27  | 34 | 30 | 28.5 |
| Country                                                                                          | 30  | 29  | 32  | 27  | 32 | 30 | 28.5 |
| Plus Joining Fee                                                                                 | —   | 3   | —   | 3   | —  | —  | 1    |
| Family Member (e.g. wife) without AR — deduct 12.15 from appropriate full or ass. rate, except:— |     |     |     |     |    |    |      |
| ACT — 18, VIC — 15, QLD — 11, SA — 17.                                                           |     |     |     |     |    |    |      |

## WARNING!!



Disposing of your old rig??

Please ensure it goes **ONLY** to someone licensed to use it on **YOUR** bands.

# Single Frequency Crystal Ladder Filters

Rob Gurr VK5RG  
PO Box 35, Daw Park 5041

The abovementioned filters have been around for years in various applications, however it was not until 1976 that anything of a practical amateur nature was mentioned in any amateur publications. Then Pat Hawker Q3VA wrote in his Technical Topics column of Radio Communications, September 1976, page 672, of experiments conducted and practical results achieved by F6BQP. The attraction was that with all of three or four crystals, ON THE SAME FREQUENCY, single side band filters comparable to manufactured types could be fabricated in the amateur station.

The main claim was the extremely low out-of-band spurious responses. G3VA was later followed up by impressive articles by G3JIR, then later by an English translation of the article by F6BQP.

One feature of the literature was the almost predictable bandwidth and pass-band ripple associated with this type of filter. Armed with a copy of the respective articles, a supply of crystals of various cuts and holders, and some elementary test equipment, I endeavoured to duplicate some of the successes obtained by other authors. The results were very pleasing and are recorded for information of those interested in duplicating such filters.

A good source of crystals, all on the same frequency, in the 8, 9 or 10 MHz range may appear difficult at first, however any old CB transceiver or 27 MHz hand phone service organisation should be able to assist.

The author can obtain, on request, brand new style 27 MHz crystals at \$12 for a set of 10, allowing two filters, complete with carrier crystals for USB and LSB to be constructed. In addition, Air Force disposals crystals in the B holder can be supplied at \$4 a set of 10, all on the same frequency, in the 6, 7 or 8 MHz bands.

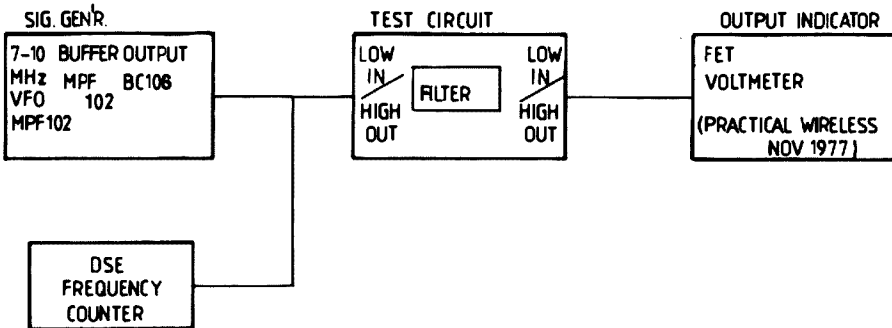
The tests indicated the difference between a three section or four section filter using style K was marginal, however the B style (disposal) showed a definite lower side band preference in the three crystal configuration. This was not greatly improved with a four crystal set-up.

## TEST EQUIPMENT

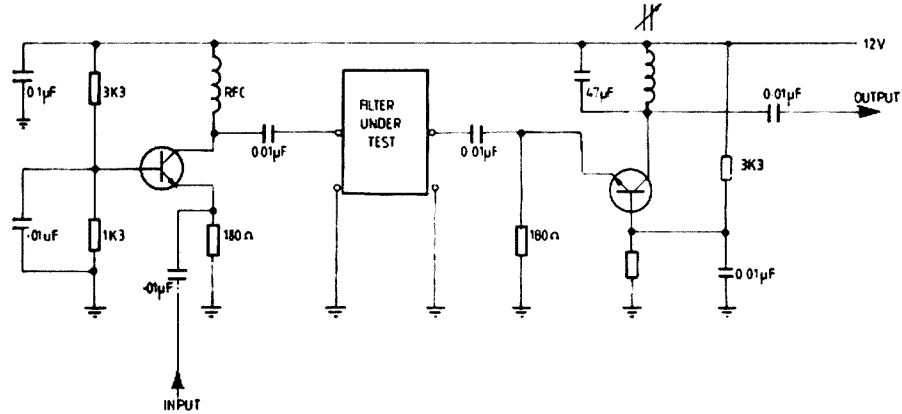
Access to elaborate test equipment is possible to some of us, however the set-up used in my tests could be duplicated by any experimenter with little trouble.

The layout is as follows:—

### (a) SIGNAL GENERATOR



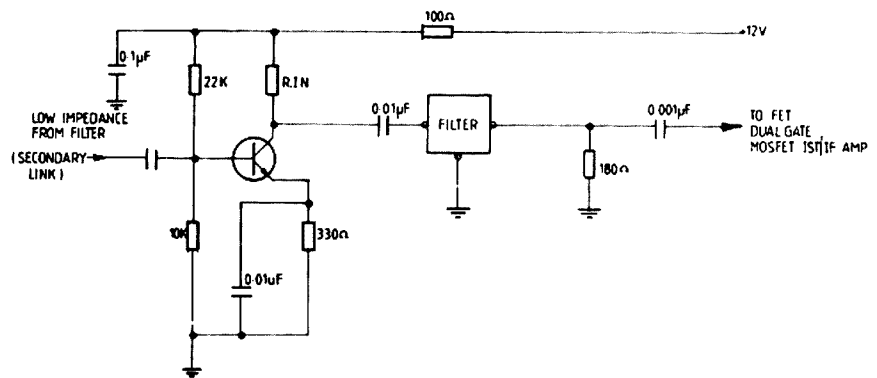
### (b) TEST CIRCUIT



The test circuit was laid out on an 8 in. x 3 in. slab of double-sided printed circuit board — coupling between parts was negligible, and allowed measurements down to -42 dB without difficulty.

### FINAL PRACTICAL CIRCUIT

Very few modern transceivers or receivers do not include a pre-amplifier between the mixer and crystal filter — a few tests were made, and the use of a pre- and post-filter amplifier is recommended as follows:—

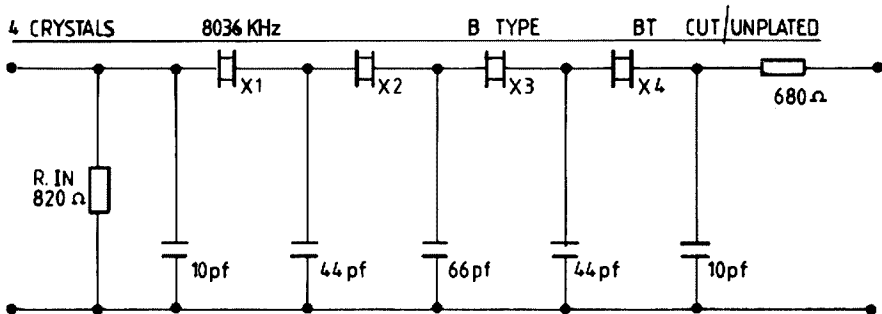


### FILTER CONSTRUCTION

The crystals are mounted in adaptor holders for use in D type sockets or banana types as appropriate; these mounted on dual sided PCB, trimmed flush, with sides and bottom eventually (after test) soldered up "water tight". I used PTFE feed-throughs for input and output leads at each end of the boxes. Constructed in this way, the prepared filter using K type crystals was smaller than a "McCoy" or "Pye" used in previous projects, and mounts easily on the VK3AFQ "Building Blocks" board (AR August 1975).

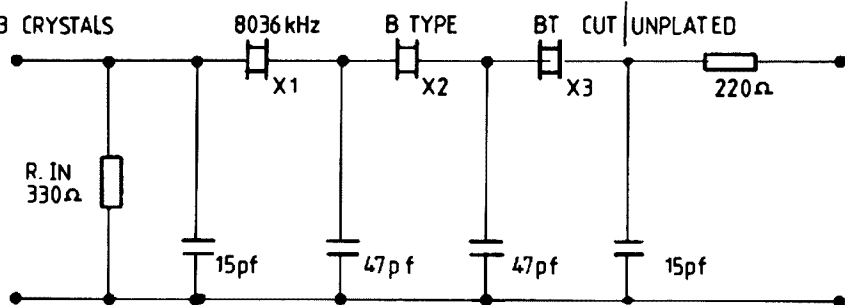
No shielding is used between sections — an elaborate lash up with miniature panels, lead throughs, etc., gave no better results.

## SOME USEFUL CIRCUITS



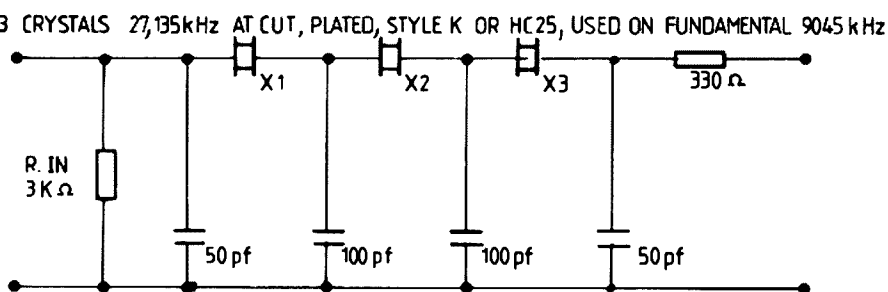
Bandwidth:—  
 3 dB 1.0 kHz  
 6 dB 1.2 kHz  
 30 dB 3.5 kHz  
 Symmetrical to beyond 40 dB.

Application:—  
 Narrow band RTTY or broad band CW.



Bandwidth:—  
 3 dB 1.2 kHz  
 6 dB 1.6 kHz  
 30 dB 6.4 kHz

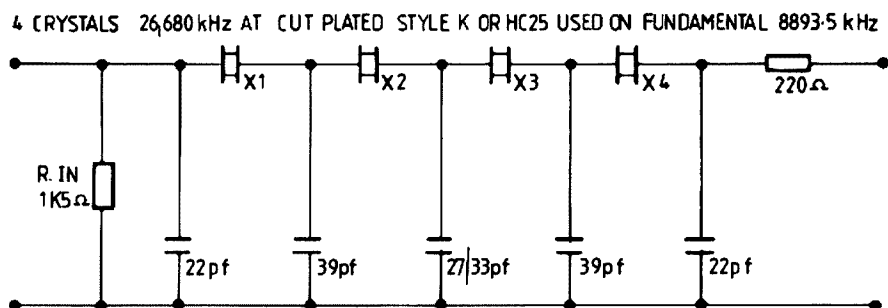
Application:—  
 Very narrow band SSB transmit only.  
 The asymmetrical response makes it suitable for application to lower sideband use only, where high frequency cut-off can be controlled by audio-response.



Problem:—  
 A small spurious spike only at +6 kHz at -40 dB.

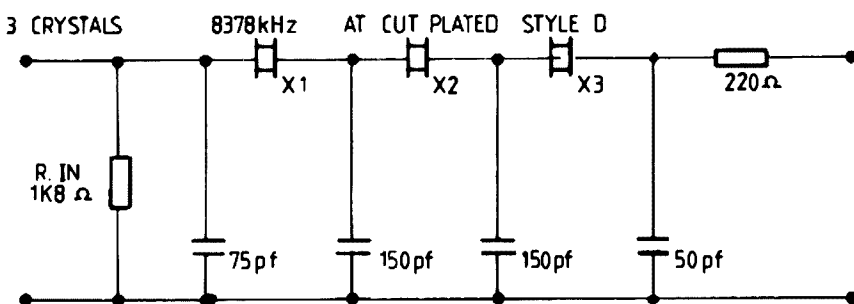
Bandwidth:—  
 3 dB 1.9 kHz  
 6 dB 2.2 kHz  
 30 dB 5.9 kHz  
 Symmetrical to beyond 40 dB.

Application:—  
 Normal USB or LSB use in place of any commercial or home built lattice filter.



Bandwidth:—  
 3 dB 2.1 kHz  
 6 dB 2.8 kHz  
 30 dB 5.9 kHz  
 40 dB 7.5 kHz  
 Symmetrical to beyond 50 dB.

Application:—  
 Normal SSB service in place of commercial filters in home built projects.



Bandwidth:—  
 3 dB 2.4 kHz  
 6 dB 2.6 kHz  
 30 dB 5.8 kHz  
 40 dB 7.0 kHz

Application:—  
 Normal SSB service to replace any commercial filter in home built projects.

## CRYSTAL OSCILLATOR

The literature gave two alternatives to ensure an extra crystal, cut for the same frequency as the filter, could be pulled for use as both lower and upper sideband carrier frequency. I had success with both, so they are shown with my values below for interest.

## MATCHING

The input resistor shown on each filter circuit is its INPUT IMPEDANCE — the pre-filter collector load should be of this value and no resistor included in the filter input.

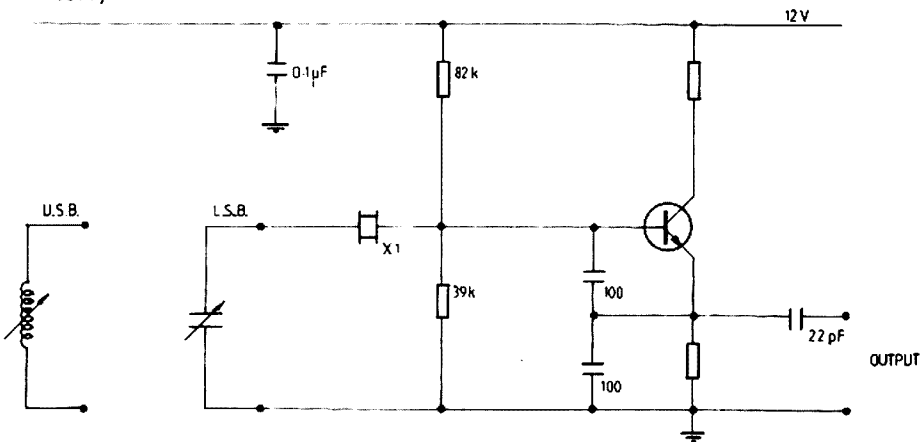
## COMPONENTS

The earlier articles specified 2 per cent tolerance silver mica or styroseal capacitors. I used what was available, mostly 5 per cent N750 ceramics. Resistors used were 10 per cent 1/4 and 1/2 watt and values selected with moderate care, as I was seeking to examine flexibility of values.

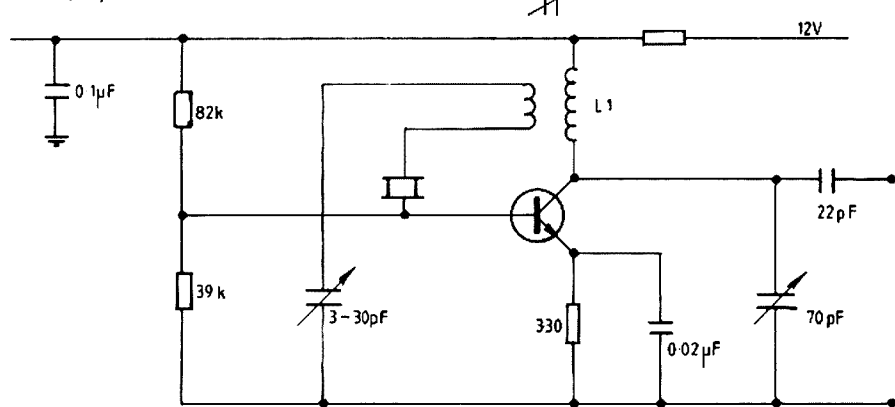
## FURTHER EXPERIMENTS

The original articles described more elaborate 6 and 7 crystal filters — some were tried; however, the 3 and 4 crystal circuits appear to be adequate for most current amateur applications.

(a) F6CER (Radiocommunications August 1977)



(b) G3JIR (Radiocommunications February 1977)



L1 = 30 TURNS, 7mm Ø, 30G

The results obtained with the plated AT cut crystals (K and D style) were so satisfying, an attempt to use a group of plated BT cut (B type metal holder) crystals was made. The bandpass ripple (more than 3 dB) and narrow bandwidth obtained does not warrant publishing the results at this stage, however I hope to continue with these later.

## OVERTONE TYPES

A crystal that oscillates on, for example, 27.135 kHz, has a fundamental series resonance of about 9045 kHz. This is the frequency at which maximum attenuation on the lower side of the bandpass is obtained — bandpass centre frequency becomes 9050 kHz.

## LATTICE FILTERS

After the construction of a number of these filters, the author regrets being diverted over the years to experiment with lattice filters using FT243, etc., styles — these ladder types are more reliable and simpler to construct.

## ACKNOWLEDGEMENTS

When one starts an experimental adventure into such well proven items as SSB crystal filters, few of today's amateurs care to

share your enthusiasm — it's already being done with lattice types, etc., etc. One who assisted me with enthusiasm, information and crystals was Clem Tilbrook VK5GL, and Paul Lawson VK5SL supplied some articles and technical discussion. My thanks to these particularly and also my other contemporaries who help keep my component resources afloat, for such experimental projects.

## FURTHER READING

Making Crystal Ladder Filters, G3VA — Rad Com., September 1976.

Some Experiments with High Frequency Ladder Crystal Filters:—

Part 1, G3JIR — Rad. Com., December 1976.

Part 2, G3JIR — Rad. Com., January 1977.

Part 3, G3JIR — Rad. Com., February 1977.

Part 4, G3JIR — Rad. Com., September 1977.

Ladder Crystal Filter Design, G3JIR — Rad. Com., February 1979.

Crystal Ladder Filters Again, G3VA — Rad. Com., June 1977.

Carrier Frequencies and SSB, G3VA — Rad. Com., August 1977.

Crystal Ladder Filters, F6BQP — Wireless World, July 1977.

Some Experiments with High-frequency Ladder Crystal Filters, G3JIR — QST, December 1978.

Ladder Crystal Filter Design, G3JIR — QST, November 1980.

## Special Education QSP

Brenda VK3KT has available:  
Trial Exam Papers —

Theory, Novice, AOCF, Regulations.

Pass CW Exams from DOC.

10 Exams at 5 w.p.m.

10 Exams at 10 w.p.m.

10 Exams fill a C60 tape. Send a tape and I will copy what you want onto it.

Complaints — or other comments — about Exam papers?

Make them known to your Federal Education Officer, VK3KT, QTHR, or on the Education Net, Wednesday evenings 11.00 UTC. 3.685 MHz ±.

A young woman teacher at a school in an inner city suburb found herself in a class with a high proportion of immigrants. While getting to know the children she asked one little boy his name. "Julie," he replied. "Ah," said the teacher. "You mean Julius. We always use the full name in my class." And turning to another little boy, she asked, "And what's your name?" The answer came back like a shot, "Bilkios!"

—From "The Clubman" Aug '82

AR





Nara 9M2LN (on left) and Hock 9M2FR.

Many Australian amateurs owe much of their success to the generous help received with theory and morse code, the majority of it made available from most Australian states.

Through the Wireless Institute's slow morse sessions and education programmes throughout the country, theory and morse code is finally mastered.

As well as our own clubs, some overseas operators give much valuable time and patience in helping many of us reach "full call" standard.

Such assistance comes from one of our close neighbors Nara 9M2LN whose valued contribution in the form of regular seven days a week CW sessions is to be admired.

The success rate of his pupils is high and they include YL's, XYL's and OM's young and old.

Recently Nara has been assisted by Hock 9M2FR, known affectionately as "Father Robert".



# CHARLIE WHISKEY FROM KUALA LUMPUR

Arthur Pritchard VK3DPA

45 McCulloch Street, Nunawading 3131

It all began in February 1979 with Nara operating a variety of equipment including KWM2A TXCVR; FTDX100 TXCVR with 500 watt linear into TH6 DX antenna at 13 metres. Morse keys used by Nara are Pickering KBI and Spacematic 2IB.

Nara's QTH is Ipoh on the Malay Peninsula and the very first classes went to air on February 9 1979. The novice stations in the group were Tricia VK6NFP, David VK5NDV, Trevor VK5NTT, Mike VK3NUQ, Ian VK6NGI, Pam VK6NGJ, Pat VK6NHP, Len VK6NLP and Wally VK6NYS, and of course countless SWL's.

As time passed many others joined in and it was not uncommon to have up to eight or nine stations on frequency able to call back.

The session is still operating seven days a week at 0200 UTC on 28.490 MHz  $\pm$  QRM. Newcomers are naturally made very welcome whether it be for three, five, ten or fifteen words per minute; assistance is available also in sending morse as well as receiving.

Nara and Hock have many years of telegraphic experience behind them. Nara began with the Boy Scout movement back in 1931, leading to training with DOC Kuala Lumpur in 1938. With the war years he was involved with the Royal Corps of Signals, and telegraphic training of personnel.

After hostilities ceased, Nara returned to training programmes with the Telecommunications Department up until 1978.

Nara was first licensed in May 1947 as VS2CN and later in October 1959 became 9M2LN. Looking back Nara can chalk up 45 years of CW experience.

Hock has been an amateur since 1957. Both good family men and grandfathers, Nara and Hock seek nothing more than to enjoy the pleasure and satisfaction of being able to help others. The biggest thrill they say is to hear of a candidate's success at recent examinations. May we wish them continued good health and good luck for the future.

## RADIOCOMMUNICATIONS BILL

AN EXTRACT FROM THE  
SPEECH BY THE MINISTER  
FOR COMMUNICATIONS THE  
HON. N. A. BROWN, Q.C., M.P.  
at the AUSTRALIAN  
COMMUNICATIONS LAW  
ASSOCIATION, SYDNEY.  
2nd September, 1982.

The proposed Radiocommunications Bill will introduce substantial reforms to the administration of the Radio Frequency Spectrum. I have to say that the proposed bill may increase the regulatory powers of the government in some respects. Without proper regulation, radio equipment may interfere inadvertently with the use or enjoyment of public or private services. A common complaint is that of private radio equipment interfering with reception of radio and television services.

In other cases, the use of equipment such as electric drills and welders can cause

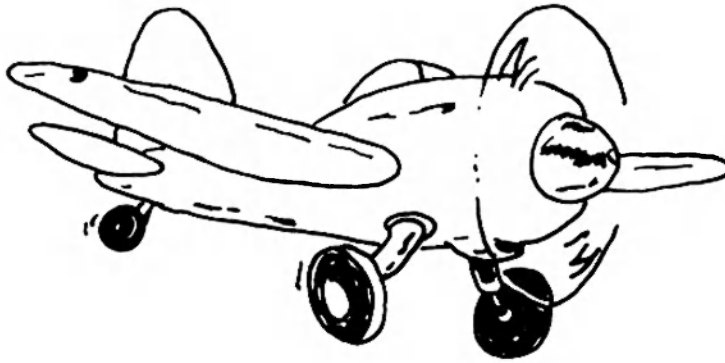
severe interference to the television services in neighbouring houses.

These complaints are costly to investigate, and in some cases we are powerless to act and prevent the interference continuing.

One of the reforms which the new Radiocommunications Legislation will probably propose is to authorise the minister to approve standards for all transmitters and certain classes of receivers. The proposed legislation would make it an offence to supply, possess or import such equipment which does not meet the standards determined.



Hock 9M2FR's 2 element Quad.



# THERMAL SOARING

Written by

Marv Gonsior, W6FR

418 El Adobe Pl. Fullerton, CA 9263

Adapted by:

Roger MacRury

Meteorological Office, Canberra Aust

**Amateurs world wide are always in the forefront of experimentation. This article illustrates how some amateurs in America use a portion of the 50 MHz amateur band to combine two hobbies.**

**The original submitted text has been adapted by Roger MacRury, a part-time Gliding Instructor with the Canberra Aero Club.**

Amateurs in the US enjoy a privilege of being authorized use of the 50 MHz band for use in Radio Control hobby activities such as sail and power planes, boats, and cars. Non-amateurs are required to operate with a licence in a non-exclusive Citizens Band allocation from 72.1 MHz to 75.64 MHz on ten frequencies. Aside from the less crowded, QRM'd situation, being able to utilize the 50 MHz band allows us total freedom to select individual frequencies, generally at the high end, and eliminates waiting to use a particular frequency if that one is already in use by another sport flier; for instance, one who is enjoying a great thermal with his sailplane up about 2,000 feet as is sometimes the case. Under outstanding thermal conditions, one may stay aloft for 30 to 60 minutes with ease, in a situation like this, with some skill and good fortune.

My particular aspect of the RC hobby is thermal soaring.

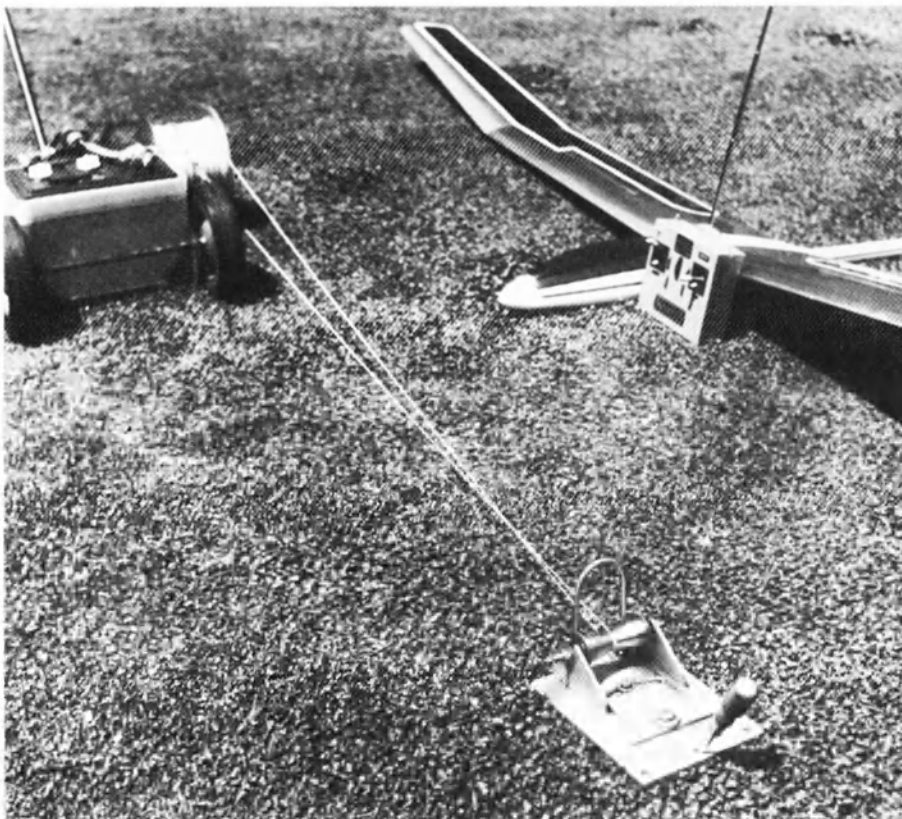
It is probably true to say that thermal soaring of models provides the greatest challenge. During the day, incoming short wave solar radiation heats the earth's surface; the heated ground then heats the lower layers of the atmosphere. This warm surface air then rises as thermal streams or bubbles and is known as convection. Thermal currents cannot be seen and the problem for model gliders is to find the next thermal before all altitude gained in the previous one has been lost.

Many also enjoy slope soaring.

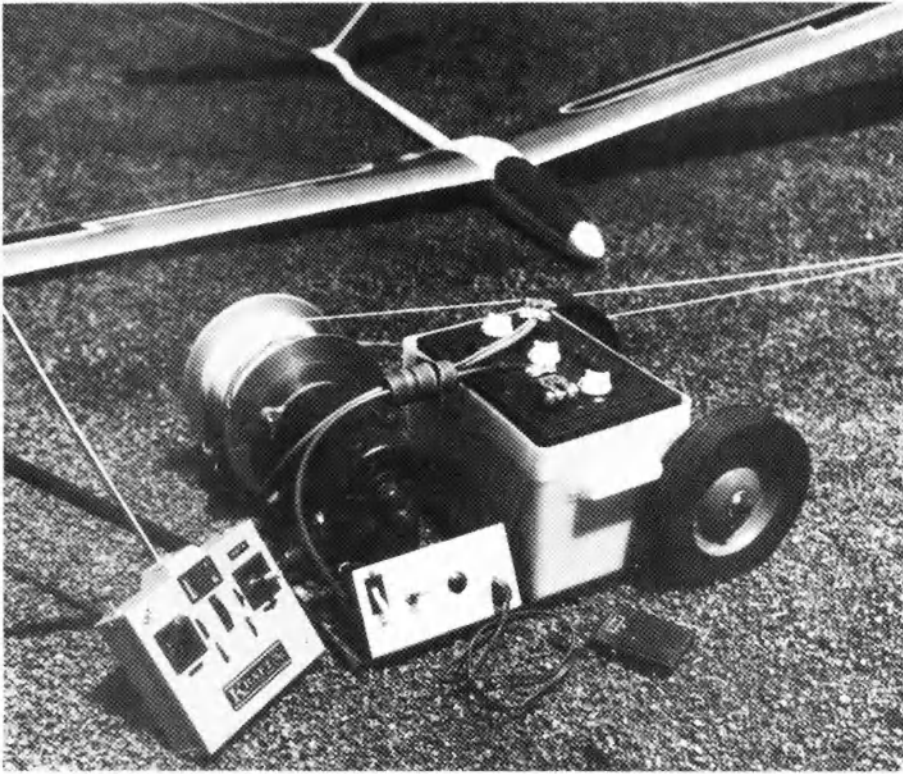
This method of soaring requires a ridge or mountain range with the wind blowing perpendicular to and over the range. In this instance, the sailplane soars by flying in the section of the air stream that rises smoothly over the mountain.

Slope soaring forms a significant proportion of model glider activities. The technique involves flying "beats" parallel to butt ahead of the ridge, so that the model remains in the ascending section of the airflow over the ridge. Models can soar as high as 2000 feet with a 700 or 800 feet ridge and a 25km/hr wind. It is possible to go higher, but it then becomes very difficult for the pilot of the model to actually see and so control the model glider.

A special instrument called a variometer is used by full size gliders to give an instantaneous read out of the rate of climb or



**Fig. 1: Basic RC system: the radio transmitter's frequency is crystal controlled with plug in modules. The power winch for launching and the glider are in the background. The glider has three channels for control, rudder, elevator and spoilers. The wing span is 11 feet 3 inches and weighs about four and a half pounds.**



**Fig. 2: A view of the "turn around" (foreground) which facilitates the pivot point from the far end of tow-line for launching.**

This hobby offers a unique opportunity to combine construction skills with the associated electronics from amateur radio and is a great father and son pastime, which is how I got started about seven years ago. My son went on to other things; I stayed with my new-found hobby.

**AMATEUR RADIO AND MODEL CONTROL**

*Launching, for thermal soaring, may be accomplished by stretching to about 900 feet, a line consisting of 100 feet of quarter-inch surgical rubber tubing and 400 feet of nylon fishing line as a giant rubber band, called a High Start, or, better yet, a lead-acid battery operated winch system as shown in figures 1 and 2, which will tow the glider up to about 600 feet, enabling one to search out the sometimes elusive thermal. What a thrill it is to be towed directly into a booming thermal right off the launch which sometimes occurs! Under these conditions, the glider will rise almost vertically with surprising speed whereas usually it will slowly rise in wide circles, following the flow of the funnel-like pattern of a typical thermal.*

The purpose of this article is not to provide a long detailed description of the hobby, but to give a snapshot view of an interesting offshoot of amateur radio. The investment to get started here is about \$300, about one-half of which is for the radio gear, if purchased new, much of which comes from Japan. The glider kits range in price from \$25 to \$150 US complete, depending on size, quality, etc. You can also build a glider from "scratch" but that should be done later as progress indicates. Of course, some small tools are required and are not too expensive if one sticks to the hand variety.

There are usually sport flying clubs where instruction may be obtained as well as library books to be read. A number of monthly magazines are published here and I would assume elsewhere. This is not a hobby as simple as it looks. It requires a number of learned skills in judgment, touch, assembly techniques, and general perception of winds, thermals and a lot of patience and practice. There is a generous number of amateurs flying RC with many tournaments, etc. There are also some international contests. A surprising number of amateurs like myself, built airplane models in earlier life and will find this a welcome renewal of an old flame, combining a number of aspects of each into new skills for a most enjoyable hobby. Happy landings and 73.

AR

descent of the aircraft. It is an essential piece of equipment in a full size glider and only the most exceptional pilots are able to achieve limited "soaring" without it.

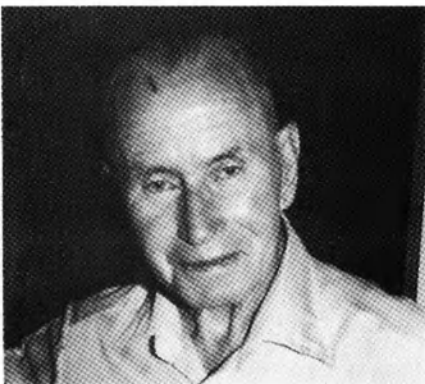
Recently solid state pressure transducers have become readily available; so a miniature on board variometer which sends its readings via radio telemetry to the model pilot should be within the abilities of an enthusiastic radio/aero modeller to construct.

This would extend the potential of any "soaring" model and be a significant challenge to its builder.

Surely, both forms of RC sailplane flying will be found in VK, as RC flying is a sport enjoyed by many amateurs in the US as well as everywhere in the world. It is surprising to find wide-spread the popularity, judging by just the results from a number of casual conversations over the air. The hobby gives one a wonderful, relaxing way of total distraction from life's problems while your bird is up in the sky. Sometimes a curious hawk or seagull will keep the glider company for a while up there, too. Trying to catch one of them is an impossibility, but it's a real challenge trying!



**THUMBNAIL SKETCHES**



**FRANK J. CAREY, The Singing Spark of Australia**

Frank, who supplied the following details, was one of 12 children. He was born near Toowoomba in 1904, and the family were neighbours of Steel Rudd. Frank overcame many difficulties, working as a canecutter and railway fletcher, to further his interest in "wireless", studying at night as a teenager.

About 1917, with the help of professional "brass pounders", Frank built a "wireless set", which has a prominent place in the Queensland Museum and which has a history in its own right. Frank did not see much of this set as it was confiscated. Frank later went to sea as a merchant marine ship operator.

A memorial plaque in Toowoomba commemorates the first experimental "wireless" telephony transmission between Toowoomba and Melbourne in 1921 by Messrs. Bright and Carey.

The Melbourne operators were A. S. McDonald, J. G. Reed, C. Tapp and R. Alsopp.

Life membership of the American Society of Wireless Pioneers and the Institution of Radio and Electronic Engineers (Sydney) has been granted to Frank.

WW2 saw Frank ("Tex") as a member of the "3" Squadron RAAF. Frank, now living in Sydney, is well known on the Coral Coast net as VK2AMI.

AR

# RD Contest — Opening Address

Opening Address at 1982 Remembrance Day Contest by The Hon. David Jull, M.P., Member for Bowman, and Chairman of the Back Bench Communications Committee.

Thank you very much indeed for your kind invitation to open the 1982 WIA REMEMBRANCE DAY CONTEST. It's indeed a great honour and a further step in cementing our close associations — associations that I really do appreciate. Today we should remember the service of those amateurs who gave their lives in the defence of their country during World War 2, and I'm sure those dedicated and brave men would be proud to know that it is in this form that the Institute remembers and pays tribute to them.

Although we are at peace, it's a fragile peace, but I'm sure that if ever there was another emergency forthcoming, and I trust it never will, no doubt the skills and dedications of the amateurs would be very much to the fore.

What never ceases to amaze me, is the enthusiasm of the members of the WIA and the fact that through their operations they manage not only to maintain links of mutual friendship

throughout Australia, but indeed throughout the world. What great ambassadors for Australia your members can be, and indeed have been, in the years past. I'm sure we'll all remember the work of the amateurs in times of national and international emergencies. Speaking from Brisbane, my mind goes back to the tragic 1974 Brisbane floods. As a working journalist at that time, I was acutely aware of the work that was being done by your members at what was probably one of the most crucial times in this city's history. It's important, of course, that your work continues. Technological changes are always with us and we are indeed on the verge of a communications revolution. I know that your members do study these changes, and indeed make a very great contribution to the continuing technical debate in the 'halls of power' in Canberra, especially in the formulation of new legislation. You will be aware that urgent changes are required to the

W. and T. Act. The advice of the Institute is being considered, and it is hoped that we will see amendments presented to the Houses of Parliament in this coming Session. It's really quite crazy to think that we're working off an Act as ancient as this one is, despite all the amendments of recent years. And as I said, with the changes in technology on us now, we certainly cannot afford to allow this review to languish any longer.

Could I mention your training schemes, especially for the young and new amateurs, because it is recognized and it is very much appreciated, and I trust that this work will continue. I'm sure that we all wish the Institute well and trust it will go from strength to strength.

Once again, may I wish all involved the very best for this year's Contest, and in remembering the significance of this occasion it's with very great pride that I declare the 1983 REMEMBRANCE DAY CONTEST open. **AM**

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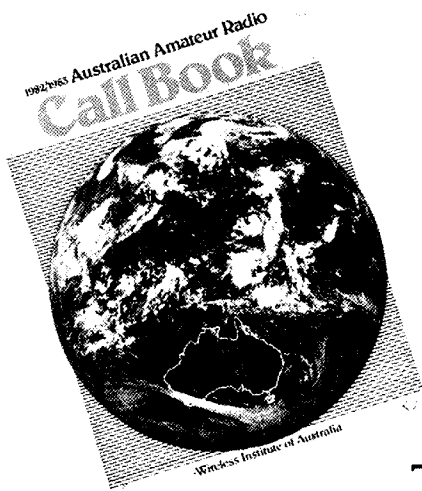
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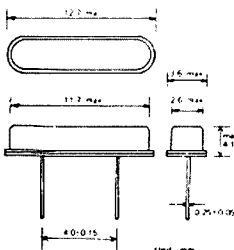
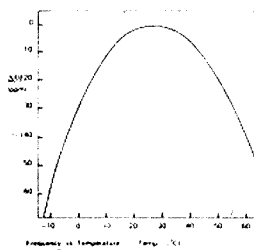
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| 2. Frequency Tolerance          | +30 ppm/28° +1°C                               |
| 3. Drive Level                  | 1µW max                                        |
| 4. Series Resistance            | 31.0 kOhms max                                 |
| 5. Q Factor                     | 40,000 min                                     |
| 6. Parabolic Curvature Constant | Less than -0.04 ppm/°C<br>(Refer Fig. 1)       |
| 7. Turnover Temperature         | 28.0°C +5°C                                    |
| 8. Capacitance Ratio            | 700 max.                                       |
| 9. Storage Temperature Range    | -30°C +80°C                                    |
| 10. Operating Temperature Range | -10°C +60°C                                    |
| 11. Aging rate                  | Less than +5 ppm/year                          |
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| 13. Package Size                |                                                |

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W01114



# The Location of Aerials on Motor Vehicles

Geoff Atkinson VK3YFA  
24 Werat Drive, Ringwood, Vic.

## APPEARANCE

Undoubtedly, an aerial located in the centre of a car roof detracts from the appearance of the car and, although a sloping aerial at the leading edge of the roof is often adopted, the general use of a roof aerial is becoming the exception rather than the rule.

## SECURITY

An aerial mounted on the roof of a car is obvious as to its use and, with certain types of police cars, it is often necessary to disguise the car's use in some way, in order to achieve an element of surprise in an operation.

## PRIVATE CAR USE

Where a radio installation is made in a private car, it is often not in the owner's interest to drill large holes in the roof and this alone often prevents the use of an aerial in this position.

## GENERAL INSTALLATION PROBLEMS

The installation in a car roof is generally more difficult due to the requirement to feed the cable inside the head lining, past various struts, etc., and in a number of cars the head lining must often be loosened before this can be done.

Purely on the grounds of maximum efficiency, the aerial on any mobile installation should be fitted on the highest part of the motor vehicle, provided certain fundamental electrical conditions are fulfilled. Nevertheless, this position is not always chosen for the following reasons:—

Insofar as the technical considerations are concerned, the mounting of the aerial in the centre of the roof, giving a ground plane of at least  $\frac{1}{4} \lambda$  in all directions, will provide a substantially omnidirectional pattern with a slight upward tilting of the "E" plane lobe. In general, this is an ideal pattern.

If the aerial is mounted on the leading edge of the roof, giving the desired ground plane in all directions except forward, the pattern will tend to be "lopsided" with optimum radiation towards the rearward direction. In other words, the best results will exist when the car is going away from the station.

Assuming that the roof of the car cannot be used for the aerial, then the next best position must be determined. Three basic parameters must be observed.

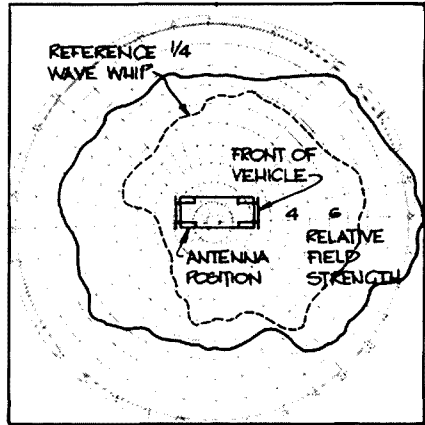
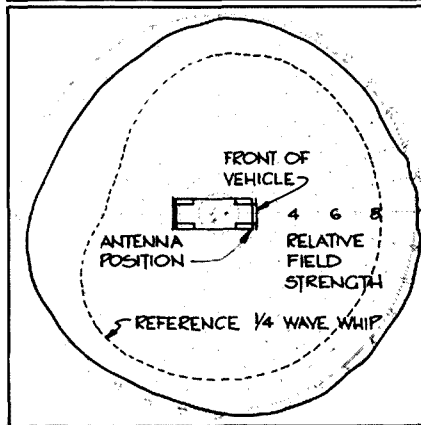
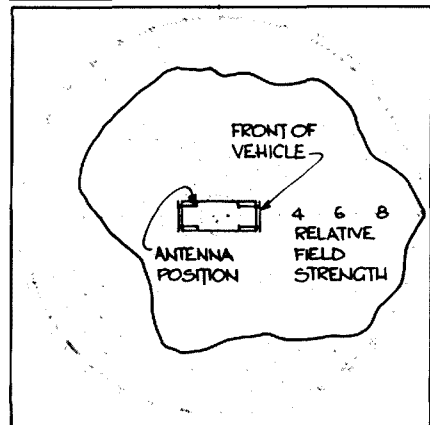
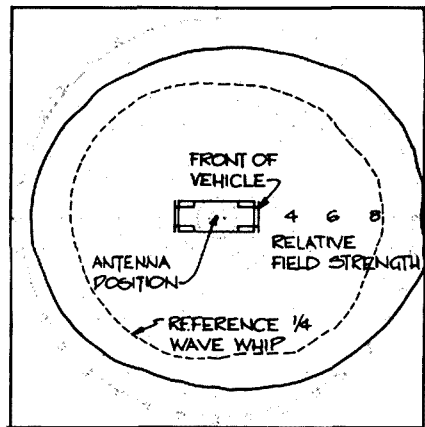
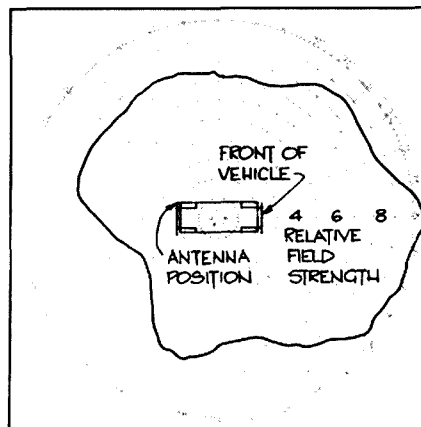
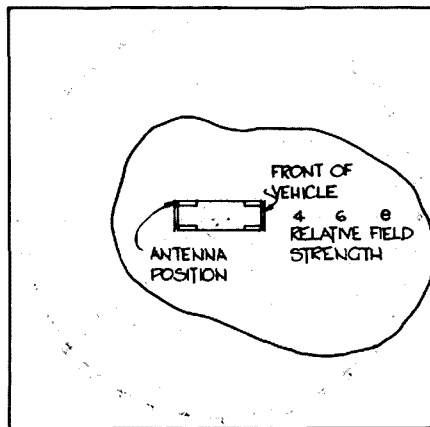
(a) The aerial must be mounted at a point on the car where a suitable ground plane exists, i.e. maximum amount of

plane surface —  $> \frac{1}{4} \lambda$  — beneath the aerial, extending in as many directions as possible.

- (b) The aerial must be at least  $\frac{1}{4} \lambda$  away from vertical or semi-vertical metal pillars, etc., i.e. windscreen pillars, rear window pillars, door pillars, etc.
- (c) The aerial must be as far from the car's ignition system as possible, particularly insofar as avoiding a ground plane which is in the immediate vicinity of the ignition system, or part of the general screening, i.e. bonnet cover.

Various places other than the roof exist on a car where suitable results can be obtained, but all tend to show some basic disadvantage allied with (a), (b) or (c) above.

Fortunately, modern cars have sloping lines to the main section and therefore the effect given in (b) tends to be minimised.



Additionally, ignition systems in present-day vehicles are in most cases suppressed to an approved standard so that (c) is not likely to prove a problem provided normal care is taken insofar as earthing, etc., is concerned.

The provision of an adequate ground plane in all directions is unlikely unless the aerial is mounted in the centre of the trunk lid. This is not an elegant solution and the side wings usually become the location to be considered.

Bearing in mind the ground plane restriction, some reduction in signal level (and range) can occur in the direction broadside to the car on the side the aerial is mounted. Additionally, any vertical pillar will also tend to affect the polar diagram with a result that undoubtedly there will be some range variations according to the position and travelling direction of the vehicle.

A further modification to the pattern will occur as the frequency changes. For instance, at VHF the main effect will be that caused by the ground plane restrictions, whilst at UHF the effect of vertical pillars, etc., will cause the greatest effect.

Assuming that the wing is chosen as the aerial position, the position relative to the rest of the bodywork, coupled with the general size and shape of the wing, must be considered.

Whether the rear or front wing is used will not materially affect the basic signal level, although the orientation of the pattern will change. However, ignition interference may be slightly higher when the aerial is mounted next to the engine and therefore, to minimise interference, the wings at the opposite end of the car should be chosen if possible. With a front mounted engine, the use of a rear wing does, of course, assist in the installation when a trunk unit is fitted, whilst the front wing simplifies the installation when a dash mounted unit is used.

In general, however, the aerial position tends to be a matter affecting the appearance of a car rather than any other reason. Undoubtedly the wing position simplifies installation and possibly does not detract from the resale value as would a roof mounting. On the other hand, the roof is obviously the best electrical position and, on cars specifically intended for, say, police work, this position should be chosen in all cases other than those needing a measure of secrecy. ■



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# Axioms

By Brian VK2AXI  
in the "Propagator" May 1982

## AMATEUR RADIO AND THE WAR

If anyone wants an interesting book to read, I would have to recommend "Most Secret War" by R. V. Jones (first published 1978 by Hamish Hamilton; my copy is the paperback Coronet edition, 1979). It is an account of British Scientific Intelligence between 1939 and 1945, with particular reference to radio-navigation systems, radar, and the V weapons. Some of the material in the book appeared in the TV series "The Secret War".

The book contains, in its 702 pages, two references to amateur radio, and both should be of particular interest to politicians and amateurs alike.

On the British side, Jones says "One day I was talking to a relative newcomer to Signals Intelligence, Flight-Lieutenant Rowley Scott-Farnie . . . an enthusiastic radio amateur, he had joined the RAF Signals Intelligence Service at the outbreak of war. Incidentally, our community of radio amateurs in Britain was to prove an invaluable reserve, both in Signals Intelligence and in Signals proper, as well as furnishing many of the staff for our rapidly increasing number of radar stations."

The other reference refers to the German side. On 28th February, 1942, a German radar station on the French coast at Bruneval was successfully raided, and much of the equipment, together with two German prisoners, was returned to England for investigation. Jones says: "The Bruneval booty was . . . obviously much better engineered than our own radar equipment, a fact which was readily admitted by our own radar men in their final report. We

took some of it out to discuss it with the operator who had been taken prisoner, and who was very co-operative. We were disappointed that, despite his readiness to help, his technical competence was far lower than that of any of our own operators. The low technical ability of the operator and the high engineering standard of the equipment were not altogether dissociated. When I met General Martini, the head of German Air Signals and Radar, after the war, I told him that these two factors had surprised me, and he pointed out that he had a very low priority in demanding personnel and had to make do with those who were deemed unsuitable for other duties. He had no skilled reserve to draw upon among radio amateurs, as we had, because Hitler had banned amateur radio before the war since it might provide communication links for disaffected organizations. Martini had therefore to ensure that the equipment was so well made, and so easily replaceable if any part broke down, that the system could be operated by relatively unskilled personnel."

The February issue of "Zero Beat", the newsletter of the Youth Radio Scheme, contains an interesting passage from a footnote in "The Secret War", the book of the TV series:

Hermann Goering (commenting on Western technical superiority in March 1943): "The main blame belongs to Ohnesorge (Minister of Posts) — he never wanted to relax his grip on anything. We smashed up the amateur radio 'ham' clubs and wiped them out, and we made no effort to help these thousands of small inventors. And now we need them." ■

## HOW TO KNOW YOU'RE GROWING OLDER

From "Gateway", Feb. 1982

Everything hurts and what doesn't hurt, doesn't work.  
The gleam in your eyes is from the sun hitting your bifocals.  
You feel like the night before, and you haven't been anywhere.  
Your little black book contains only names starting with "Fr."  
You get winded playing chess.  
Your children begin to look middle-aged.  
You finally reach the top of the ladder, and find it leaning against the wrong wall.  
You join a health club and don't go.  
You begin to outlive enthusiasm.  
You decide to procrastinate but never get around to it.  
Your mind makes contracts your body can't meet.  
You know all the answers, but nobody asks you the questions.  
You look forward to a dull evening.  
You walk with your head held high trying to get used to your bifocals.  
Your favourite part of the newspaper is "25 years ago today."  
You turn out the light for economic rather than romantic reasons.  
You sit in a rocking chair and can't get it going.

Your knees buckle and your bell won't.  
You regret all those mistakes resisting temptation.  
You're 174 around the neck, 424 around the waist, and 101 around the golf course.  
You stop looking forward to your next birthday.  
After painting the town red, you have to take a L-O-N-G rest before applying a second coat.  
Dialing long distance wears you out.  
You're startled the first time you are addressed as "old timer."  
You remember today, that yesterday was your wedding anniversary.  
You just can't stand people who are intolerant.  
The best part of the day is over when the alarm goes off.  
You burn the midnight oil after 9.00 p.m.  
Your back goes out more often than you do.  
A fortune teller offers to read your face.  
Your pacemaker makes the garage door go up and down when you watch a pretty girl go by.  
The little grey haired lady you help across the street is your wife.  
You get your exercise acting as a pallbearer for your friends who exercise.  
There is too much room in the house and not enough in the medicine cabinet.  
You sink your teeth in a steak and they stay there.

Courtesy of Ex G Club ■

# SERVICE BULLETIN

## or do your own repairs??

### FT-ONE TRANSMIT MODIFICATION

The following information will allow you to change the transmission and receiving frequencies of the FT-ONE to conform with local requirements.

1. Remove the CONTROL Unit from the FT-ONE.
2. Referring to Fig. 1, note that connecting a jumper wire from Point A to either Point B or C sets the receiving frequency range, while connecting another jumper wire from Point D to Point E, F, G or H sets the transmission frequency range.
3. Solder the jumper wires to the appropriate points, selected from the Table below.

### RECEIVING FREQUENCY RANGE SETTING CHART

| RANGE                            | Jumper Connection |
|----------------------------------|-------------------|
| 150 kHz-27 MHz,<br>28 MHz-30 MHz | A-C               |
| 150 kHz-30 MHz                   | A-B               |

### TRANSMITTING FREQUENCY RANGE SETTING CHART

| RANGE                                                                                                     | Jumper Connection |
|-----------------------------------------------------------------------------------------------------------|-------------------|
| 1.8-2 MHz, 3-4 MHz,<br>7-8 MHz, 10-11 MHz,<br>14-15 MHz, 18-19 MHz,<br>21-22 MHz, 24-25 MHz,<br>27-30 MHz | D-E               |
| 1.8-2 MHz, 3-4 MHz,<br>7-8 MHz, 10-11 MHz,<br>14-15 MHz, 18-19 MHz,<br>21-22 MHz, 24-25 MHz,<br>28-30 MHz | D-F               |
| 1.8-2 MHz, 3-4 MHz,<br>7-8 MHz, 14-15 MHz,<br>21-22 MHz, 27-30 MHz                                        | D-G               |
| 1.8-2 MHz, 3-4 MHz,<br>7-8 MHz, 14-15 MHz,<br>21-22 MHz, 28-30 MHz                                        | D-H               |
| 1.8-30 MHz                                                                                                | No connection     |

Receive: general coverage (jumper 1: A-B)

Transmit: WARC (jumper 2: D-F)

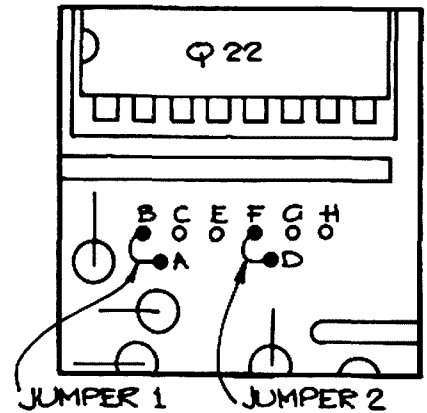


FIG. 3

4. The example shown in Fig. 3 describes how to set the receiver coverage to 150 kHz through 29.999 MHz and the transmitter coverage to the new WARC bands.

The FT-ONE cannot legally be used as a marine transceiver on Australian registered ships. This modification to convert the FT-ONE to an FT-ONE-G (for general coverage), which includes the marine bands, is intended for use on foreign registered ships not operating in Australian waters or Government agencies.

This information has been kindly supplied by Dick Smith Electronics, Technical Bulletin No. 73.

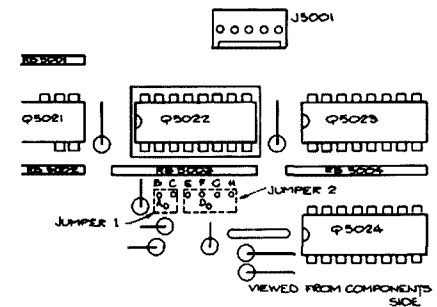


FIG. 1

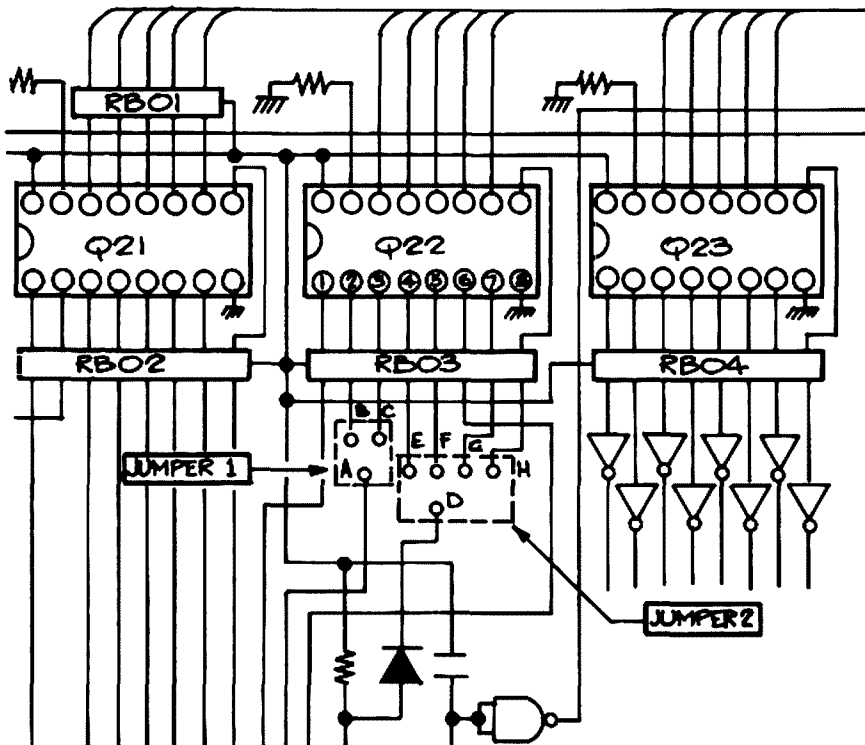
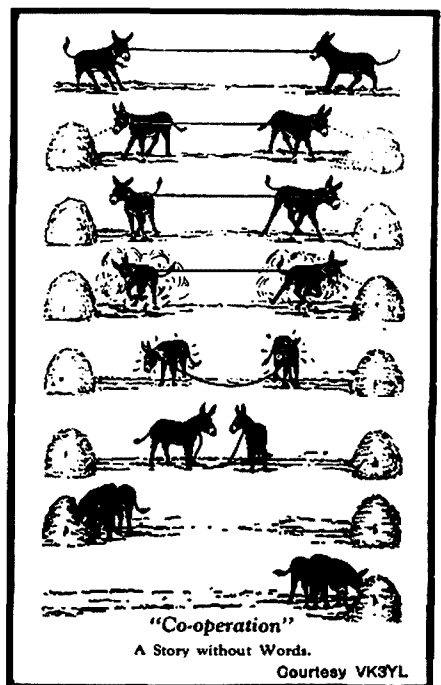
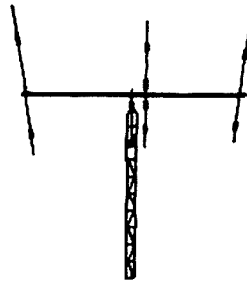


FIG. 2





# COMMERCIAL KINKS



## SERVICE AND MAINTENANCE OF TRAP BEAM ANTENNAS

By John Walker ZL3IB

This article reprinted from Break-In March 1982

Some time ago my Moseley TA 33 Jr tri-band developed high SWRs on 15 and 20m, but 10m operation was still adequate; I therefore wrote to the manufacturers for advice. The following article is based on their service notes and may be helpful to anyone with a multi-band beam.

Firstly, it is essential to understand how the traps work since they are critical for operation of this type of antenna. In each element they act as a high impedance at their resonant frequency; thus anything that downgrades their performance will upset the whole system. The Moseley traps comprise two coils wound on polystyrene formers enclosed in a wider 1½ in. outer tube (Fig. 1). Electrically the inner and outer tubes form the two coaxial capacitors of the two parallel tuned circuits (Fig. 2).

### DISMANTLING

Each trap assembly is different so it is a good idea to renew the original colour coding before you start. It may save a lot of headaches later.

- (1) Remove each trap assembly and warm up to 60-100°C (borrow the XYL's hair-drier) to soften the plastic end-caps. When soft and pliable, slide them off the assembly; some soapy water can be used as a lubricant.
- (2) You will now see two small screws holding a 20 SWG wire on to the outer tube. Unscrew these and pull out the coil assemblies.
- (3) Clean the coils by brushing with a stiff brush (e.g. old tooth brush) but do not use water or solvents. Remove any

- (5) Reassemble by reversal of the above procedure. Originally the 20 SWG wire from the end coil was simply wrapped under the self-tapping screw that holds the outer tube in place but I found this to be badly corroded in my antenna. I therefore decided to solder this wire to a lug and mount with a serrated washer; I then sealed it with a dab of nail varnish.
- (6) Finally replace the plastic end-caps; I sealed mine with RTV Silicone rubber cement. If the plastic caps are damaged, substitutes can be made by cutting a 12 mm (½ in.) hole in the ends of 28 mm plastic tube feet (as used on metal chairs, etc).
- (7) When rejoining the aluminium tubing elements thoroughly clean off mating surfaces and coat with a light smear of graphite grease, or similar agent, to minimise corrosion.

Since carrying out the above overhaul my TA 33 Jr has performed like new. AA

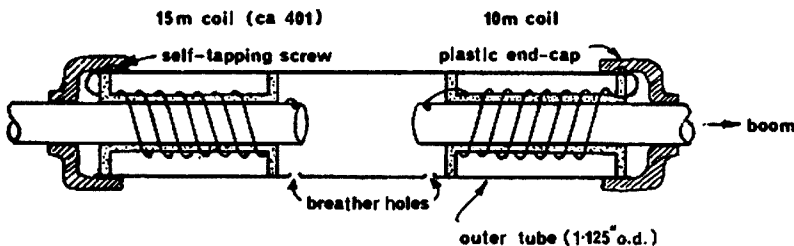


FIG. 1: Diagram of trap element

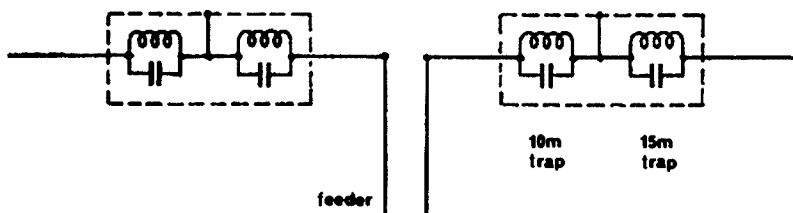


FIG. 2: Equivalent electrical circuit of driven element of three-band, trap beam.

### DIAGNOSIS

Most problems are due to faulty coils and/or corrosion. Defective trap coils may be located by checking the SWR on all bands. High SWR at resonant frequency on all bands suggests a defective 10m coil; this is the coil with the fewest turns and nearest the boom. If only 15 and 20m operation is defective, then the fault probably lies in the 15m coil (this one has about 40 turns).

corrosion. Check for any signs of arcing from the outer locking screws, through the plastic coil form, to the inner tubing.

- (4) Clean the inside of the 1½ in. OD trap covers to remove any spider webs, etc. Spider webs allow moisture to accumulate and may allow arcing to occur.

## The Prez sez...

ARNS Bulletin October 1981

In the past few weeks I have had the opportunity to experienced emotions that I never really had experienced before. Oh, I was aware of their existence and observed others in the throes of these human exultations, but I never really knew, personally, what the emotion felt like deep inside. I speak of willing service to others less fortunate, at the cost of personal sacrifice of your time and effort.

One of the elements of the Amateur Radio Operators' Code is "The amateur's knowledge and his station are always ready for the service of his country and his community".

THINK about that statement — for what it really means is that you will never share the real joy of amateur radio until you have experienced the emotion of truly serving others. What a perfect opportunity we have for this practice in our hobby of amateur radio.

If you take from amateur radio without giving of yourself, you will soon tire and drop from the ranks. You will become a listener. AA

# TEST EQUIPMENT REVIEW

Ron Cook VK3AFW  
TECHNICAL EDITOR

## REVIEW OF THE AARON MODEL BS-635 35 MHz DUAL TRACE OSCILLOSCOPE

Every serious amateur needs a range of measuring instruments. Next to a multimeter and a frequency counter the most necessary instrument is a good HF oscilloscope.

Japanese instruments today compare very favourably with both locally-made and USA-made equipment. The Aaron oscilloscope range is no exception. The cathode ray oscilloscope (CRO) enables the operator to examine the dynamic operation of electronic equipment with an accuracy equal to the analogue multimeter. A good CRO will have a wide frequency range, a wide amplitude range, a large screen with a bright display and a sweep system capable of giving a stable display of complex signals. The BS-635 is a good CRO; it is suitable for radio and TV servicing, computer applications and electronic instrument testing.

The BS-635 is a modern dual trace general purpose oscilloscope with a 35 MHz vertical bandwidth. A sensitivity of 1 mV/division is available, by using a x5 gain switch, with a bandwidth of 10 MHz.

This oscilloscope is provided with a variety of features which, a few years ago, could only be obtained in an oscilloscope costing half as much as a new family sedan. AMONG THE FEATURES ARE a *bright, metal-back meshed CRT, delayed triggering, alternate triggering, single sweep, trigger hold-off, vertical and horizontal magnifiers and intensity modulation.*

### CHARACTERISTICS

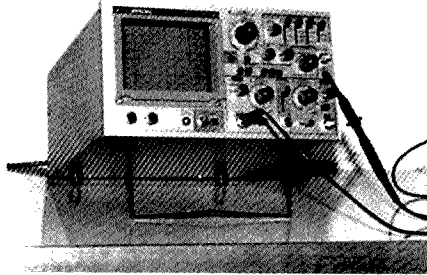
The BS-635 is of average size for a modern bench mounting CRO and is quite light (7.5 kg). This is good news for the mature readers who will remember the old hernia-makers of 15 years ago.

The reviewer believes that a front panel should not be made as small as technology might allow. Aaron Corporation have kept the front panel to about the right size. Indeed if it were much smaller the controls would need to be smaller and/or closer together, a change which could make them harder to use. The external finish is of high quality, although an inspection of the inside reveals some additional components soldered to the track side of several PCB's. Evidently the original design was not quite adequate in production. There is quite a lot of space inside the cabinet as only 3 PCB's are used.

As already indicated the controls are about the optimum size. The reviewer could not fault the location of the controls. All the switches had positive actions and the variable controls all operated smoothly. One nice feature was the discreet use of color to highlight particular functions. For example sweep times for TV frame or line examination, or to show when the frequency response was not 35 MHz.

Lights indicate when the trigger circuit has sufficient signal and when the sweep is ready for a "single shot".

The large 8 x 10 cm screen gives a bright sharp picture even at the fastest sweep



speeds. Only at the highest intensity levels did the trace thicken appreciably. Distortion is very low making this CRO a contender for use with computer generated displays.

The two vertical amplifiers offer the same excellent performance giving 5  $\mu$ V to 10 V/cm deflection up to 35 MHz (-3 dB). For lower level signals below 10 MHz a x5 gain switch is available. Either amplifier A or B can be used alone or both together, or the combined signals A + B or A-B can be viewed. Amplifier B has an "invert" switch. A chopped display is given for 1ms/div. to 0.5 s/div when the alternate mode is selected.

Tests were made on DC on both amplifiers with a  $\pm$  2cm deflection. As received there was an average error of about -5%. After adjustment the accuracy was excellent over the whole range.

A series of tests at frequencies up to 120 MHz were made using an expensive American CRO as a reference. The BS-635 gave a display equal to the reference up to 50 MHz (neglecting the reduction in sensitivity) and an acceptable performance to 90 MHz on an AM modulated RF signal. The triggering was more stable on the BS-635! (A little practice was required to get correct operation but this is true of any triggering circuit.)

The vertical amplifier offers both DC and AC (10 Hz plus) coupling as well as an isolated ground for setting the trace.

The time base is excellent. Because of the large number of modes it is quite a bit more complex in operation than the A or B channels. The operator has a choice of sweep or X-Y is the Y channel and channel B is the X channel.

In the sweep mode the sweep time can be set between 0.1  $\mu$  to 0.4 s/cm; a x5 magnifier gives an effective 20 $\mu$ s/cm.

The trigger source can be internal, AC mains, or external. If it is internal it can be from amplified A or B or alternated between A and B.

The triggering is effective to beyond 50 MHz. Slope selection, HF or LF rejection, AC or DC coupling to the trigger source, TV synch, can all be selected.

The trigger level can be selected by the usual sort of variable control. An addition to the usual facilities is the "hold-off" which assists in viewing complex waveforms. The handbook does not adequately describe this function. Another useful feature is the adjustable trigger delay (0.1  $\mu$ S-100 ms).

When the "INTENSIFIED" button is pressed the part of the waveform that appears during the delayed period is reduced in intensity. Thus part of the waveform of particular interest may be selected (see Fig. 1) starting up to 100 ms after the trigger switching from "INTEN'D" TO "DELAY'D" causes that part of the waveform previously at full brightness to be shown commencing at the left of the screen. Operating the x5 switch gives an expanded stable picture of the selected part of the waveform. Very handy for video and telemetry testing.

### HANDBOOK

The handbook shows occasional minor lapses into Japanese-English but it really has only one main shortcoming. There is only a scanty section on maintenance. Although a circuit diagram is given, detailed waveform shapes, voltages etc. are not given. The treatment of operating instructions and applications plus calibration adjustments is reasonable (see earlier comment on hold off).

### SPECIFICATIONS

#### CRT

6" (150mm) Flat-faced Metal-back Post-Deflection-Accelerator with Internal Graticule

Effective Display Area: 8 x 10div (1div = 10mm)  
Acceleration potential: 6kV.

#### VERTICAL

Operating Modes: CH-A, CH-B, DUAL, ADD and SUB (CH-B can be inverted.) — DUAL Modes: ALTER: 0.1 $\mu$ s ~ 0.5ms/div; CHOP: 1ms ~ 0.5s/div — CHOP Frequency 200kHz approx.

Deflection factor: 5mV/div ~ 5V/div; 1mV/div ~ 1V/div (5X GAIN); 10 ranges in 1-2.5 step with time control

Bandwidth: NORM; DC; DC ~ 35MHz(-3dB). AC; 10Hz ~ 35MHz(-3dB) — 5X GAIN: DC; DC ~ 10MHz(-3dB). AC; 10Hz ~ 10MHz(-3dB)

Rise Time: Less than 10ns (Less than 35ns with 5X GAIN.)

Overshoot: Less than 3%  
Input Impedance: 1M $\Omega$   $\pm$  5%, 20pF  $\pm$  3pF.

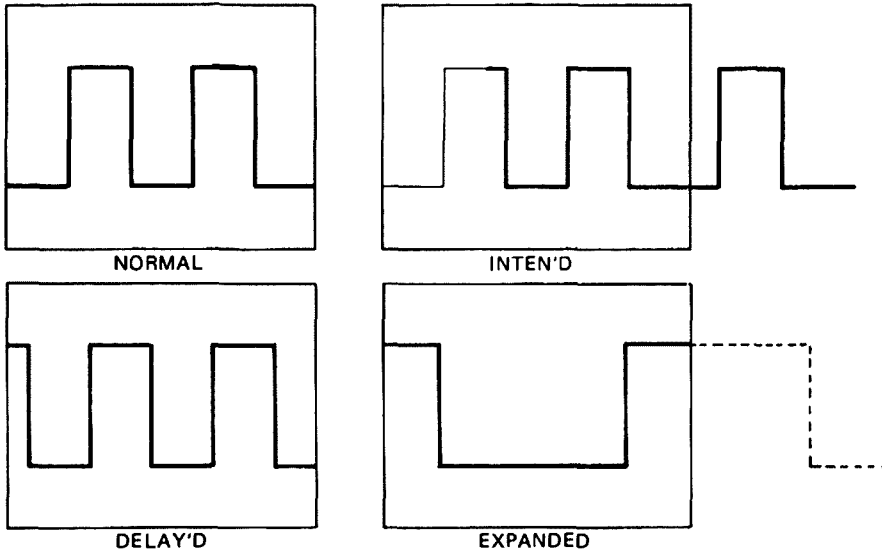


Fig 1: Operation of Intensified, Delayed and Expanded functions for viewing a complex wave.

Maximum Input Voltage: 600Vp-p or 300V (DC + AC peak)  
 Channel Isolation: Better than 60dB at 1kHz  
**HORIZONTAL**  
 Sweep Modes: NORMAL, AUTO and SINGLE  
 Time Base: 0.1 $\mu$ s ~ 0.5s/div (Accuracy within  $\pm$ 3%); 21 ranges in 1-2-5 step with fine control  
 Sweep Magnifier: 5 times (5X MAG) ( $\pm$  10%)  
 Linearity: 3% — Delayed Trigger: INTEN'D; Delay time become dim. DELAY'D; Sweep starts at time delayed. Delayed Time: 100msec ~ 1  $\mu$ sec in 5 steps with variable. Jitter: 1/5000

**TRIGGERING**

Sensitivity: INT: More than 0.3div for DC ~ 7MHz; More than 1div for DC ~ 35MHz (triggerable up to 50MHz); More than 1.5div for DC ~ 10MHz (vertical PULL 5X GAIN) — EXT: More than 50mVp-p for DC ~ 7MHz; More than 0.2Vp-p for DC ~ 35MHz (triggerable up to 50MHz)  
 Source: INT(CH-A, CH-B, ALT), LINE, EXT, 1/10 EXT, TV(LINE, FRAME)  
 Slope: Positive and Negative, continuously variable with level control, PULL AUTO for free-run  
 Coupling: AC, HF-REJ, LF-REJ, and DC(HF/LF REJ at 30kHz) — TV SYNC Vertical and Hori-

zontal Sync Separator Circuitry allows any portion of complex TV video waveform to be synchronized and expanded for viewing TV-H(Line) and TV-V(Frame) are switched automatically by SWEEP TIME/DIV switch — TV-V: 0.5s/div to 0.1ms/div — TV-H: 50 $\mu$ s/div to 0.1 $\mu$ s/div

**X-Y OPERATION**

CH-A: Y axis; CH-B: X axis; Highest sensitivity: 1mV/div

**OTHER SPECIFICATIONS**

Intensity Modulation: TTL Level(3Vp-p); Positive ... brighter; Bandwidth: DC ~ 1MHz; Maximum Input Voltage: 50V(DC + AC peak)  
 Calibration Voltage: 0.5Vp-p  $\pm$  5%, 1KHz  $\pm$  5% Square wave  
 Trace Rotation: Electrically adjustable on the front panel  
 Power Requirements: AC: 100, 120, 220, 240V  $\pm$  10%; 50/60Hz; 30W approx.  
 Weight: 7.5kg approx.  
 Size: 162(H) x 294 (W) x 352(D) mm

**CONCLUSION**

Overall it is a high performance professional HF oscilloscope with very good sensitivity and excellent triggering facilities. Although it is suitable for research and test laboratories the price places it within the reach of the serious amateur/constructor. After all many HF rigs cost a lot more than the price of \$790. Further details are available from Elmeasco Instruments Pty Ltd, who very kindly made this instrument available for evaluation.

**ELMEASCO INSTRUMENTS PTY LTD**

NSW: P.O. Box 30, Concord, 2137. 13-15 McDonald St. Mortlake. (02) 736 2888.  
 Victoria: P.O. Box 107, Mt Waverley, 3149. 21-23 Anthony Drive, Mt Waverley. (03) 233 4044.  
 Adelaide: (08) 271 1839.  
 Brisbane: (07) 229 3161.  
 Perth: (09) 398 3362.

**ASSESSMENT SUMMARY OF AARON MODEL BS-635 OSCILLOSCOPE**

| CATEGORY                    | RATING | COMMENTS                                                           |
|-----------------------------|--------|--------------------------------------------------------------------|
| <b>APPEARANCE</b>           |        |                                                                    |
| Packaging                   | ★★★    | Foam inserts in a sturdy carton                                    |
| Size                        | ★★★★   | Suitable for laboratory bench operation                            |
| Weight                      | ★★★★   | Light enough to carry easily                                       |
| External finish             | ★★★★★  | Attractive and of good quality                                     |
| Construction                | ★★★    | Some extra components soldered to PCB tracks                       |
| <b>FRONT PANEL</b>          |        |                                                                    |
| Control positioning         | ★★★★★  | Logical and convenient                                             |
| Control size                | ★★★★★  | Easy to grasp and adjust                                           |
| Scale and control markings  | ★★★★★  | Unambiguous. Nice use of discrete colors                           |
| Indicators                  | ★★★    | Sweep ready and triggered lamps. No beam finder                    |
| <b>SCREEN</b>               |        |                                                                    |
| Intensity                   | ★★★★   | Bright at all sweep speeds. Probably not burn-proof                |
| Focus                       | ★★★★   | Sharp over whole screen. Blurs only at extreme intensity           |
| Linearity                   | ★★★★   | Barely detectable distortion                                       |
| Graticule                   | ★★★★   | 8 x 10cm. No illumination                                          |
| <b>VERTICAL AMPLIFIERS</b>  |        |                                                                    |
| Amplitude range             | ★★★★   | Covers most requirements                                           |
| Frequency response          | ★★★★   | Usable well beyond 35MHz                                           |
| Attenuator accuracy         | ★★★★   | Very accurate on DC                                                |
| Combined functions          | ★★★★   | A and/or B, A+B, A-B, chopped and alternate                        |
| <b>TIMEBASE</b>             |        |                                                                    |
| Sweep modes                 | ★★★★★  | Wide range, incl. delayed                                          |
| Speed range                 | ★★★★★  | 21 ranges 0.5s/cm to 30ns/cm with magnifier                        |
| Triggering                  | ★★★★★  | Equal to best brands                                               |
| Linearity                   | ★★★★   | Better than 3%                                                     |
| <b>OTHER FEATURES</b>       |        |                                                                    |
| X-Y operation, Z modulation | ★★★    | Features found in top range instruments.                           |
| Handbook                    | ★★     | No detailed maintenance details. Does not explain Holdoff function |

RATING KEY    ★    Poor    ★★    Satisfactory    ★★★    Good    ★★★★    Very good    ★★★★★    Excellent



# EQUIPMENT REVIEW

Ron Fisher VK3OM

3 Fairview Avenue, Glen Waverley 3150

## EQUIPMENT REVIEW

### The YAESU FT-230R 2 METRE FM TRANSCEIVER

VHF transceivers have advanced to a remarkable extent over the last few years. The new YAESU FT-230R for instance has 25 watts output, full coverage of the whole two metre band in either five or ten kilohertz steps, plus a microprocessor control system that can do all sorts of remarkable things.

However I always like to go back to the beginning and trace the evolution of the various pieces of equipment that are reviewed. Back in 1971 when most two metre operators were using converted tube type car phones such as the MR-6 or MTR-13, Yaesu introduced the FT-2F. It was around a sixth of the size, weighed only a quarter of the old rigs and had the capability of switching twelve channels (who would ever need 12 channels!). Well that started it, those little transceivers were just irresistible. We all had to have one, and so the two metre boom began. Twelve channels soon gave way to twenty two or more and the cost of crystals could equal the cost of the transceiver. Synthesized transceivers appeared around 1976, the YAESU 200R had 200 channels between 146 and 148MHz. For some reason it met with only limited success, while the multi mode tunable transceivers really took on. The 800 channel FT-227 was probably the most popular YAESU two metre transceiver with the latter RA and RB models incorporating up/down scanning from the microphone. The new FT-230R could perhaps be considered an updated replacement for the 227. While the 227 was about the same overall size as the original FT-2F, the 230R is actually about half the volume of the 227. For good measure throw in twice the power output, ten memories, two VFOs, priority channel checking and full band scanning just to name a few of the features and you can begin to see just what this little rig has to offer. However enough of comparisons, let's look at the FT-203R in detail.



The FT 230 R with the scanning Microphone — note the clear LCD Frequency Readout.

#### THE FT-230R DESIGN FEATURES.

Before we go on to look at the circuit details of the 230, let's see just what it has to offer. As mentioned above, it is extremely compact. The actual dimensions are 150mm wide, 50mm high and 174mm deep. It should fit somewhere even in the most diminutive compact car. The weight is only 1.3kg. The transceiver is supplied with a mobile mounting bracket and a chrome tilt bale for home use. Also supplied is a microphone with scanning buttons and a function lock switch. Perhaps the most appealing feature is the superb LCD frequency readout. It is both large and very readable even at an angle. Of course it is readable with direct sun light in direct contrast to LED displays that disappear under these conditions. At night the background is evenly and brightly illuminated.

The S/output meter is also brightly illuminated through the rear of the translucent

scale. The frequency has five digits and is capable of reading to 100Hz, however as the synthesizer steps in either five or ten kHz steps, the last digit seems rather unnecessary. Probably the reason for its inclusion is that it appears that the whole control system has been taken from the popular FT-290R where of course the last digit is used in the SSB tuning mode. The 230 memory and scanning system is also closely related to the 290R. Ten memories can be programmed and then recalled either by the memory switch or by scanning. When the scanning method is selected, it will pause for five seconds when a busy channel is located, just long enough to decide if you want to hear more or not. If you do it only requires the push of either of the scan or PTT buttons on the microphone to halt the scanning. If you hap-

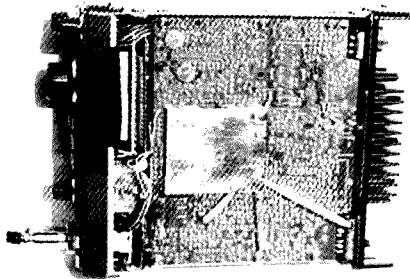
pen to be looking for a clear rather than a busy channel when scanning then a rear panel selector switch will give you this facility.

Any one of the memories can be programmed as a priority channel. If you are expecting a call from a friend on your private frequency, but you would like to listen to the chit chat on the local repeater then it is only necessary to tune the repeater on the main tuning, switch the memory selector to your private frequency, push the F button then the MR/PRI button and the priority channel will be quickly sampled every five seconds. If your friend calls the transceiver will lock onto the priority channel. With the priority checking going on, the first decimal point of the display will blink to indicate this mode of operation. The second decimal

point blinks when a halt occurs during either memory or full band scan operation. It should be noted that once the memories have been selected, they will be held even if the supply voltage is removed from the transceiver. This is due to the inclusion of a lithium cell which YAESU claim has a five year life. Current drain of the memory is rated at only one microamp.

Two separate VFOs are included, the second one being useful if split operation other than 600kHz is required. It can also provide an additional memory quickly selected with the VFO push button.

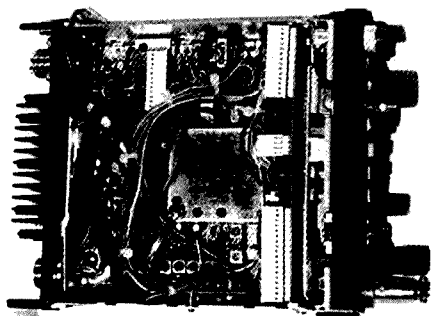
Tuning up and down the band can be done in two ways. The tuning knob has a soft stepping movement, much improved over the old "hack saw" feel of the old FT-227. Tuning as mentioned before is in either 5 or 10kHz steps and I found that the 10kHz steps were the ones most used. Up/Down tuning can be initiated automatically with the microphone scan buttons. A quick jab of one of the buttons will produce a single step while holding the button for two seconds will give a continuous tuning scan that will stop either on signals or clear channels depending on the setting of the rear mounted BUSY-MAN-CLEAR switch.



Inside view of the 230.

#### THE FT-230R CIRCUIT DESCRIPTION

The receiver is a double conversion set up of fairly conventional design. 10.7MHz and 455kHz are used with a 15kHz bandwidth filter at the first IF and a 15 kHz ceramic filter at the second IF frequency. Quite a bit of effort has been expended to produce a clean signal free from cross modulation. As we shall later see this has been quite successful. Relay antenna switching feeds a lowpass filter to a 3SK51-03 RF amplifier. A five section band pass filter which has a steep cut off just outside the band edge keeps unwanted out of band signals well in the background. Audio output of one watt is produced by an IC amplifier driven by a single transistor stage.



Underside view.

The transmitter line up starts at 10.7MHz and is heterodyned to the final transmit frequency via a balanced FET mixer stage. Audio from the microphone is amplified and limited by an IC stage before the 10.7MHz modulator stage. Two driver stages precede the final 25 watt power out-put stage. ALC is produced from a portion of the transmitter out-put and fed back

to a control stage between the transmitter mixer and the first driver.

Of course the heart of a transceiver of this type is the PLL section which provides the frequency control and selection. The operation of this section is of course quite complex and would require a rather lengthy description. If you are lucky enough to acquire an FT-230R, I would suggest you read the PLL circuit description in the instruction book.

The PLL is controlled by a low current drain (1 microamp) 4-bit micro processor. The ROM has been preprogrammed to do all the ingenious things mentioned earlier.

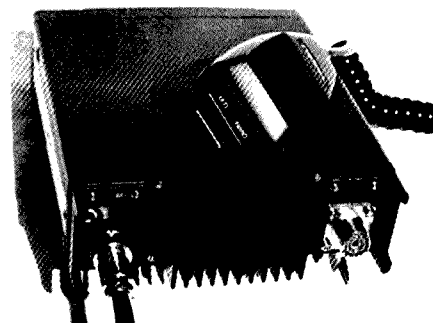
#### THE FT-230R ON THE AIR

We have already covered many of the operational points in the earlier description section. The first thing I discovered when I tried to put the transceiver on the air is that a solid power supply is needed. My five amp supply ran out of steam and I had to resort to a borrowed 10 amp supply. YAESU rate the current drain at 5 amps with 25 watts output but the test unit required 6 amps and delivered 28 watts out-put. If you are going to use the 230 mobile then of course the current drain will not worry you but you might need to watch your connection to the battery. A cigarette lighter plug connection may not be up to the task of supplying the required current.

As received the memory backup battery is switched off. Removal of a small rubber plug from the bottom of the transceiver case gives access to the switch.

The next thing I discovered is that when used as a home station transceiver with the tilt bale installed, the rear of the transceiver rests on the rather sharp ends of the heat sink. If you have a wooden or vinyl topped desk, watch out — they scratch. A couple of self stick rubber pads would fix the problem. Perhaps YAESU might include these in future. With the power supply problem sorted out, the FT-230R performed in a faultless way. Power out-put was 28 watts at 13.8 volts. I then checked out-put at lower voltages to simulate mobile or portable operation with the battery not on charge. At 12.5 volts output was 22 watts and at 11.5 volts out-put was down to 15 watts. Current drain at the lower voltages dropped to 5.4 amps.

Received audio quality was excellent and at no time was an external speaker considered necessary. Audio output was adequate and should be sufficient even in a fairly noisy car. Transmit audio was also good, but reports indicated that the quality became a little harsh when talking close to the microphone. With the mic about 5 to 7cm back, quality was fine. The microphone is well shaped and the scan buttons are easy to handle. With the transceiver used under mobile conditions, the best way to operate is to use the memories and scan from channel to channel either by stepping position to position or by just letting the transceiver find the channel you need.



Rear view shows connectors and adequate heat-sink of the 25-watt final.

The only point of criticism with the receive performance is the limiter action. While testing the transceiver one windy night, I noticed a good deal of intermittent noise on a weak signal. Switching to my normal transceiver, the noise was totally absent. Checking on an HF general coverage receiver identified the noise as a rather harsh power line noise obviously brought on by the windy weather.

I was not able to do any actual checks on sensitivity or quieting as a suitable signal generator was not available at the time. However sensitivity was comparable to other current model FM gear that I use in the shack.

#### SPECIFICATIONS

|                         |                                        |
|-------------------------|----------------------------------------|
| Frequency Coverage:     | 144.00—147.99 MHz                      |
| Synthesizer steps:      | 5/10 or 12.5/25 kHz                    |
| Power Output:           | 25 watts                               |
| Modulation Type:        | Variable Reactance                     |
| Deviation: (max.):      | ± 5 kHz                                |
| Maximum Bandwidth:      | 16 kHz                                 |
| Spurious Emissions:     | —60 dB or better                       |
| Antenna Connector:      | SO-239                                 |
| Output Impedance:       | 50 ohms                                |
| Microphone Impedance:   | 500-600 ohms                           |
| Receiver Type:          | Double Conversion Superheterodyne      |
| First IF:               | 10.7 MHz                               |
| Second IF:              | 455 kHz                                |
| Sensitivity:            | 0.25 $\mu$ V for 12 dB SINAD           |
| Selectivity:            | ± 6 kHz (—60 dB)<br>± 12 kHz (—60 dB)  |
| Audio Output:           | 1.0 watts@ 8 ohms                      |
| Audio Output Impedance: | 8 ohms                                 |
| Power Requirements:     | 13.6 VDC (negative ground)             |
| Current Consumption:    | (approx) TX 5.0A,<br>RX 0.3A (standby) |
| Case Size:              | 150(W) x 50(H)<br>x 174(D) mm          |
| Weight:                 | approx. 1.3 kg.                        |

#### Options

|         |                       |
|---------|-----------------------|
| YM-49   | Speaker/Microphone    |
| FTS-32  | CTCSS Encoder/Decoder |
| FTS-32E | CTCSS Encoder         |

#### THE FT-230R INSTRUCTION BOOK

If you are used to the normal style of Yaesu instruction books, you will be surprised with this one. It is small, measuring only 15 by 21cm. However what it lacks in size, it more than makes up for in quality. Its 52 pages include specifications, front panel controls and switches, rear apron switches and jacks, installation, operation, circuit description, maintenance and alignment and a full parts list. The book is well illustrated with the major components labelled. Provided one has the required test equipment, checking of the alignment would be a straight forward procedure.

Operation of the FT-230R is covered in a complete and precise manner with no sign of Japanese English.

#### CONCLUSION

The FT-230R is a delightful little transceiver. The 25 watt output capability is a worthwhile increase over the more usual 10/12 watt transceiver. While doubling the power makes only a small difference in the received signal at the other end, it could make the difference of just getting into or not into a repeater. The FT-230R is highly recommended. Our test unit was supplied by Bail Electronic Services, 38 Faithful Street, Wangaratta, Victoria 3677. All enquiries regarding price and delivery should be addressed to them.

# EVALUATION AND ON AIR TEST OF THE YAESU FT-230R

Serial No. 2G 050776

| CATEGORY                         | RATING | COMMENTS                                                          |
|----------------------------------|--------|-------------------------------------------------------------------|
| <b>APPEARANCE</b>                |        |                                                                   |
| Packaging                        | ****   | Plastic wrapped. Foam inserts in strong carton.                   |
| Size                             | *****  | The most compact 2m FM mobile transceiver yet seen.               |
| Weight                           | *****  | Only 1.3kg.                                                       |
| External finish                  | ***    | Good with exception of sharp edge at rear of heat sink.           |
| Construction quality             | ****   | Very good quality components and fittings.                        |
| <b>FRONT PANEL</b>               |        |                                                                   |
| Location of controls             | ****   | Considering size of panel all controls well spaced.               |
| Size of knobs                    | ****   | Although small, knobs are easy to use.                            |
| Labelling                        | ***    | Scan position of memory control hard to find.                     |
| Meter                            | ***    | Brightly illuminated. Easy to read.                               |
| VFO knob action                  | ***    | Click stop type action. Smooth action.                            |
| Dial readout                     | *****  | Excellent under all conditions of external lighting.              |
| Digital                          | NA     |                                                                   |
| Analogue                         | ***    | Transmit and receive signal indicators.                           |
| Status indicators                |        |                                                                   |
| <b>REAR PANEL</b>                |        |                                                                   |
| <b>RECEIVER OPERATION</b>        |        |                                                                   |
| VFO stability                    | ****   | Drift did not exceed 250Hz.                                       |
| Memories                         | *****  | Ten memories. Switch or scan selected.                            |
| Sensitivity                      | ****   | Compared well with other top line equipment.                      |
| Noise rejection                  | ..     | Local electrical noise not rejected as well as other receivers.   |
| Squelch action                   | ***    | Smooth action.                                                    |
| 'S' meter                        | ***    | Realistic readings.                                               |
| Signal handling                  | ****   | Handled adjacent channel signals very well.                       |
| Spurious responses               | *****  | None heard.                                                       |
| <b>QUALITY OF RECEIVED AUDIO</b> |        |                                                                   |
| Internal speaker                 | ***    | Clear, undistorted audio.                                         |
| External speaker                 | NA     | Not available. Provision to connect external speaker if required. |
| Headphone output                 | NA     | No provision for headphones.                                      |
| <b>TRANSMIT OPERATION</b>        |        |                                                                   |
| FM output                        | *****  | Excellent for size of unit. (28 watts at 13.8V).                  |
| Audio response                   | ***    | Good quality reports received.                                    |
| Metering                         | ***    | Relative output. Adequate for FM operation.                       |
| Relay noise                      | ****   | Very quiet operation.                                             |
| Cooling                          | ****   | Heat sink did not get too hot even with lengthy transmissions.    |



TRY THIS

## VERSATILE SCHMITT TRIGGER

Compiled by: Ron Cook VK3AFW  
7 Dallas Avenue, Oakleigh 3168.

How many readers know that the 555 IC can be used for applications other than as an oscillator or a monostable flip-flop? One extra application is as a Schmitt trigger, which is a device that switches its output from high to low

at different input levels. This is illustrated in Fig. 1. An ordinary squaring circuit switches from high to low at the same voltage as it switches from low to high.

A Schmitt trigger introduces hysteresis. For the circuit in Fig. 2 if  $V_{CC} = 10.0V$  then increasing the voltage on pins 2, 6 up to 6.6 volts has no effect on the output which sits at 10.0V. Increasing the input to 6.7 volts causes the output to fall to 0V. Further increases to 10V have no effect. Reducing the input has no effect until it falls to 3.3V whereupon the output rises very rapidly to 10.0V. For the AC coupled circuit in Fig. 2 signals less than 3.3V peak-to-peak will not switch the output. Signals greater than 3.3V peak-to-peak will give a square wave output of the same frequency. Values for R1, R2 might

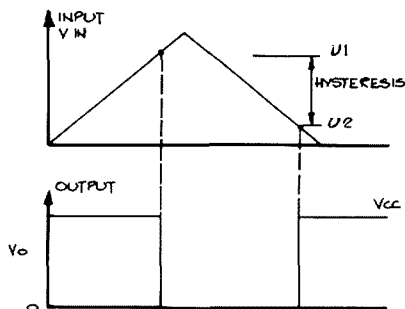


Fig. 1: Operation of Schmitt Trigger.

be 10KΩ and C1 180 nF for audio frequency signals.

### APPLICATIONS?

It can be used to square up signals of arbitrary shape with significant noise yet not be responsive to the noise. In RTTY systems it could follow the frequency discriminator and give additional noise reduction and signal level translation. For computer systems where problems are experienced with noise on tape recordings a Schmitt trigger can eliminate the noise.

AR

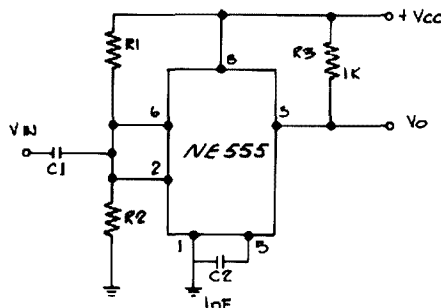
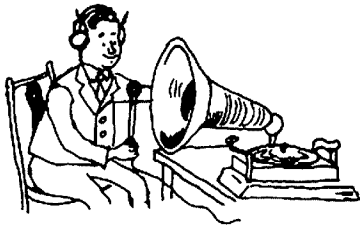


Fig. 2: Circuit of Schmitt Trigger  
 $U_1 = \frac{2}{3} V_{CC}$   
 $U_2 = \frac{1}{3} V_{CC}$



# NOVICE NOTES

Compiled by Ron Cook, VK3AFW.  
7 Dallas Avenue, Oakleigh, 3166.

## CHOOSING A FILTER CAPACITOR.

The Novice can save a useful amount of money as well as having some old fashioned fun by building his own power supply. Once the capabilities of a DC supply exceed those for a CB rig the cost rises faster than a space shuttle. This article discusses one of the mysteries of power supply design, choosing the filter capacitor.

It is assumed that the novice is intending to build a supply similar to that shown in Fig 1. Firstly some comments and general discussion about the circuit to refresh a few memories.

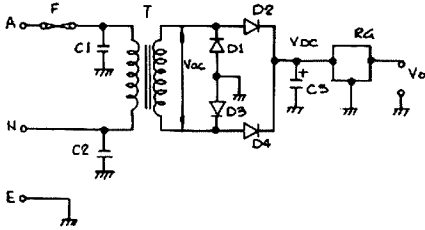


Fig 1: Circuit of a simple power supply.  
(Refer to text for component values).

The fuse F is placed in the active line and is chosen so that it will blow if a fault occurs. It must not blow due to normal switch-on transients or normal load currents. A 1A rating should be an appropriate size for a 5A DC load from a transformer with an 18V RMS secondary. Many pieces of equipment do not appreciate spikes caused by, say, motors starting (your refrigerator perhaps?) or your neighbour's welder, to name two examples.

Two small capacitors across the line to ground will help reduce line-borne hash and transients. Note that you MUST have a proper mains earth properly connected or the chassis will rise to 120V AC and give you a nasty surprise. C1 and C2 are the interference bypasses. A value of 1nF is suggested; too large a value will represent a hazard and might draw too much mains current. The voltage rating should be 600V DC.

The choice of transformers is more limited. We must choose one suitable for use with a capacitive input filter and with a secondary current rating greater than the DC load current. The AC secondary voltage is determined as follows. Add the DC output voltage to the minimum drop across the regulator and add the drop across the diodes on full load and also the peak-to-peak ripple across C3. Multiply the result by 0.71. For a supply giving 13.8V out a secondary voltage of 18V is common. The ripple across C3,  $v$ , is chosen by the designer and is in the range 1 to 5 volts for this type of supply.

The diodes, D1 to D4, form a bridge rectifier and can be bought assembled in that

configuration. They have a hard job, as we shall see, so be generous and choose ones with a current rating in excess of the DC load.

The regulator may be a single IC or, for higher currents, a composite unit such as Denzil Roden's "Even Simpler Regulator".

Now let us turn to C3. How does it operate? The diodes rectify the AC signal to give the half-sine waveform shown in Fig 2. If there is no load C3 will charge up to the peak voltage. For very tiny (microamp) loads the DC voltage is equal to the peak AC voltage which is 1.414 times the transformer's RMS voltage. For such small currents the diode volt drop is negligible. As soon as an appreciable load (1A say) is connected a different waveform occurs. The load draws energy all the time and the capacitor is the source of energy. C3 is charged to the peak voltage (or very near if the diodes are not near their rating) by the conducting diodes. This occurs each half cycle and the diodes conduct in alternate half cycles, D1, D4 then D2, D3. The conduction time,  $t_2$ , is quite short as the diodes only conduct when the capacitor voltage is less than the instantaneous rectified transformer voltage. When the diodes are not conducting C3 sustains the load current. This may be 90% of the time! In Fig 2 the voltage drop across the rectifier has been neglected although in practice it may reach 2V.

The operation is the same of course with the capacitor receiving a large pulse of charge when the rectifier output exceeds the voltage across C3. C3 then discharges until the next half-cycle when the rectifier output again is sufficient to charge C3 again. The action of the capacitor is analogous to that of a flywheel on an engine receiving energy in pulses and then smoothly giving up a portion of its total to the load. The capacitor "fills in" the valleys in the rectifier waveform and gives a smoother or filtered output.

The capacitor filter system is hard on the diodes because they are only given a short time to supply the energy. The average diode current is the same as the load current but the peak current may be 10 times the DC load current. Thus the repetitive surge rating of the diodes needs to be greater than this factor to give some safety margin. The voltage rating is not so onerous — twice the peak voltage plus a margin. 100V would be fine for an 18V transformer. Modern diodes have been designed to cope with such harsh service so for a 5A DC supply diodes rated at 6 to 10A should be satisfactory. We digress.

Earlier mention was made of the ripple voltage  $v$ . This is shown in Fig 2. It is the voltage that C3 loses in its effort to keep the load current flowing. If  $v$  is made large the current rating of the diodes may be relaxed but

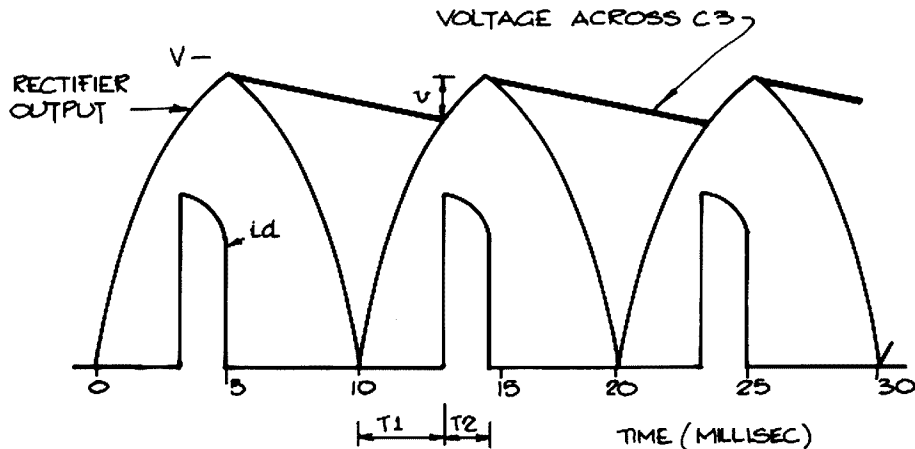


Fig 2: Power Supply Waveforms.

The rectified voltage output, without filtering, consists of a series of half-sine waves. C3 charges to the peak voltage,  $V$ , during time interval  $t_2$ . It then discharges ( $5+t_1$ ) milliseconds losing  $v$  volts. Diodes D1, D4 and D2, D3 alternately carry the current pulse  $I_d$  to charge C3.

## COMPETITION WINNER

The lucky winner of the FLUKE 8022B Digital Multimeter, kindly donated by the Australian Distributors of FLUKE products, Elmeasco Instruments Pty Ltd, is:

A J Parr, VK4AJA  
127 Hyde Street,  
North Rockhampton 4701

Congratulations to the winner and his magnificent prize has been forwarded to him by Registered Post.

The Publications Committee wishes to thank all members who submitted entries and particularly the donor of the prize, Elmeasco Instruments Pty Ltd.

The correct answers to the problem were Q1 = 1.509V, Q2 = 1.598V.

Comment: Thus the average meter will give an error of nearly 6% due to loading which is twice the accuracy usually claimed. An instrument with a 10 Mohm input resistance gives negligible error, as the correct voltage is 1.600V.

*DON'T FORGET COMPETITION No 4 — Refer October AMATEUR RADIO Page 8.*

*SUBMIT YOUR ENTRY NOW — YOU COULD BE A WINNER.*



Maurice Johnson, VK3ADJ, Manager of Elmeasco Instruments Pty Ltd, Melbourne, drawing the winning entry.

## HEARD ISLAND COMPETITION

The VK6 DX CHASERS CLUB, who are organising the Radio Component of the Heard Island Expedition '83, invite your participation in a unique Contest.

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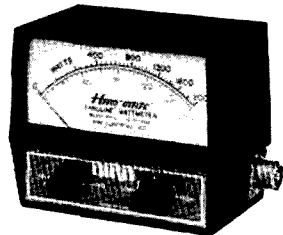
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RESULTS: The winner will be advised by Certified Mail and the result will be published in the first available AMATEUR RADIO after the return of the logs from Heard Island.

It is proposed that VK0HI will operate for 5 to 6 weeks. The Antarctic summer has around 16 hours of daylight, two stations could be operating, and there will be three operators.

OUR AIM IS FOR AT LEAST 50,000 CONTACTS.

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the transformer may need a higher secondary voltage and the regulator has to work harder to keep the ripple out of the output. Ah yes, life wasn't meant to be easy. If C3 is made smaller then  $v$  will increase if the load is the same. A larger C3 makes the ripple voltage less, but remember the poor diodes.

If we examine the waveforms it is possible to derive an exact formula for the size of C3. We also can obtain a simple formula that overestimates the value by 10 to 20%. Because of the manufacturing tolerance on electrolytic capacitors (-0, +50% is typical) and the consequent limited range of values, great accuracy in calculation does not seem warranted.

Fig 2 shows us that in each half cycle C3 is discharging for the whole period except for time  $t_2$ . Now  $t_2$  is 20% or less of the half cycle period so we will assume, for simplicity, that C3 discharges in a half-cycle period (10mS) and is instantaneously recharged. If we let the load current be I amps then we can use two simple formulae.

$$Q = It \dots \dots \dots (1)$$

$$Q = CV \dots \dots \dots (2)$$

The charge given up by C3 is calculated from (1),  $Q = I \times 10\text{mS}$ ,  $Q$  being in coulomb. From (2) we have the value of C3 as C Farad and the change in voltage  $V$  is  $v$  our peak-to-peak ripple voltage.

Thus our formula is

$$C = I/(100v)$$

So if I is 5 amps and assuming for the moment that  $v = 4.6\text{V}$  then

$$C = 5/(100 \times 4.6)$$

$$= 0.0109 \text{ Farad}$$

So a value of 10,000  $\mu\text{F}$  would be an appropriate choice for C3. We are left only with the problem of the value of  $v$ .

If we see that a transformer of suitable current rating with an output voltage of 18V RMS is available then knowing that this has been used before for 13.8V supplies we might as well start with that and make another choice if we find from our sums that it is unsuitable.

We calculate the peak transformer output.

$$V = 1.41 \times 18 = 25.4\text{V}$$

If our mains voltage sometimes dips by 10% then we should take 90% of the above figure, 22.9V. The rectifier drop should be accounted for. Let us assume it is 2V.

Thus the peak voltage on C3 is taken to be 22.9-2 = 20.9V.

The minimum voltage to which C3 can fall is the sum of the output voltage and the minimum regulator drop. Assuming the latter to be 2.5V the minimum voltage on C3 is 13.8+2.5 = 16.3V. Thus  $v = 20.9-16.3 = 4.6\text{V}$ . By a strange coincidence this is the voltage we used in our calculation for C3. Of course you would calculate  $v$  first and then C using the formulae given.

The voltage rating of C3 must be greater than 25.4V. A 30V rating would be the minimum and 35 would be quite adequate. Higher voltages would not be necessary.

The capacitor has to carry quite a heavy AC current and because of the fast turn-on times of the diodes a low inductance is desirable. Some diodes cause switching transient audible into the VHF region so the speed at which they switch can be imagined. In computer supplies where 5V at many amps is a common requirement special capacitors with high ripple current capacity and low internal inductance are used. As Fig 2 shows the diode current has lots of harmonics of 100 Hz and these should be bypassed to ground through the lowest reactance possible. Remember the diodes and don't use a capacitor 10 times bigger than necessary.

Two or more capacitors in parallel to make up the required value will give lower impedance in most cases.

73 de VK3AFW.



# A COMPUTER LOG FOR THE AMATEUR

L. J. Forrest, VK2VUC  
Hursville, 2220

My original intention in joining the "Computer Brigade" was to have a computerised log. This article describes the present system and program.

Because of limited finance (I'm married) I could not afford elaborate disc drives and printers. So at once I had a problem — how to recall data from tape and utilize a 32k machine to the best advantage. Most log programmes I had seen used too much memory in storing all details for all contacts. The solution seemed to be to write a "log recall" programme whereby callsign and log entry number only are entered and recalled.

The programme listed here is the result. I estimate that 1,000 calls can be stored on a 16k machine. The programme is written for the Commodore 80 and 40 column machines but I am sure it can be easily modified for other systems. For example in line 10 the heart shape is the same as CLS or clear screen (shift CLR/Home on the Commodore 4016 ... Tech. Ed).

System 80 and TRS80 users may find problems with lines 115 to 125 as well. These lines give even spacing and may be deleted if a new line 120 is used. The following changes apply.

```
10 PRINT CLS
120 PRINT T; A$
```

Data is entered in lines 140 to 9519 in the format shown for lines.

With this programme you can recall any individual callsign, all callsigns in a given country (e.g. type VK), or a given State (e.g. type VK2) or recall every entry by typing LOG. It also allows recall by log entry prefixed by L. For example to recall log entry 75 type L75.

I am sure there will be many modifications to suit individual needs. HAVE FUN.

#### Tech Editors Note:

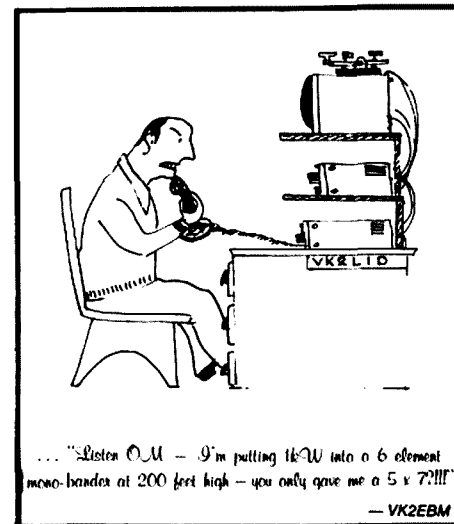
The programme can be used in contests with data in the form callsign band/number band/number, callsign band/number etc.

e.g. VK2VUC 80/599 007 21/599 086, VK9ZZ 28/579 105.

```
10 PRINT "♥"
20 DIM A$(1000)
30 PRINT
40 INPUT "CALL REQUIRED"; C$
50 PRINT:PRINT
60 LET L=LEN(C$)
70 T=0
80 READ A$
90 IF A$="END" THEN 9530
95 IF C$="LOG" THEN 110
100 IF LEFT$(A$,L)=C$ THEN 110
105 IF RIGHT$(A$,L) <> C$ THEN 80
110 T=T+1
115 IF T<10 THEN PRINT SPC(2)T;A$,
120 IF T>9 AND T<100 THEN PRINT SPC(1)T;A$,
125 IF T>99 THEN PRINT SPC(0)T;A$,
130 GOTO 80
140 DATA VK2VUC L1, VK2PFO L2, ZL1BXY L3
141 DATA WB7WUU L4, VK2PFC L5, VK2VUC L6
9520 DATAEND
9530 RESTORE:GOTO 30
```



from "THE PROPAGATOR" June '82



— VK2EBM

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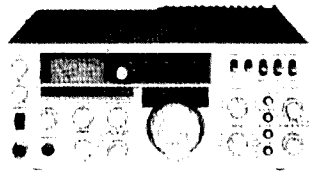
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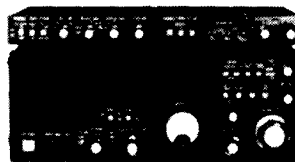
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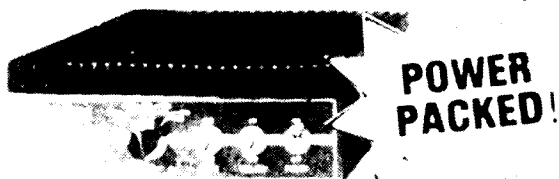
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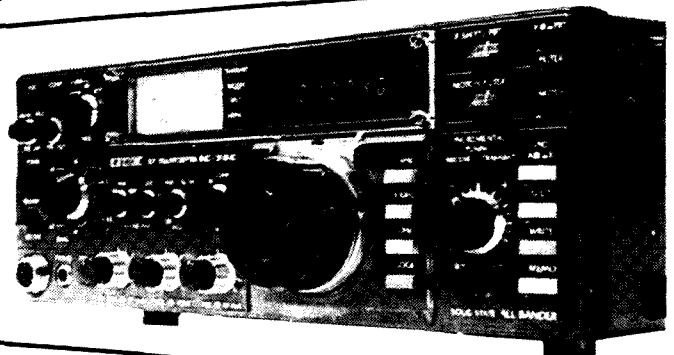
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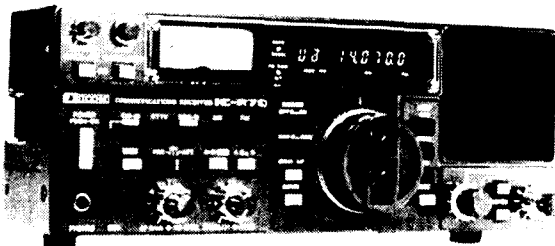
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Over the past six months we have seen reports of various DXpeditions in DX Bulletins and other publications. These receive a large amount of original information, but sadly, after reading a number of these, 50% of what they print is wrong. In some cases it is pure conjecture, and even downright misrepresentation. With so much incorrect information one wonders if these publications serve any useful purpose.



## HEARD ISLAND - UPDATE



Compiled by: Hugh VK6FS

VK6 DX Chasers Club

Since the news first broke in AR, May '82 issue, that the VK6 DX Chasers Club members were investigating the possibility of bringing VK0 Heard Island on line, much talk has ensued. Some of the comments have been good and encouraging, but others have been mean and could even have been described as downright vicious.

Members of the group have repeatedly been subject to deliberate interference, (it certainly was deliberate as it would follow when we moved frequency) also innuendo has been resorted to by some people to try and infer something underhand was happening when we, in self defence, resorted to sudden frequency shifts to a pre-arranged plan, and also used reverse sidebands.

Innuendo was resorted to in order to suggest we were risking the safety of our expedition members by having the radio operators at Atlas Cove while the rest were miles away climbing Big Ben. That one can be answered by the fact that one of the radio operators is also a qualified Medical Doctor. Another qualified Medical Doctor is a member of the mountaineering party. I wonder if two Medical Doctors and a Medical Researcher would be sufficient numbers to stage the first ever Medical Conference to be held on Heard Island?

Our ship has received on air criticism. For Pete's sake, how much more do we need in safety factor? Anaconda II has twice circum-navigated the world. Even this year it participated in the Sydney to Rio de Janeiro Yacht Race and sailed round Cape Horn going down to Lat. 65° south looking for extra wind. We should be able to assume that by now Skipper Grubic would know a little of blue water sailing.

It has been suggested that Anaconda II will be battling the weather all the way from Fremantle (Perth) to Heard Island. Never has it been the intention to sail direct. The original, and present, itinerary is Fremantle North, then west, then south with the favourable trade winds to Amsterdam and St Paul Islands then further south to Kerguelen Island, then onto the last 200 nautical miles to Heard Island itself. Return will be direct to Fremantle with a tail wind. (Albeit a little brisk at times).

For safety the ship is equipped with satellite navigation, Omega, radar and two off-shore computers. Also radio access to OTC and other world wide coastal radio stations. If she should lose the 98ft main mast there is still the 74ft mizzen. Should that also go she has the auxiliary motor and as a last resort the VK0HI radio masts could be rigged for a jury sail, with a little bit of initiative by the mechanical engineer in the radio party.

Again the inference is "we know not what we do" and that certain radio organisations should tell us about the birds and bees. "Where

angels fear to tread"!!!!!! Right from the outset the HEARD ISLAND EXPEDITION 1983 has been a registered business under Australian Corporate Law. Accountants have been appointed to keep an eye on the till and a firm of solicitors to attend to all matters legal.

Amateur Radio has been our outlet for reporting progress. However, due to the many steps necessary to obtain various permits, licences, equipment, etc, we have stated from the beginning that we would not publish anything that has not been confirmed in writing from the relevant authority, agent or sponsor.

The expedition has had the best advisers from its inception including many who have been to Heard Is. To drop names there are Professor Graeme Budd who has been there six or seven times including wintering over. Dr Phillip Law PhD, Director of Antarctic Division for 10 years. Warwick Deacock, Director of the Explorers Fund and a member of the 64/65 Patanella expedition. Two members of the expedition have been to Casey Base and one to Macquarie Island.

Insurance cover will protect the personnel, equipment and the overall operation from Heard Island. Some manufacturers would be horrified if they only knew what suitability tests we have run on their products. These tests may make an amusing article for AR at some future date when all the tumult and shouting dies down.

A very brief resume of the qualifications of the expedition:- William Blunt, *Architect, mountaineer and photographer*, Co-leader and Convenor; Dr Ross Vining, *Medical researcher, mountaineer, photographer, co-leader*; Meg Thornton, *Architect, mountaineer and photographer*; Alasdair McGregor, *Artist with extensive wilderness experience, will conduct resource inventory as requested by Australian Heritage Commission*; Jonathon Chester, *Professional photographer and mountaineer, participated in 1980 Australian Expedition to Annapurna III in the Himalayas*; Martin Hendy, *Surveyor and mountaineer, 1981 season at Casey Base*; Dr Richard Priddy, *Mountaineer and 1981 season at Casey Base as Medical Doctor*; David Shaw, *Electronics Technical Officer, amateur radio operator and 1980 season at Macquarie Island*; Alan Fisher, *Mechanical Engineer, USA amateur radio operator licenced 28 years*; Dr Charles Brady, *Medical Doctor, USA amateur radio operator, has specialised in Sports Medicine*.

The Department of Science and Technology have a standard five page list of compliances and questions that are to be submitted by groups or individuals before permission is granted for persons wishing to visit Heard Island, our submission from the expedition giving all the requested details became a book of 38 A4 size pages.

The Secretary of the Department of Science and Technology, in a letter to the Heard Island Expedition has given approval for the visit as

planned and the reserved call of VK0HI has been issued to Dave, VK3DHF, the leader of the DXers making the trip.

The Heard Island Expedition have chosen a Patron, Sir Edmund Hillary, K.B.E. who was the first man to climb the summit of Mount Everest. Some thirty years later the Heard Island Mountaineers will attempt to be the second group to reach the summit of Big Ben, which is an active volcano.

We believe this is the first time ever that amateurs have pooled resources with people of other interests to bring on one of the rarest and most inaccessible of Islands. We believe that in the 4-6 weeks that will be available, our operators will be able to allow for having to stand off the Island for up to a week waiting for the weather to abate sufficiently to be able to transfer men and equipment by rubber boat, through surf, on to an open beach with complete safety.

We have also realised that OLD SOL is not going to behave himself just because amateurs worldwide want to contact VK0HI. Solar flares could knock great holes in propagation for days on end. So therefore, we assume we may be able to get at least three weeks operating under good conditions in our 4-6 weeks stay in this Antarctic paradise.

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WIA VK4 Division ..... \$100

Misprint:

- (1) VK2 Division quoted as \$200 (Oct. AR) should have read \$800.
- (2) VK6CT (Oct. AR) should read VS6CT.

### ADDITIONAL DONATIONS RECEIVED BY THE VK6 DIVISION

Acadiana OX Assoc. \*\$100, Mexico DX Club \$9, N4WW \*\$50, VK1LF \$5, VK1MM \$10, Anon \$50, VK3NNH \$10, VK3YL \$25, VK4NUN \$15, VK5WO \$50, VK6ZGA \$10, VK7 Anon, \$5, WIEW \*\$5.

### ADDITIONAL LIST OF ASSOCIATE MEMBERS

L50545, VK CW QRPP Club, VK's 2AYF, BIX, DBH, DYP, KKK, 01, OC, 3AET, AGH, AXQ, BFN, BH, DBQ, KAR, YIP, YXK, 4AGW, BTX, CB, KSF, WIA, YX, 5AHP, ASZ, WD, 6ALD, ALJ, AWJ, CU, DQ, JP, KG, KKI, RU, YD, ZGA and W4FRU.

NOTES

1. \*Denotes US currency.
2. !Denotes Canadian currency.
3. The list is correct as at the 24th September, 1982.



# HOW'S DX

Ken McLachlan, VK3AH

Box 39, Mooroolbark 3138

From listening around the bands, apparently very few VK amateurs took the opportunity of using the AX prefix, which was issued to celebrate the Commonwealth Games being held in Brisbane. The demand for it was definitely there when it was used, as anyone operating with the AX prefix would verify.

One VK, when asked by a VE in mid-September why the VK's had changed their prefix, uttered the statement that he wasn't quite sure for what reason it was being used though he had heard it and thought that it was a new call area, probably in Africa. The thought had not crossed his mind that it was an Australian prefix.

Perhaps the amateur is so close to the communications scene that he cannot "see the wood for the trees". It is common knowledge that people only want to see or hear what they want, but the permission to use the AX prefix as an option was widely promulgated in AR and on Divisional broadcasts prior to the commencement date in mid-August.

Use of the prefix, particularly when the bands seemed to be "dead", brought stations in areas generally not the easiest to work, out of hibernation and into competitive activity. At times one felt like a DXpeditioner and to ease the QRM had to resort to working through call areas so everyone had a fair chance.

Twenty metres, normally renowned for reliability, excelled itself with wide openings spread across Europe on the short path, interspersed with openings at the same time into the South American Continent. Problems arose as to priorities at this OTH, and the Europeans won, due to the fact that they were more persistent with louder signals and it was the least point of resistance to battle through the QRM, especially in the early hours of the morning.

The adage, that certain prefixes are worth a five kW linear, was proved correct, as, with very little on air transmission time, nearly one hundred countries were entered in the AX3AH log. Unfortunately none were new.

The chores of QSLing are yet to be tackled when time permits, due to other commitments.

## MORE ACTIVITY?

Will Andy, VK9ZA, be heard more often now that a Power Supply for the TS120S has been landed on Willis Island? This "homebrew" supply, with a professional "bought in the shop" appearance and performance, was designed and built by a group of enthusiastic friends including Alf VK3BOZ, Peter VK3FR, Dave VK3DHF, Peter VK3AZQ and Mark McKenzie.

This unsolicited gift from the sky will alleviate the daily backbreaking duties of "handling" the battery back and forth to the generator room for charging and allow more time to concentrate on adding countries to the log.

Andy is due to leave the island in mid-December. All QSL's via Gill VK6YL, direct or via the Bureau.

## GLORIOSO

This rarer island in the Indian Ocean was activated on at least 10, 15 and 20 metres by FROGGL/G. All QSL's to PO Box 386, St. Pierre, Reunion Island. To avoid a repetition of lost and mislaid mail that has occurred previously in this area, it would be prudent not to mention any connection with amateur radio on the envelopes.

## CARD TURNS UP

One VK operator may have the multiple card and IRC receiving QSL managers disadvantaged. On not receiving a card and knowing of others that had made numerous attempts throughout the year, this operator made it known on every conceivable net at his disposal that some positive action would be made to the QSL Managers Society. Magically a card was received within the week. Perhaps this forthright positive approach should be adopted more frequently to achieve a better percentage of returns.

## BOUVET

The licences issued for the trip proposed last year have not been renewed. It is now apparent that if any legitimate 3Y prefix will be heard this Australian summer it will only be from a team who have dropped off for routine maintenance of the Automatic Weather Beacon whilst en route to the Antarctic and it will not be a DX-pedition as originally planned.

## BRILLE DX SERVICE

A service to blind DXers is provided by Phil AF0H. Phil lost his eyesight some years back, gained an interest in radio and obtained a licence. The DXing in which he was interested had many problems which would not occur to a sighted person. The Braille DX Service was formed and he has arranged for a monthly tape service which will give current DX info, DXpeditions and QSL information on either an audio or braille format.

For further information for yourself or a DX friend contact Phil Scovell, AF0H, 8347 W. Sixth Avenue, Lakewood, CO 80215. USA. A self-addressed envelope with covering US postage or equivalent would be appreciated.

## WELL-KNOWN QSL MANAGER

### — WA3HUP

THE BEST QSL MANAGER IN THE BUSINESS!! This is the claim of Father Dave, CE0AE, and there would be few DXers who have had dealings with this lady who would dispute this fact, and Father Dave should know. He is only one of the fifty-plus amateurs Mary Ann Crider, WA3HUP — QSL Manager of the rare ones, has in her stable.

This lady received her Novice licence in mid-1967. Within eight months she upgraded to a General Class Licence. Three hundred-plus DXCC countries worked and confirmed the challenge of obtaining the unrestricted Advanced Class Licence was beaten in 1976, and Mary Ann had all those frequencies that contained elusive call signs, which would mean a new country for her DXCC tally, at her disposal. Mary Ann's present country tally is 314/318 which places her on the ARRL Honour Roll. In all, the countries worked and confirmed are 332.

Mary Ann, shortly after obtaining her licence, thought she may be able to give a number of amateurs, who were located in much-wanted and remote areas, more operating time by doing their QSLing chores for them. Encouragement was forthcoming from Bob, W1YRC, who was famous in his own right as an expedient processor of cards for numerous stations worldwide.

The first station Mary Ann took over the paperwork responsibility for was Jim, CR6GA,

as he gave Angola as a new country to so many. The release from the chore of checking his log allowed him much more on-air time and consequently this allowed CR6 to come off the "top" of the much-wanted stations list for many. Jim is now using the call ZS6ADO and he still has the same Manager.

The phrase "QSL via WA3HUP" has been used by 52 stations, some now QRT, but the cards still come and the logs are still available for checking against. Mary Ann recalls that the station that required the most QSLing was 8Z4A which was activated in late 1978. Some 40,800 QSO's were made and so far 30,000 cards have been received and replied to. The maximum output was around 350 cards per day on this station as the duties of the other stations that she managed could not be neglected.

It is not necessary to have too vivid an imagination to visualise the amount of work involved in such an undertaking. The mind boggles at the sorting, checking and writing involved without the stamping and the personalised note that accompanies many of the return cards.



Mary Ann, WA3HUP

Mary Ann has no hesitation in being able to recall the greatest thrill of her Amateur life. It was her first contact with His Majesty, King Hussein, JY1, and she describes it in her own words as "I was so excited and happy, just like a child getting her first doll". More excitement was to come as Mary Ann and her late OM Charlie, W3GE were invited by His Majesty to be his guests in Jordan. In her own words again, "Meeting JY1 was the most exciting thing in our life and the excitement is, and will always be there".

Charlie and Mary Ann made two more trips to JY-land prior to Charlie's untimely death in late 1980. Since that time, Mary Ann accompanied by her daughter Diane has returned to Amman for a visit. Mary Ann's JY8XG call has been activated by her during her visits.

This lively, energetic lady, apart from her other interests of philately where her speciality is in the collection of stamps bearing animal

and floral motifs, spends considerable time on the air, chatting with her friends worldwide and making new ones each day, and her closest friend Ruth Anna, WB3CQN, joins her at weekends on the bands.

Both ladies are members of ALARA and WARO being sponsored by VK YL's and Mary Ann feels a great satisfaction in "helping others whenever I am able".

One favourite saying of this very affable lady is "We all need someone and I am so blessed to have so many someone's throughout the world".

Mary Ann Crider, WA3HUP, QSL Manager extraordinaire, we are so glad to have someone like you.

## BURMA

Everyone is aware that the cards for XZ5A and XZ9A were not recognised by the ARRL and WIA DXCC points. A more recent station that is operational out of Rangoon is DF8MP/XZ. Whether it will be acceptable to the ARRL DXCC committee will be proved when and if copies of the authorisation are presented.

Those that have XZ5A and XZ9A cards needn't despair as both are acceptable by CQ in its Awards programme.

## MT ATHOS

Activity is probable in the near future. This rare one may appear around late December or early January on both CW and SSB, being operated by a combined SV/W group.

## EX "G" NET

An ex "G" net which is orientated towards VK participation is carried on each Saturday at 0500 UTC on 14.346 MHz. This net is an offshoot of the worldwide net for "radio operators born in the UK and domiciled abroad" that is scheduled at 1900 UTC each Sunday on the same frequency.

## MELLISH REEF

Wondering what the "voice" belonged to on the last Mellish jaunt or the face behind the "key" during the short stay on Willis? The photo reproduced below submitted by VK3DHT from a transparency by DJ9ZB tells all.

## PENGUIN PARADE

The 1982/83 Antarctic Expedition members are sailing this month from Hobart. All members, including four ladies, have undergone considerable training and briefing in Melbourne. Included in the group is an amateur, Peter, VK0AP, who will be stationed at Macquarie Island. Peter, as well as operating on the HF bands, will operate six metres from the island due to the thoughtfulness and generosity of such amateurs as Gil, VK3AUI, Kevin, VK3AUQ, and Lionel, VK3NM.



Peter VK0AC and Gil VK3AUI

These amateurs have contributed equipment and freely given of their expertise and time in planning this venture, which will enable many VKs, as well as overseas amateurs, to conduct experiments and study propagation whilst at the same time notching up another DX Country on "SIX".

The loan equipment that Peter will be running on this VHF Band is a FT680 transceiver (VK3NM), LUNAR amplifier (VK3AUI & VK3NM) and a 4 element 6 metre Werner Wulf beam (VK3NM). (Brackets indicate the source of the equipment.) A programmed identification keyer using an EPROM, with the compliments of Ken, VK3GC, has been designed on similar lines to the unit which has been manufactured especially for VK0HI by the same four gentlemen.

Congratulations to all concerned on your foresight and unselfish approach in letting the amateur fraternity take advantage of Peter's location and participate in the chance of working a rare VK prefix. Activation of VK0 Heard and VK0 Macquarie will turn the world's Amateurs HF and VHF antennae towards "down under". A great start for 1983, WORLD COMMUNICATIONS YEAR.

QSLing for VK0AP will be handled by Peter, VK3FR, 29 Woodcrest Road, Vermont 3133.

## COCOS KEELING

Neil, VK6NE, if everything went according to his meticulous planning, should have finished his DX jaunt on Cocos Keeling, where he was the guest of Frank, VK9NYG, and his XYL, prior to their departure from the island after a two year tour of duty. Neil did not go to Cocos Keeling armed with a Linear and key as was rumoured in overseas circles.

Christmas Island should be his home until the 10th of this month, then it is plain holidaying for another three weeks in South East Asia.

ALL QSL's to VK6NE, QTHR.

## NEW QSL ARRANGEMENTS

Bill, VK3DWJ, has volunteered to assist Chris, ZL4OY/A, by taking over ALL the QSL-ing duties. Any station that has not received a card for this operation as yet, please forward direct or via the Bureau.

The mail address is Bill Johnson, Post Office, Skipton, Victoria, 3361 and Bill's young daughter has just started collecting stamps as a hobby. This rearrangement by Chris is going to make a lot of people very happy.

On behalf of all DXers, thanks are extended to Chris for the decision he has made and also to Bill for the mammoth chore he has voluntarily undertaken.

## SAVING MONEY

Jan and Jay, W6GO/K6HHD, have recently been operating as FO0JO and FO0J, when they took a well-earned rest from their publication of the W6GO/K6HHD QSL Manager list. The editorial of the 31st Edition mentions that they would like nominations for the "Best QSLer" and the "Worst QSLer" so that they may be passed on to their readers to evaluate for themselves their chances of receiving the pasteboard back.

They ask for a few details with the reason on the nominations and they will not identify unless permission is given. Any VK who would like to participate may send it to my QTH and all information will be sent to them at the end of November along with my own list.

## EAST MALAYSIA

Jim, VK9NS and Kirsti, VK9NL operating as 9M8JS/9M8NL made 10,500 QSO's on all bands. According to Jim's note, 80% of the operation was on CW. QSL route is to either Kirsti or Jim, PO Box 90, Norfolk Island, 2899, with SAE and postage.

Jim also mentioned that his return home to Norfolk Island, travel arrangements would be via Hobart. Quoting from Jim's aerogramme dated the 29th August '82, quote: "... to travel home via Hobart to tie up the contract for vessel for Heard Island. HIDXA is running pretty close to schedule (about two weeks late) which commenced in March this year (prior to Dayton et al) after finally aborting attempts last season.

"The vessel CHEYMES II is ideally suited for the trip and has 37 Antarctic trips to its credit — although not under the present skipper. We were featured on Australian TV a couple of days ago. (FAME AT LAST.) Help is still needed in any form." Unquote.

## ST. PETER & ST. PAUL ROCKS

Whilst the majority of VK's missed working this tiny atoll, many due to the QRM caused by a number of inconsiderates who decided that if they couldn't hear the operators, nobody else would.



L to R: EA8AK, DJ9ZB, VK2BJL, VK3DHT and the guy that got them there, Jack Binder, KB7NW, skipper of the "Banyandah".

The expedition was plagued by problems from the onset, culminating in being subjected to very high seas when reaching the atoll, which precluded the group from getting the large generator ashore.



Stuart VK5MS awaiting Bouvet

One of the few VK's that had a success story was VK5MS, who required two DXCC Countries to complete a "full hand". On receiving a phone call from a member of the VK6 DX Chasers Club, that alerted him to the whereabouts of the much-wanted station and the cacophonous pile-up.

The contact was made, and when the confirmation arrives there is one other VK that will only require Bouvet to complete a "full hand".

#### EMERGENCIES

Amateurs who scan the bands in search of a new country to add to their DXCC list occasionally come across MAYDAY stations who are in need of urgent assistance. This particularly applies to Maritime Mobile stations, as maybe the amateur frequencies are the only ones at his disposal.

By chance, I was fortunate to come across a Handbook for Radiotelephone Ship Operators. This 48-page publication, including an insert on DISTRESS PROCEDURE, provides very interesting reading although it is intended as a regulations handbook for those wishing to pass the examination for Radiotelephone Ship Station Operators (Restricted standard).

Documentation of maritime specific frequencies and schedules of Coast Station listening watch periods are also included. I have made a personal addition to my copy by placing the charge free number of the "COASTWATCH" Coastal Surveillance Centre in Canberra telephone number and the emergency Police number of all the Australian states added as per the 1982/83 Call Book. This publication has been permanently located within easy reach of the operating position.

For those interested in knowing the correct procedure to adopt if they are confronted by the handling of an emergency, copies should be obtainable from the Australian Government Publishing Service or Department of Communications, State and District Offices at a cost of \$1.40 plus postage.

#### NEW PREFIX

The prefix 5Y4 is being used by Kenya for a period of six weeks. One operator, Doyle 5Y4DE, will be operational during this period mostly around 14.195 - 14.205 MHz at 1430 UTC. Doyle advises that he will then revert to 5Z4DE and should be very active for the next two years. QSL route is via KA4S.

#### OVERSEAS VISITORS

Norbett, DF6FK, accompanied by his XYL, Judith, DL2ZAD, will be visiting the eastern states for the next few weeks. Occasional use of the DX bands will be made whilst renewing many on-air friendships with "eyeball QSO's".

Both Norbett and Judith hope to make many more friends whilst operational on various repeaters using the calls VK3DTD and VK3DSA respectively.

#### HEARD AND WORKED ON THE NOVICE BANDS

21 MHz  
4X4KP, 4Z40K, 6D5XMT, 9J2BO (W6ORD), 9M8JS, C21NI, CR9AK (JA1MIN), EAGNV, F08GW, H8LGS, HP1ANE, T22NS, T2AGD (SM3CX), T30AC (WB6FBN), T300B, VKOAN, VK0DX, VS5HG.

28 MHz  
3B808 (W5BDX), 4Z40K, 9J2BO, AH3AC (Johnston Island), C21NI, FK8KAB, FWOAG (SM3CX), HSTANG, KC6SX (Caroline Island), LX1KW, T2AGD (SM3CX), T30AC (WB6FBN), VKOAN, VK0DX, YJ80B.

#### HEARD AND WORKED ON THE WEST COAST

1.8 MHz  
AS6U, G3JMJ.

3.5 MHz CW  
3D2DX\*, AA6AA, CN2AQ, FWOAG\*, KC6SX(JA8OW), KV4CI, N7AM, T21AGD\*, T30CB\*, W0ZV, W5ADZ, W7CPK, YB5AES.

3.5 MHz SSB  
9U1TL, H44SH

7 MHz CW  
3D2DX\*, 9M8JS (VK9NS), AH6BK, C30LM (EA3BKZ), CO2HT, CR9M, FP8AA, FP8HL, FROGGL/G, FR7BP (WOAX), FWOAG, H3JEI, KC6WS (AD1S), LX2FT, NOZ/OU2 (KOLST), ON5UK, T21AGD\*, T30CB\*, T12PZ, VQ9XX (K6OZL), W50DD/C6A (W50DD), YV1AOT.

7 MHz SSB  
5NBARY (Box 439, Kano, Nigeria), 6Y5IC, 9X5SL, HC1GA, HZ1AB, JX1CY, PJ9GG, UP9CP.

14 MHz CW  
3B808, 3D20X\*, 4K1H, 9M8JS (VK9NS), CT1AAL, E15DI, FWOAG\*, KC6WS (AD1S), ON6TW/LX(ON6TW), PY6HA, T21AGD\*, T30CB\*, VQ9GD (KA6MKY), W50DD/C6A, YQ9XX (K6OZL), ZB2EO, ZB2SO.

21 MHz CW  
9M8NL (VK9NL), F08EW, XT2AW (KN1DPS).

21 MHz SSB  
EC8SO, FH0FO, FROGGL/G.

28 MHz SSB  
HZ1AB, UM8MCW, W0B0CQ, YK1A0.

\*Denotes QSL via SM3CX.

( ) QSL Route.

#### HEARD AND WORKED ON THE EAST COAST

1.8 MHz CW  
A6EU.

1.8 MHz SSB  
ZL2BFU, ZL4FB.

14 MHz  
14/CW/3D20X, 14/CW/4K1D, 14/CW/9M20K, 14/CW/1S0AGP, 14/CW/1S0PEC, 14/CW/JT1BH, 14/CW/JT1KA1, 14/CW/OH0XX, 14/CW/TI2DL, 14/CW/UA1CY, 14/CW/UL7ECH, 14/CW/VP2MM, 14/CW/YV1BVJ.

14 MHz  
14/SSB/388FL, 14/SSB/3D2DB (Box 372 Suva), 14/SSB/4K0A (UA1AD0), 14/SSB/4X4YM, 14/SSB/4Z40L, 14/SSB/6Y5IC (G3XTJ), 14/SSB/8P6AA, 14/SSB/8P6CC, 14/SSB/8Q7AV, 14/SSB/9M2EE, 14/SSB/A35WM (DJ1WM), 14/SSB/A4XHZ, 14/SSB/AGXAW, 14/SSB/A71AD (Box 4747 Doha Qatar), 14/SSB/AH2AR, 14/SSB/C21DM (Box 316 Nauru), 14/SSB/C21EF, 14/SSB/C21NI, 14/SSB/C30MK (EA3WZ), 14/SSB/C53F, 14/SSB/EA8AJU, 14/SSB/F6FIC/TZ, 14/SSB/FC9UC, 14/SSB/FD8HL, 14/SSB/FH0FO, 14/SSB/FO0CAN(YL), 14/SSB/FP8AA (K2RW), 14/SSB/FR7CG/T, 14/SSB/FROHIF (WA4VDE), 14/SSB/FWOAG, 14/SSB/GW40MF, 14/SSB/HH55B, 14/SSB/HK3YH, 14/SSB/HK4BVR, 14/SSB/HLOB, 14/SSB/HL1AHD, 14/SSB/HR1RBM (HR2 Buro), 14/SSB/HS0HS, 14/SSB/HS1BV, 14/SSB/HS6AM0, 14/SSB/HZ1TA (OE3YLK), 14/SSB/IT9AJA, 14/SSB/IT9PSG, 14/SSB/IT9VQC, 14/SSB/J6LB, 14/SSB/J73P0, 14/SSB/J88AR, 14/SSB/JY3ZH (OJ9ZB), 14/SSB/KA2CC, 14/SSB/KC6SXC (JA7SDV), 14/SSB/KH2AP, 14/SSB/KH6LW/KKH7, 14/SSB/KX6DA, 14/SSB/KX6OM, 14/SSB/LX1KE, 14/SSB/OX3JF, 14/SSB/P29JP (WD4PEQ), 14/SSB/PJ9AA, 14/SSB/PJ9EE, 14/SSB/PY3CB, 14/SSB/PZ1PK, 14/SSB/T30BP (Box 486), 14/SSB/T30CB (SM3CX), 14/SSB/T30DB, 14/SSB/T32AF (WH6AIF), 14/SSB/TA2BK, 14/SSB/TG9FU, 14/SSB/TI2CCC, 14/SSB/TI2J, 14/SSB/TI2JVA, 14/SSB/TI2JVA/T15, 14/SSB/TI2RI, 14/SSB/TL8GE, 14/SSB/UG6LO, 14/SSB/UK1PG0, 14/SSB/V3KT, 14/SSB/V01CA, 14/SSB/V01EJ, 14/SSB/VP9CP, 14/SSB/VR6TC, 14/SSB/V550D, 14/SSB/V55DX, 14/SSB/V55MS, 14/SSB/V56CT (KB9N), 14/SSB/VU9AU, 14/SSB/VU9BBJ, 14/SSB/VZ9A, 14/SSB/Z99 (YL), 14/SSB/YB9VA, 14/SSB/Y16MV, 14/SSB/ZB2EO, 14/SSB/ZF1GC (VE4XN), 14/SSB/ZK2KH (DJ9KH), 14/SSB/ZL4POC (ZL4KI).

21 MHz  
21/CW/N5MF, 21/CW/W9SC, 21/CW/WH2A0G.

21 MHz  
21/SSB/3D2DX (SM3CX), 21/SSB/4N4TN, 21/SSB/5H3DM, 21/SSB/5W1EL (DJ1WM), 21/SSB/5W1KE (DJ9KH), 21/SSB/8Q7AZ, 21/SSB/9U5JM (WA3VOE), 21/SSB/A71AD (Box 4747 Doha Qatar), 21/SSB/A92P, 21/SSB/FH0FO, 21/SSB/F0MGA, 21/SSB/FROGGL/G, 21/SSB/I0SC0, 21/SSB/I0WGL, 21/SSB/IT9ZWG, 21/SSB/KC6IN, 21/SSB/OK2BJR, 21/SSB/T300B, 21/SSB/T32AF, 21/SSB/UJ8JCT, 21/SSB/U7DX.

28 MHz  
28/SSB/A71AD (Box 4747 Doha Qatar).

\*Call No change to 9 until Dec '82 for "Asian Games".

#### CW LISTENING WITH ERIC L30042

28 MHz  
DL3RD, JA, P29NPL, UA0KJ, UB5IQF, W7PEW, ZL1ATW.

21 MHz  
AH2G, CT4TK, OU1REX, DX1F, EA6KZ, EA7DCZ, FK8CE, F08FW, HC1VU, H51ALV, KA5DX, KL7VZ, T30AT, U8BI, VE2HQ, NL7J, YB4YV, YJ8LT, Z56BY1, 8J1RL, 9H1CH, 9M8NL.

14 MHz  
CO2PY, CR9M, CT2QN, E14DMR, OH2SX/CT3, EA1J0, EKOK, FC8TT, FKOAF, F08FW, H80/DL1GK, HK1JJ, KP4P, KV4BQ, OZ2AGR, UC2CFA, UK2BBX, UK0CAW, VQ9CI, XE1JTR, YVJANT, ZB2EO, 4S7CF, 5B4LP, 6Y5RA, 9M8JS, 9M8NL.

10 MHz  
DL5KAW, F9YZ, FG7BG, GA4TZ, GW3AHN, HB9ANX, JA1BFN, OE9SLH, PAORUY, SU1EC, VE3HLS, VP2MIX, YB5AES, DL2GG/YV5.

7 MHz  
W50DD/C6A, CT2EV, EA2IA, EKOK, E19Q, F6CPO, F08FW, FWOAG, HB9AH, G130R, HK3YH, H51ALV, LZ2RB, KV4CI, OK1KJ, T2AGD, UB5IIB, UC2SLO, U050WN, YU3DKR, YV1AOT, 302RW, 4X4VL, 6Y50Z, 9M8JS.

3.5 MHz  
JA, OH2PM, SM3VE, UK2PCR, UW3BF, UK9FER, UL7NAR, UR2QD, W3CV, 5Z4CS.

#### QSLs RECEIVED DURING SEPT 1982

C21NI, FK8AL, F00WA, IJ7ET, PY4BUA, T30BG, VE1ZZ-VE2CD-VE5JS-VE5XU (all 10 MHz), P7JARI, VQ9XX, N5RM/KH0, KM2DXU (10 MHz), YB4GF, ZB2EO, ZK1DX, ZK2TA, VP2MIX (10 MHz), Z5SYN, 6Y5HN, 9V1TX.

#### QSL MANAGERS

A35JL (K9AUB), C30LM (EA3BKZ), C30MK (EA3WZ), C30ML (EA3BKZ), C30ND, (EA3BKZ), C30OH (DL8OH), C31ZE (DF9SP), CN8CU (WA3HUP), CS5SRL (CT1AHUJ), EJ22VJT (G3ZQS), EKOK (UA9OBA), EP2TY (JR3WRG), FOFLR/FC (DF2YJ), FOFWW (OE31BW), FP8AA (K2RW), FR7BP (WOAX), HL9AZ (AD8F), HR1JSH (WD6W0N), HS1AMB (LA5NM), JY3ZH (DJ9ZB), KC6SX (JA8OW), KC6WS (AD1S), KH6LW/KH7 (KH6JEB), K4YT/5N0 (W2TK), NOZ/OU2 (WB3IET), N6DPH/OU2 (WB3IET), OY1KH (W1JTJ), S1AB (DL2NO), S1AH (DL2NO), S1AS (DL2NO), T2AGD (SM3CX), T21AGD (SM3CX), T30CB (SM3CX), TG9EV (IOWDX), TL8GE (F6FYD), UA02DA (UA3AEL), V2AZE (G3EBR), V3TV (G3ATK), VK9ZA (VK6YL), VP2MO (KA4BOT), VP2MM (AB1U), VS6CT (KB9N), VQ9GD (KA6MKY), W50DD/C6A (W50DD), XT2AW (KN1DPS), ZF1GC (VE4XN), ZF2CZ (WA3UFI), 4N4TN (YU4HA), 5H3DM (G3NXX), 6W8DY (VE4SK), 6Y5IC (G3XTJ), 8P6KY (K2QIE), 9M8NL (VK9NL), 9M8JS (VK9NS), 9Q5VT (K4YT).

Managers shown in brackets.

#### THANKS:

Thanks are extended to overseas amateurs including such calls as EA1VG, G3NBC, JY5HH, ON5NT and WA3HUP for their assistance. Overseas publications including CO, THE DX NEWS SHEET, LONG SKIP, RADCOM, QSL MANAGERS LIST, QST and WORLD RADIO which have been read with interest. Contributions from VK amateurs including VKs 2DZZ, PS, 3FR, UX, DET, DFD, DKK, PBA, 4AIX, 6AJW, HD, IH, IT, NE and YL and Eric, L30042.



# EMTRONICS

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## AUSTRALIA's only full line distributor

### SPECIAL ANNOUNCEMENT:

Since our recent appointment as Sydney's only authorised ICOM & DAIWA dealer, EMTRONICS has now become the one and only Australian "FULL LINE" distributor of all amateur radio products. We now supply: ICOM, YAESU, KENWOOD, AZDEN, FDK, DAIWA, DRAKE, CUBIC, DENTRON, ROBOT, HAL, INFO-TECH, LUNAR, ETO-ALPHA, DATONG, KENPRO, WELZ, TOKYO HY-POWER, and many more. Contact us for any specialised product or technical advice. If we don't stock your special product, we will try to get it for you!



|                                 |       |
|---------------------------------|-------|
| IC740 HF Transceiver            | \$*   |
| ICA720A HF Deluxe Transceiver   | \$*   |
| IC730 HF Multi Mode Transceiver | \$*   |
| IC25A 2M FM Mobile 25W          | \$446 |
| IC4A 70CM Hand Held 1.5W        | \$249 |
| IC2A 2M Hand Held 1.5W          | \$309 |
| IC290 2M FM/SSB/CW Mobile       | \$599 |
| IC251A 2M Multi Mode 10W        | \$649 |
| IC505 6M All Mode 3/10W         | \$*   |

\*WE WILL TRY TO MEET THE PRICE OF THE OPPOSITION!



|                          |        |
|--------------------------|--------|
| TS930S W/O Ani Tuner     | \$1399 |
| TS930S & Auto Ani Tuner  | \$1595 |
| TS830S                   | \$959  |
| TS530S                   | \$749  |
| R-1000 HF Receiver       | \$489  |
| R-800 HF Receiver        | \$360  |
| 0-81 Grid Dip Oscillator | \$99   |
| HC-10 Digital Clock      | \$99   |



|                            |       |
|----------------------------|-------|
| FT707                      | \$*   |
| FT102                      | \$*   |
| FT107 OMS superseded model | na    |
| FRG 7700 w/o memory        | \$499 |
| FRG 7700 with memory       | \$625 |

\*WE WILL TRY TO MEET THE PRICE OF THE OPPOSITION.



|                            |       |
|----------------------------|-------|
| PCS-3000 (plus \$8 post)   | \$395 |
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| PCS-300 Leather case       | \$29  |
| PCS-3000 Ext. mike         | \$25  |
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| PCS-2600 (plus \$8 post)   | \$290 |



|                             |       |
|-----------------------------|-------|
| Multi 750A 2M All mode      | \$425 |
| Expander-430, 70cm All Mode | \$339 |
| Emtron 470 SUHF CB H/T      | \$299 |

### J.R.C.

|                      |        |
|----------------------|--------|
| NRO-515 (+ \$15 Fri) | \$1599 |
| NOH-518 Memory       | \$299  |
| HVA-515 Speaker      | \$65   |
| CFL-260 600 Hz       | \$59   |
| CFL-230 300 Hz       | \$79   |
| NSO-515 (+ \$15 Fri) | \$1620 |
| NOB-515 P/Supply     | \$209  |

### THIS MONTH'S SPECIALS:

|                                       |        |        |
|---------------------------------------|--------|--------|
| Emtron GLA100 kW HF Linear            | \$540  | \$390  |
| Info Tech M500 with 12" Monitor       | \$1799 | \$1199 |
| Kenwood 430, 50W UHF Linear           | \$229  | \$139  |
| Azden PSS-2800 10M FM Transceiver     | \$360  | \$330  |
| Spoken 250 HF Transistorised 250W PEP | \$225  | \$179  |

SEND 55c FOR LATEST CATALOGUE

### DATONG

|                               |       |
|-------------------------------|-------|
| 0-70 Tutot (plus \$6.50 post) | \$145 |
| ASP (plus \$6.50 post)        | \$235 |
| FL-2 (plus \$6.50 post)       | \$255 |
| AD-270 (plus \$6.50 post)     | \$125 |
| AD-370 (plus \$6.50 post)     | \$185 |
| VLF (plus \$4 post)           | \$99  |
| Codecall (plus \$6.50 post)   | \$99  |
| RFA (plus \$6.50 post)        | \$99  |
| OF MODEL (plus \$6.50 post)   | \$270 |

### RTTY EQUIPMENT

|                                      |        |
|--------------------------------------|--------|
| HAL DS 3100 ASR                      | \$3150 |
| HAL DS 3100 w/MSD 3100 ASR           | \$3742 |
| HAL CT 2100 Comm. Terminal           | \$1235 |
| HAL KB 2100 Keyboard for CT 2100     | \$255  |
| Telereader CWR-885 E. Comm. Terminal | \$895  |
| Telereader CWR-670 E. Receive Only   | \$447  |
| Robot 800 Communications Terminal    | \$900  |
| Info Tech M500 Comm. Terminal        | \$1400 |
| C Itoh Model 8510 Printer            | \$819  |
| KG-12N 12" Green Screen Monitor      | \$258  |

WRITE FOR COLOUR BROCHURE

WHEN YOU ARE READY FOR A NEW HF, VHF, OR UHF POWER AMPLIFIER COME TO EMTRONICS — THE RF POWERHOUSE.



### AUSTRALIA'S BEST HANDHELD!

## AZDEN PCS-300

— the standard for comparison  
— the performance of this transceiver cannot be matched with any similar handheld 2M, FM transceiver on the market today.

# \$299

WRITE FOR  
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### THE BEST ON THE MARKET!



## AZDEN PCS-3000 \$395 MICROCOMPUTER 2M FM TRANSCEIVER

- 8 mHz freq. cover, incl. CAP/MARS BUILT IN
- Musical tone accomp. keyboard entries
- Pushbutton freq. control from mike or panel
- 8 Channel memory with instant memory recall
- Programmable band scan
- 25 Watt output \* Mike has volume/squelch control



WRITE FOR  
FULL SPECS  
OR SEE OUR  
CATALOGUE

### SPECIALS FOR THIS MONTH ANTENNAS AND ROTATORS

|                                                          |       |
|----------------------------------------------------------|-------|
| TET HB 33 AP<br>(3 element tribander)                    | \$312 |
| KR 400 Rotator                                           | \$149 |
|                                                          | \$481 |
|                                                          | \$400 |
| Special package deal<br>TET 340<br>(4 element tribander) | \$346 |
| KR 400 Rotator                                           | \$148 |
|                                                          | \$495 |
|                                                          | \$421 |
| Special package deal<br>TET 35C<br>(5 element tribander) | \$429 |
| KR 400 Rotator                                           | \$149 |
|                                                          | \$578 |
|                                                          | \$499 |

### ROLL YOUR OWN

|                                                                                                                                                                                                        |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| SKT-300 Antenna tuner. 300W 10-80m coax & random wire, all parts except box & wiring                                                                                                                   | \$49    |
| SKT-1200 antenna tuner. 1.2 kW, 10-160m coax & random wire, all parts except box & wiring                                                                                                              | \$99    |
| MIZUHO VFO-5 This unit can be used as local OSC. In a direct conversion receiver or as a VFO in a transmitter or transceiver together with an SG-9 above. It consists of OSC, buffer, amplifier and RL | \$35    |
| MIZUHO VFO-7, VFO or QRP transmitter                                                                                                                                                                   | \$35    |
| MIZUHO QP-7, 7 mHz TX QRP kit                                                                                                                                                                          | \$28    |
| MIZUHO QP-21, 21 mHz TX QRP kit                                                                                                                                                                        | \$28    |
| MIZUHO QP-50, 50 mHz TX QRP kit                                                                                                                                                                        | \$29.50 |
| MIZUHO MOD 1 Modulator kit                                                                                                                                                                             | \$26    |

Variable capacitors, coils, roller inductors, high volt inductors, torroid cores, antenna tuners and lunar kits.

All band antenna ..... \$53.00

TRANSMISSION LINES  
CERAMIC INSULATORS

### EXCITING NEW ANTENNA TUNER EMTRON EAT-300



MARINE — AMATEUR — COMMERCIAL  
APPLICATIONS  
THE BEST 300W ANTENNA TUNER ON THE  
MARKET. THE FINEST AMERICAN  
COMPONENTS GIVE YOU QUALITY  
PERFORMANCE AND SATISFACTION.

NOW  
\$149

ATTENTION SWL! Two new code converters released by Telereader! The most sophisticated CWR 670E. CW/RTTY/ASCII converter at \$447, and the all new CWR 610 code master-CW/RTTY at only \$249. Now tune into hidden frequencies with your receiver, code converter and your TV set. Get a free "World Press Services" handbook with every purchase. Now is the time to start monitoring the hidden signals — world press, embassies, Interpol, stock market, spies, pirates etc. Write for full details.

W01112

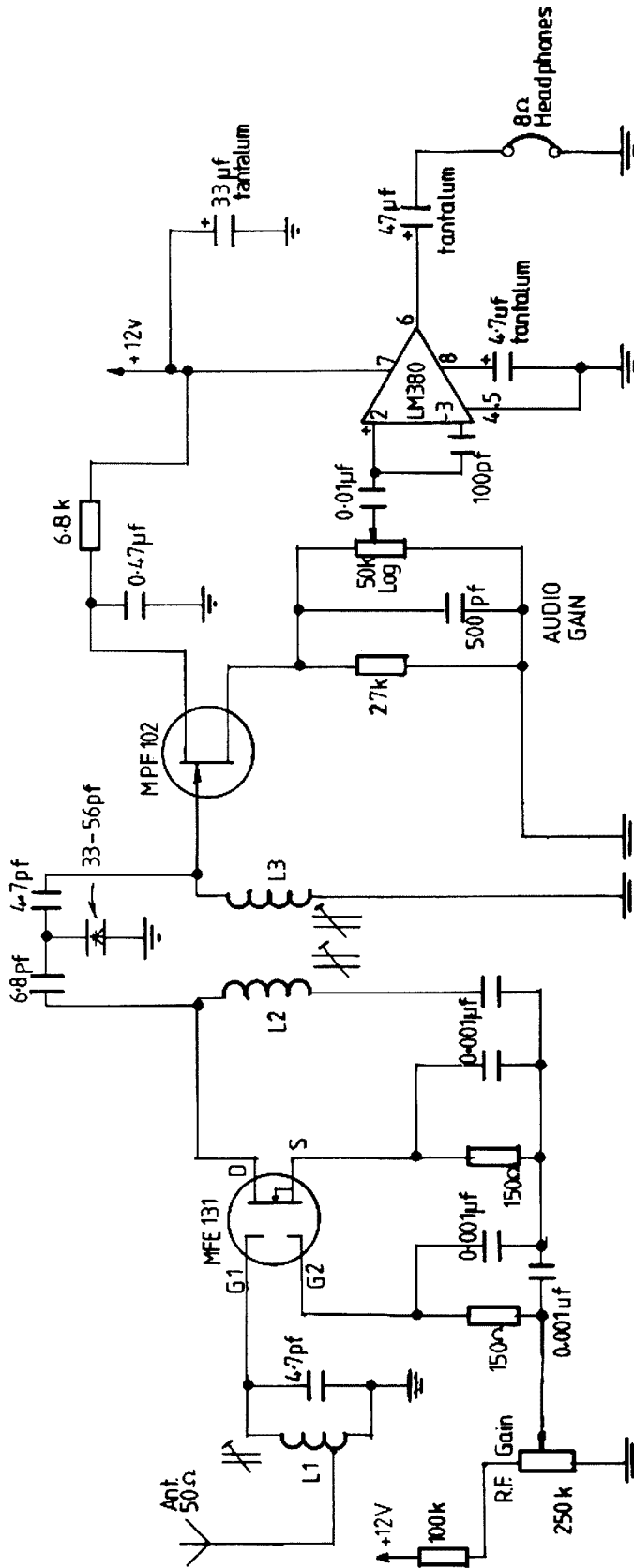


# 144.250 MHz Fox-Hunting Sniffer



From "Gateway" February 1982

Bandwidth increased by decreasing valve or Bandwidth decreased by increasing valve. Antenna is usually 3 element beam.



## COIL DATA

- L1: 5 turns, 22 B & S tinned copper wire spaced over 10 mm, tap at 2 turns from cold end.
- L2 & L3: 6½ turns, 22 B & S enamelled wire, spaced over 10 mm.
- L1 is wound anticlockwise up the former. (Neosid 722/1 for all formers.)

L2 & L3 are wound clockwise and coils are spaced ½ in. apart inside double shield can Neosid 7300.

The start of each coil is the "cold" or "earthy" end. All slugs are F29 type ferrite.

AR



# Tasmania's Youngest Amateur

Jim Linton VK3VKC/VK3PC

4 Ansett Cres., Forest Hill 3131

Tasmania's and possibly Australia's present youngest licensed Amateur is 11-year-old David Lyneham, VK7NEP of Kingston.

After being introduced to Amateur Radio by Doug Parish VK7AZ, David and his mate Matthew Fletcher, 10, settled down to the work ahead in gaining CW proficiency, theory and regulations knowledge.

David passed all three sections of the Novice exam at the last Hobart examination; however Matthew missed out on the theory paper.

But the friendly rivalry between the boys has seen Matthew keep up his study with the aim of passing the theory exam this month, and taking away David's title of being VK7's youngest Amateur.

David and Matthew have been heard on the Novice bands putting VK7NEP to good use on both phone and CW.

While it may be a little early in this world of rapid change, David says he hopes to "get a job in electronics" after leaving school.

In the meantime he's keeping up the study and CW practice for the day when he can sit for the AOCF exam.

## HOW IT ALL BEGAN

About 12 months ago Doug was approached by an organisation called "Explorers Unlimited", which encourages children to take up hobbies and all sorts of outdoor activities.

Being an Amateur Radio operator he was asked if he could teach a few boys morse code and Doug soon found himself with a class of four.

Two of the boys were only interested in learning the code for the boy scouts, but David and Matthew were bitten by the Amateur Radio bug while in Doug's shack.

As Doug explained: "They saw my gear and became a little intrigued and wanted to go a little bit further than just learning morse code."

"After teaching them code I got stuck into the theory with them."

Doug says he used an electronic keyer to teach the boys and made sure they could copy 5wpm before letting them touch a key themselves.

This method proved very successful because both boys, says Doug, got 100 per cent for their morse code exam.

David had a slight prior interest in electricity and had wanted to do something with electronics.

"He was really an excellent pupil. I got him a copy of Understanding Amateur Radio, and made sure he had a thorough grasp of that," said Doug.

"He consequently built his own power supply for his FT707 and I just supervised."

"David really learnt his stuff on the practical side."

Doug said Matthew wasn't quite as advanced with the theory, but he has regularly been popping into the shack and aims to tackle the November exam and get a pass in theory.

It was the first time Doug had coached anyone for their Amateur ticket and he says it was a learning experience for himself as well.

He's been licensed since 1947 and after a stint in the Navy he was seconded to the Army as a signals instructor.

Doug says "I found teaching the boys enjoyable and learnt a little bit myself."

"Being totally blind I hadn't fiddled with transistors and I had to do so to keep in front of the boys."

"Everything we talked about was done practically."

"We got a handful of resistors, batteries, meters, transistors and so on."

"We switched transistors, altered the base, worked out the Beta and things like that."

"Doing it practically as well as explaining the theory, it really registered in the boys' minds."

Doug says he's convinced that if other boys and girls of primary school age are exposed to our hobby many more would be on air under their own calls.

David and Matthew are really enthusiastic and, due to the efforts of Doug, now have a good basic fundamental grasp of electronics.

*Are they that capable at the age of 10 and 11 of getting their full ticket?*

Doug replied without hesitation: "I tell you what, I'd like to be as sure of winning Tatts as I would of them getting the AOCF if they had the opportunity of sitting the exam."

However it looks as if they'll have to wait a few years yet because of the current minimum AOCF age limit of 15 years.

It's interesting to note that possibly Australia's youngest-ever full-call holder passed her ticket in 1935.

The Wireless Institute journal 'Amateur Radio' reported in its April 1935 edition that a Miss McKenzie, aged 12, daughter of VK4GK, had just obtained her AOCF.

Her results were, the article said: "Ex-empiliary, and a pattern for all."

"Sending, 98 per cent, Receiving, 90 per cent, Regs., 70 per cent, Theory, 78 per cent."

## MORE YOUNG AMATEURS FOR TASMANIA?

Peter Dowd VK7PR hopes to develop a bigger Amateur Radio involvement in Tasmania's schools.

He's a teacher at Newtown High School and for a trial next year he'll be conducting an electronics course which includes morse to 5wpm.

Peter says the course will be an elective topic on the school's syllabus.

Newtown High has about 700 boys aged 13-16.

Peter Dowd said: "During the year there'll be three semesters of 12 weeks on the new electronics course."

"After that I hope to start a radio club at the school."

The Newtown High boys will be visiting Amateur shacks and will build their own code oscillators.

Peter said: "One major thing to be taught is



David and Matthew tune into the Novice Bands. Photo courtesy: Mercury-Hobart

the operating procedure and the traditional decorum of the Amateur Radio Service."

This was designed to break any bad habits picked up by experience with CB radio.

The boys who show a greater interest and ability will be given encouragement to go on and get their Novice ticket.

Peter says he would be glad to hear from any other teacher in Tasmania who would also like to adopt a similar electronics course in their school.

## LONGEVITY

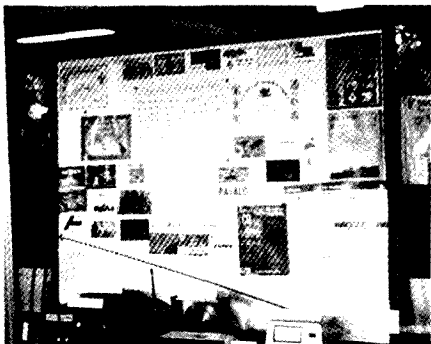
The Horse and Mule live 30 Years  
And nothing know of Wines or Beers,  
That Goat and Sheep at 20 Die  
And never taste a Scotch or Rye,  
The Cow drinks water by the Ton  
and at 18 Years is mostly done,  
Without the aid of Rum or Gin  
The Dog at 15 cashes in,  
The Cat in milk and water soaks  
And then in 12 short years it croaks,  
The modest, sober, bone-dry Hen  
Lays eggs for nogs then dies at 10,  
All animals are strictly dry  
They sinless live, then swiftly die,  
But Sinful, Ginful, Rum-soaked Men  
Survive for Three Score Years and 10,  
And some of us — a Mighty Few  
Keep drinking till we're 92.

—From "The Clubman" Aug '82

# NHULUNBUY — The Green Oasis

Richard Hand VK8KRD  
Box 211, Nhulunbuy, Gove, 5797 N.T.

Recently Nhulunbuy on the Gove Peninsula celebrated its tenth anniversary and as part of the celebrations an Amateur Radio display was held in the town square.



Display of Awards and Cards

One of the most isolated places in Australia is the town of Nhulunbuy, situated on the Gove Peninsula, 650 kilometres due east of Darwin and, as the crow flies, some 2850 kilometres north-north east of Sydney. Set on the shores of the Arafura Sea, the small mining town with a community of just over 4,000 is a green oasis in the harsh country of the Arnhem Land Aboriginal Reserve.

It is possible to reach Nhulunbuy by four-wheel-drive vehicle along a 780 kilometre track through the bush from Katherine, for a few months during the dry season. Ships and barges regularly call at Gove with supplies and the two domestic airlines, TAA and Ansett, provide scheduled flights to Darwin and Cairns.

In 1964 Swiss Aluminium (Australia) Pty. Limited and Gove Alumina Limited, a consortium of seven major Australian companies, created Nabalco Pty. Limited, the

company which manages one of the largest single mining enterprises in Australia. The bauxite treatment plant at Gove produces over a million tonnes of alumina a year, which is exported to various countries around the world. Bauxite is also exported at the rate of two million tonnes each year.

Nhulunbuy, which recently celebrated the tenth anniversary of its incorporation as a town (the third largest in the Northern Territory), is complete with the amenities found in other centres. With five sports ovals, nine hole golf course, and Olympic size swimming pool, squash and tennis courts, volley-ball and basket-ball courts there is every opportunity for those who are sports-minded.

Speedway and motorcycle tracks can be found just a few kilometres beyond the residential area; go another five or six kilometres and one will find ranges for pistol, rifle and shotgun. A boat club, a fishing club, a surf club . . . and more; over 60 separate sporting and social clubs in this one town! And amateur radio also plays a part in recreational activities.

## AMATEUR ACTIVITY

Amateur radio has played a significant part in the history and development of the Gove Peninsula area. A radio club was established in the nineteen sixties by the late "Tubby Vale" under the call sign VK8UG, located at the Eldo Tracking Station, which closed down in 1970.

The first resident amateur of Nhulunbuy was Keith VK8KG who ceased operation in late 1975 and is now ZL1AMF.



Andy VK8AC operating the display equipment.

Six of the seven resident amateurs of Nhulunbuy I to r: Richard, VK8KRD, Terry VK8NTT, Darell VK8DH, BOB VK5XZ/8, Andy VK8AC and Harry VK8NHR.

When Nhulunbuy's telephone and telegraph communications were disrupted at Darwin by Cyclone Tracy in December 1974, VK8KG passed many important messages to the outside world.

Andy VK8AC, who remembers the days prior to the establishment of the town, will be returning from the community in the near future to VK1. It is partly due to Andy's encouragement that the amateur population has grown to the present level. There are currently seven active amateurs and several prospective candidates resident in Nhulunbuy.

Melville Bay is a popular stopover for visiting maritime mobile operators.

In conjunction with Nhulunbuy's tenth anniversary celebrations a display was held in the town square to show various aspects of amateur radio.



## How long an Amateur?

From Fort Dodge Amateur Radio Club (By WOSH)

Have you ever listened to a QSO on a repeater or on HF and had a pretty good idea, a good betting chance, that the op. speaking had not been an amateur for long? What gives you the best clue — procedure used or vocabulary used?

It's my contention that procedure is fairly easy to learn and that it is the vocabulary — the common usage that is changing on the amateur bands before our very ears.

Many times, in listening to the repeaters particularly, or on HF, I have a real good notion that the amateur has not been

licensed very long . . . or has picked up some lingo from another source of two-way radio in the past.

The problem is — how does one avoid sounding like a past CBer if there is no one to advise on the kind of buzz phrases that "give it away"? And isn't it quite possible that such vocabulary usage promotes itself . . . that operators today can hear, on the amateur bands, what they think is common usage, and blend what they hear into what they use as "amateur slang" without knowing that what they heard was not in use on the amateur bands before the loss of 11 metres. And who is to say what is "amateur radio terminology" and what isn't anyway?

What follows is my opinion of some of

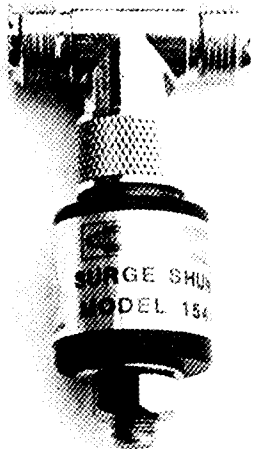
the comments you may hear on 146 MHz and elsewhere that tends to "give it away" as far as I am concerned. These phrases were not heard on the amateur bands (at least not by me) prior to the 11 metre CB band:

Come back on that — come back — got a copy on me?

Radio check — back-to-ya — base — home base — what's your personal?

Some of these have subtle differences. You may not agree with me on some, and you may have some good examples not mentioned. Our common English usage changes with time . . . and our amateur English does also . . . where do we go from there?

# AR SHOWCASE



## SURGE SHUNT

Protection of costly solid state communications equipment from high voltage transients, the most common being lightning strikes, is a problem to all amateurs.

The R.L. Drake Company renowned for the production of high quality communications equipment for the amateur have released "SURGE SHUNT", a unique package that will provide adequate protection from lightning and voltage transients entering a transceiver from the antenna. This remarkably small device can be easily inserted into the feedline of communications equipment by means of a Tee connector.

Claimed figures are an insertion loss of less than 1 dB up to 400 MHz and 1.5 dB maximum up to 500 MHz. The arc threshold varies between 230 and 750 volts depending on transient rise time.

For further information contact Elmeasco Instruments Pty. Ltd. Offices in Sydney, Melbourne, Brisbane and Perth.

## NEW TH5Mk2 TRIBANDER

The new TH5Mk2 is a five element broadband tribander for 20, 15 and 10 metres and is considerably smaller than the TH7DX antenna which was introduced earlier in the year.

The TH5Mk2 will load tube-type or solid state auto-tuned rigs from band edge to band edge on 20 and 15 metres. On 10 metres, there is a choice of 28.0 to 29.4 or 28.3 to 29.7 MHz, all below 2:1 VSWR. The Hy-Q traps for each band are the most efficient technique for multibandng a yagi antenna. Factory assembled and pre-tuned traps are mechanically superior, and provide reliable all weather per-

formance. With four active elements on each band, the average forward gain is an impressive 8.5 dB and average front-to-back ratio is 20 dB.

The relatively small dimensions of the TH5Mk2 will delight all DXers with limited available space. The antenna assembles on a 19 foot (5.8m) boom. With a maximum element length of 31.5 feet (9.6m) the turning radius is only 18.4 feet (5.6m). The assembled antenna weighs 59 lbs (26.8 kg).

Mechanically the TH5Mk2 is very simple to assemble with virtually no room for mistakes when the steps in the thoroughly detailed instruction manual are carefully executed. The antenna includes stainless steel hardware, the BN86 Balun and a sophisticated matching dual-driven element feed system as also used in the larger TH7DX. The antenna provides DC grounding for lightning protection.

For further information contact sole distributors:- P.O. Box 421, 1 Little Street, PARRAMATTA, 2150; P.O. Box 468, 7 Essex Road, MT. WAVERLEY, 3149; P.O. Box 871, 42 Commercial Road, FORTITUDE VALLEY, 4006.

## DANTEL 90572 SPEECH-PLUS COMBINER

This new Speech-plus combining amplifier features plug-in active filters and duplex circuits on one compact plug-in module, allows simultaneous use of a voice-grade circuit for both low-speed data and voice signals and will fit in the Dantel 90000 series equipment shelves.

It may be utilized with FSK data modems, channel modems, order wires, baseband interface and telephone interface equipment, Scada systems and other compatible modules manufactured by Dantel to fill a variety of application needs in one complete assembly with a substantial cost reduction.

Plug-in filter modules are available for several different frequencies and feature a roll off of approx. 1 dB per Hz to 60 dB attenuation and can be equalized for high speed data.

Further information may be obtained from Scalar Distributors Pty Ltd, 20 Shelley Avenue, Kilsyth 3137.

## AMATEUR RADIO LOG PROGRAMME

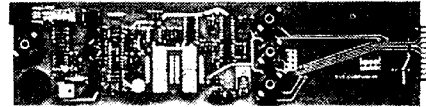
AT LAST! Something new for the Amateur Radio operator who is also a computer enthusiast. Until now you have felt that you had been forgotten but there is now a package, designed and written in Australia for the System 80 and TRS-80 Mod 1/LII computers, which should make the tedious job of log keeping "a breeze."

This disk based programme provides for up to 500 individual log entries and has a very powerful search facility which will allow retrieval of entries by their stored sequence number or by the call sign entered.

If there is a printer connected to the computer system, a series of reports can be produced including detailed log listings, call signs or call area.

The packaged programme is simple to run and comes complete with a detailed users manual.

All enquiries for this package (Cat X-3774) should be directed to Dick Smith stores and dealers.



## COASTCOM 939 COMPANDOR

These units have gained widespread acceptance for use in satellite and terrestrial microwave systems where they are used to improve S/N performance and/or increase system voice channel capacity.

Now marginal and unacceptable voice circuits can operate at or near toll quality by installing a compandor at each end and the S/N improvement created can be used to save money on other more expensive parts. Adjustable unaffected level allows system optimization of channel loading and noise improvement.

Standard interface levels (+7 and -16 dBm) permit the integration of the Coastcom 939 into existing systems to improve voice quality or permit full system spectrum utilization. European and other interface levels are available as options.

The 939 can be used to double voice channel capacity with the same S/N performance, increase S/N ratio by 15 to 20 dB and reduce cross talk in multi-channel FDM carrier systems, whilst it is fully compliant with Intelsat specification BG46-92, meets CCITT recommendation G-162, has unaffected level settle between 0 dBm0 and -63 dBm0 in 1 dB steps and a flat frequency response (+ -0.5 dB over 300-3400 Hz).

Further information may be obtained from Sclar Industries Pty Ltd, 20 Shelley Avenue, Kilsyth 3137.

## NEW VHF MARINE WALKIE TALKIE FOR THE SEAPHONE BAND

The Nirecom Model NR-6000 is a versatile one watt, hand-held transceiver which is designed to operate on any one of six channels within the VHF Seaphone band.

Due to the size of this unit, a small boat owner no longer has to worry about the security risk of expensive radio equipment on his craft when not in attendance. The NR-6000 is small and self-contained with an internal rechargeable battery pack which gives complete freedom of use to talk to ocean liners, obtain weather forecasts or just keep in touch with a shore base.

This unit comes complete with one set of crystals for channel 16 (156.8 calling and emergency), a rechargeable nicad battery pack, helical whip antenna, AC/DC charger, earphone, carry case and hand strap.

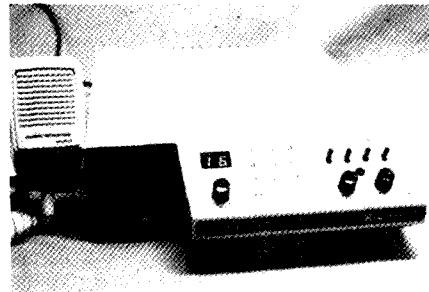
This new high performance, compact sized transceiver is approved for use in the Australian seaphone band by the Department of Communications and more details and information may be obtained from the Australian Distributor: GFS Electronic Imports, 32 McKeon Road, Mitcham, Victoria, 3132.

## MAST RANGE TABLE

Clark Masts have produced a range table which details the wide range of masts available with extended heights of up to thirty metres and headload capacities up to 100 kgs. There is a model for practically any application.

These masts are fast erecting systems for all applications and are available for mounting on tripods, on vehicles or trailers and can be used in any extreme weather conditions from the centre of Australia to the arctic circle. (Some masts are NATO coded.)

For further information contact Scalar Distributors Pty Ltd, 20 Shelly Ave, Kilsyth, 3137.



## NEW VHF FM MARINE RADIOTELEPHONE

The Standard Model C-855A, a 55 channel marine transceiver, has a design which combines economy in price and state of the art design by using two microprocessors.

It is designed to operate on the International VHF FM Seaphone band which enables the boating operator to obtain weather forecasts, talk with any telephone in Australia, communicate with other boats or just keep in touch with a shore base station.

The C-855A incorporates keyboard entry of channels with automatic scanning for up to ten channels. By incorporating a dual watch facility, high priority is given to the emergency channel (ch 16). Transmitter power output of the C-855A is 25 watts and approval from the Department of Communications has been given for its operation in Australian waters. This unit provides small boat owners with an economical alternative to other expensive FM and SSB radiotelephones.

For further information and details contact GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria, 3132.

## NEW YAGI ANTENNAE

The new Y400 series antennae have been specifically designed for use on the 400-520 MHz band with 3 to 14 dB gains and provide economical and effective operation for point to point communication applications.

These yagis are manufactured from high grade seamless aluminium tubing (special heavy duty models feature stainless steel construction for use in corrosive or ice-prone areas) and feature a 4% bandwidth at a VSWR of less than 1.5:1 and VSWR 1.3:1 at centre frequency. A cable tail to N type female termination is provided which allows ease of access for waterproofing.

Also released is the "RF Control" yagi model Y415PT which has been specifically designed for use in RF control operations and fully conforms to DOC draft specification RB234C.

The Y415T is a fifteen element yagi with a multi-element reflector, sidelobe levels at any angle greater than 55 degrees from the centre of the main lobe will be at least 17dB below forward gain and is supplied with either an end mount or a centre-mount elbow.

These yagis are available from all Scalar Offices in Melbourne, Sydney, Brisbane or Perth.

# WIA BADGES

Jennifer Warrington

59 Albert St, Clarence Gardens, 5039.

When I wrote the letter to the Editor, in the June edition of AR, I had been motivated by seeing several variations of the WIA emblem, to wonder, why the variations, and how the badge and its symbols originated.

It seems probable that the variations in design, position of wings etc, was a regional one; perhaps the local printer or block-maker didn't have one to copy or was only given a vague description.



Fig. 1



Fig. 2

(Figures 1 & 2 wings horizontal, Fig. 3 wings upside-down, Fig. 4 right-hand side, wings at 45° angle).



Fig. 3

The 'wings' and 'lightning' motif are said to have been derived from an Army Wireless Unit

badge of WW1 and these formed a large part of the RAAF Wireless Reserve emblem authorised in 1935. It is interesting that the same badge denotes RAAF W/T Operator (air) and also his Naval counterpart. (Figures 4, left hand side; and 5, Wireless Reserve. Fig. 6 Naval Badge).



Fig. 4



Fig. 5

The 'original' WIA emblem appears to have been designed a year or two before 1922 (see Fig. 7). The fact that Tasmania was left off created some controversy, and Tasmania was subsequently restored to AR blocks around mid 1947.



Fig. 6

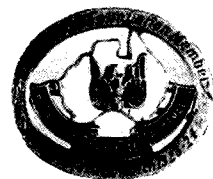
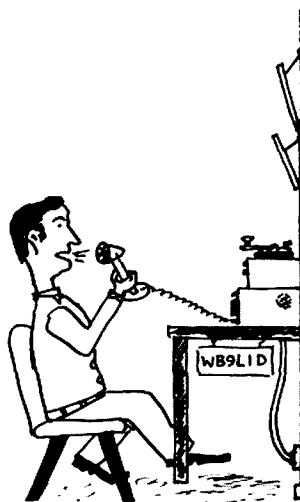


Fig. 7

I regret that I have been unable to discover any earth-shattering revelations, but I would like to thank the following people who provided material in one form or another.

Ian — VK3BTX, Don — VK4NN, Peter — VK3CIF, Maxwell — VK3ZS, Jack — VK5JK, Leith — VK5LG, and Brian — VK5CA. AM



"Nobody takes me seriously on air."

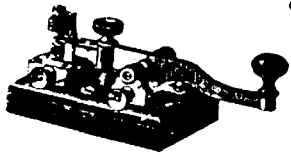
— VK2EBM

"Would you please report all after, ...?"

— VK2EBM

Idealism increases in direct proportion to one's distance from the problem.

# POUNDRING BRASS



Marshall Emm VK5FN (ex-VK2DXP)  
Box 389, GPO Adelaide 5001.

## CW ABBREVIATIONS

During the last year or so I must have seen at least a dozen different lists of abbreviations commonly used in CW. Some are more common than others, and it is these I intend to deal with here, as there would be little point in reproducing a further list. Because the abbreviations are pretty meaningless outside the OSO context, I will give some examples of typical transmissions and then discuss the abbreviations used.

UR FB SIGS RST 5 7 9 ? 5 7 9.

Insofar as U = You, it seems logical that UR means "Your," FB means "Fine business," and is used as a form of compliment. It can be used on its own, as in "FB JOHN, ALL OK," or it can be used as a favourable adjective to describe just about anything, e.g., "UR FB RIG ES ANT FB." Signals is abbreviated SIGS, and RST should be immediately recognizable as "Readability, Strength, Tone Report." The ? or IMI indicates a repetition. Except in contest operation, the RST numbers should be sent in full the first time, but N can be used for "Nine" in the repeat.

RIG IS FT200 ANT IS GP ABT 20 FT HI.

For common rigs the model designation is adequate; there is no need to spell out Kenwood or Yaesu, etc. ANT = Antenna, and some common type abbreviations are: GP (Ground Plate), VERT (Vertical), INV V (Inverted V), LW (Long Wire), 2 EL, 3EL, etc. (number of elements). ABT 20 FT HI means "About 20 feet high." Some ops, including me, use "UP" rather than "HI". And for the record, I use Imperial or Metric measurements depending on whom I'm working — if in QSO with an American station I use feet and Fahrenheit; the J's get metres and C.

Some other common expressions are used as salutations, such as the classic "CUL" for "see you later," and BCNU (just spell it out loud). The word "good" is frequently used, so it is not surprising that the abbreviation "GUD" is quite common. "SRI," "CPI," and "MI" are also often heard, meaning "sorry," "copy," and "me or my" respectively.

One last category deserves special mention — numbers. N is often used for nine, and T is often used for zero. Some discretion is required, and they should only be sent where the other op is expecting a number. RST 5 N N is pretty obvious, but "SKED AT TNTT" just wouldn't work.

In summary, abbreviations should be used where possible to make sending and receiving easier. If you use too many of them, or unusual forms, you are making life difficult for the receiving operator and defeating the purpose of the whole thing, which is COMMUNICATION. When in doubt — spell it out.

### QUESTION OF THE MONTH:

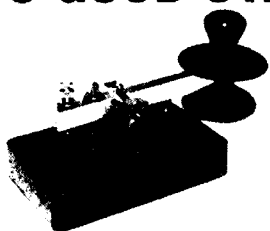
A new Novice asked me about using "Vs" to enquire whether a frequency is in use. I wasted no time in telling him that a series of Vs is a test transmission. The correct way to enquire if the frequency is in use is to send "QRL?"

and if it is you will hear "QRL." I have heard of people sending "IE," to which the affirmative is "E," but this usage does not seem to be common. One should determine whether the frequency is in use before sending Vs (or anything else!).

Next month's topic is CW Contest Operation — till then, 55 ES 73. AR

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# AMATEUR RADIO IN THE SOLOMON ISLANDS

## *Our Neighbours to the North*

George Sulc H44FE  
Acting President SIRS.

Amateur radio in the Solomon Islands has many facets: not only does it provide an opportunity to pursue a technical hobby but it is frequently used to complement other communication services.

The Solomon Islands Radio Society (SIRS) has currently twenty-eight members and runs a club station with callsign H44SI. Most amateurs in the Solomon Islands are located in and around the capital, Honiara, though there are a few scattered amongst the outlying islands. Because the majority of amateur operators are expatriates on contracts of two to three years there is a regular turnover, and membership of SIRS fluctuates from year to year. There is some six metre activity and SIRS operates a beacon on 52.004 MHz with the callsign H44HIR.

In addition to providing a fascinating hobby, and reducing the isolation many people feel living in the Pacific, amateur radio has frequently provided communications when other means of communication were not available. Some recent events of note, where amateur radio supplied services are: assistance with communications during the South Pacific Mini Games held in Honiara during July 1981; communications and the passage of information to some outer islands during cyclone Bernie, which passed through the Solomons in April 1982; arranging medical evacuations from outer islands to Honiara in emergencies; arranging for medical advice and

marine rescue for yachtsmen passing through or near the Solomons. These activities, as well as DXing, provide spice to the Solomon Islands amateur's life.

Two notable incidents which took place recently illustrate the varied public service which has been rendered:

*On the 15th June 1982, during a regular schedule, H44BU (Peter Bull in Buala, Santa Isabel) asked H44FE (George Sulc in Honiara) to arrange an urgent aeromedical evacuation. The patient had a strangulated hernia and Peter, who is the resident medical officer in Buala was most anxious that surgery be performed promptly, and yet the surgical procedure necessary could not be performed in Buala. The twice weekly flight to the nearby airfield, due the following day, had been cancelled.*

*Through H44FE an aircraft was arranged to leave Honiara at dawn the next day, and the patient was undergoing surgery at the Central Hospital, Honiara, by 0830 the same day.*

A second incident involved a yacht which ran aground on the reef adjacent to the main approaches to Honiara, some twenty-five miles out:

*At 2215 on the 16th July 1982, on the "Gunkholers" net conducted by H44KR (Joyce Stone) the call MAYDAY was heard. The weak signal came from the yacht Phat Duck (W6TE) which was reported to have struck the reef at the entrance to Sealkar*

*Channel. The leading light to the approach was not operating and the yacht had missed the entrance. Joyce Stone lives on a Chinese junk, which was anchored off the Yacht Club in Honiara, with no access to a telephone.*

*The immediate response by all stations on the net who could hear Bill on the Phat Duck was heart-warming and H44FE (George Sulc) contacted the marine search and rescue service for assistance. Thanks to the quick action of the Marine Department a ship was on its way to assist the yacht by 2250, reaching her by 0220 the following morning. The net remained open until 0430 monitoring the marine frequencies, passing information to the yacht, and generally trying to keep up the spirits of the yacht's crew. Thirty-six hours later the Phat Duck was towed clear of the reef with minor damage and no injuries to the crew.*

During the latter incident many stations from all over the world either provided relay or stood by in case they could render assistance. Unfortunately Joyce Stone, H44KR has now moved on and is currently heading for Cairns, Australia. Her regular informative maritime mobile net will be sorely missed by yachtsmen transiting the Solomons.

THESE ARE BUT TWO INCIDENTS. THERE HAVE BEEN MANY, MANY OTHERS, AND THEY ALL GO TO MAKE AMATEUR RADIO MORE THAN JUST A HOBBY FOR THE FEW SOLOMON ISLAND AMATEURS.

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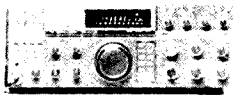
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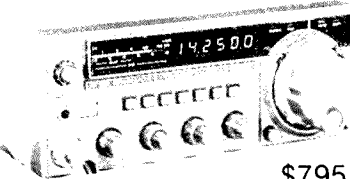
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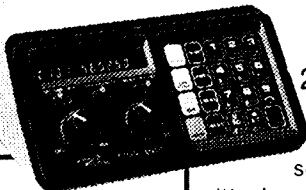
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AROUND.





# EDUCATION NOTES

Brenda Edmonds VK3KT  
Federal Education Officer  
56 Baden Powell Drive, Frankston 3199

In any discussion on classes or training programs, there is one question that is always asked — "Are we training people to be amateurs or to pass exams?" There is not always agreement on the answer. Obviously each instructor has to decide on his/her own answer to this question at some stage of the course. Equally obvious, since the exam must be passed for the candidate to receive a licence, the question can never be fully resolved.

Most would agree that possession of that vital piece of paper does not produce an instant new amateur according to our full understanding of the term, and most of us have at some stage mentally or openly criticised the language or procedure of a new operator.

How many of us, though, are prepared to give a little time or effort to encourage or assist the new operator? They all realise that there is a lot to learn which is not on the exam paper, but many are a bit diffident about asking for help, or do not know who to ask.

For many students, the classes are their first contact with active amateur operators. Their future operating habits will depend to a large extent on their early experiences.

Some clubs see the classes they run as a good source of funds, or prestige, or new members, but are prepared to leave the class work to a small group. They do not always realise that there are many ways they can assist the students — or the instructors.

For those who are concerned about the quality of the new amateurs being added to our ranks, here are a few ideas.

1. Make the students welcome at club meetings or activities, and keep them informed about club functions. Be prepared to answer questions, and to talk to them at

their own level of knowledge. Have some speakers at meetings who can be understood by the students, and keep the jargon to a minimum when talking to the newcomers.

2. Help the students become aware of what is available in the way of equipment and accessories. This can be done in several ways — by arranging trade displays, by collecting a range of sets in one place to work on the same antenna system, or by inviting the students into individual shacks. For many, this may be their only experience of operating procedures before they get their licences, and will be the only way they can compare sets before they decide what to buy for themselves.

3. Help the student become a listener. This is especially useful for students having trouble with the Morse and needing a lot of practice. They may need help to get up an effective antenna, or even a short loan of some HF receiving equipment. Being able to receive, even on only one band, will make much of the theory more relevant.

These are only a few ideas. They are not restricted to club members. In some areas, classes are being run by schools or TAFE colleges, with practically no amateur input except by the instructors. These classes in particular, need to be made aware that there are active amateurs willing to help them into the hobby.

Best wishes to all those sitting for the November exams. Sample papers are now available from me or from the Executive Office.

73

Brenda VK3KT

AR

## "DON'T GO IT ALONE — SEEK ADVICE"

Seek early advice with any interference problem which involves third parties. DON'T leave it until the situation has got out of hand!

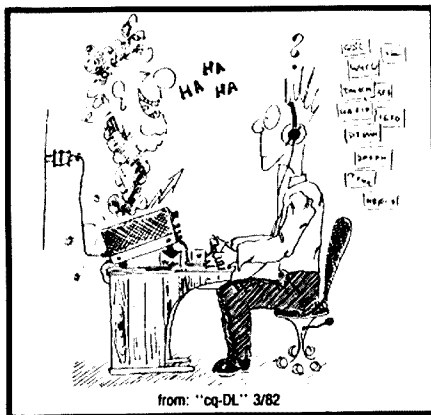
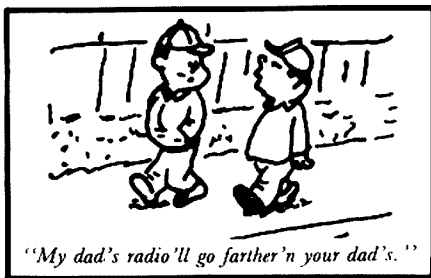
In today's world of highly complex communications and electronics, amateur radio operators are under growing pressure in respect of "interference" to and from their stations... "The gadget world is closing in!"

In these days of modern-design amateur transmitting equipment, the incidence of interference, which is shown to be directly attributable to faulty amateur station equipment, is less than 1 per cent. Most interference problems are directly due to the poor immunity factor of consumer products.

Because of this growing threat to amateur radio as a whole, the Wireless Institute of Australia makes its EMC Advisory Service available to all Australian amateurs.

The National EMC Advisory Service is available to assist with advice on all types of interference problems... When requesting assistance, please provide as much detail as possible.

Tony VK3QQ.



from: "cq-DL" 3/82

# AOCB Examinations — 1925 Style

Recently, while researching material of historical value for VK5 division, Brian VK5CA published upon this copy of an examination paper published in SA WIRELESS — August 19, 1925.

How would the amateurs of today go —??

## EXAMINATION FOR AMATEUR OPERATOR'S PROFICIENCY CERTIFICATE

Theory.

Time Allowed — Two Hours

Note — The compulsory questions (1 to 5), and two of the optional questions must be answered.

### COMPULSORY QUESTIONS

1. Draw a diagram of a 10 watt (2 valves) transmitter adapted for C.W., buzzer modulated C.W., and telephony. Show source of primary power and apparatus for obtaining requisite H.T. supply, and include in the circuit aerial ammeter, plate milliammeter, and filament voltmeter ..... 25 marks.
2. Draw a diagram of a 3 valve receiver capable of being used for reception of C.W. signals ..... 15 marks.
3. Explain in detail the construction and functions of a high frequency and a low frequency choke ..... 15 marks.
4. Define briefly the following:-
  - (a) Radio frequency currents.
  - (b) Electromagnet.
  - (c) Grid leak.
  - (d) Wavemeter.
  - (e) Variometer ..... 10 marks.
5. State what you know of the following:-
  - (a) The chemical action which takes place in an accumulator when discharging.
  - (b) What makes an accumulator gas on completion of charge.
  - (c) How to get rid of slight sulphating in an accumulator ..... 15 marks.

### OPTIONAL QUESTIONS

6. What is meant by the choke control, method of modulation? ..... 10 marks.
7. What effect would the application of A.C. to the plate of a transmitting valve have, and why? ..... 10 marks.
8. What is meant by direct and indirect coupling, in so far as receivers are concerned? Illustrate your answer ..... 10 marks.
9. Write what you know of the synchronous rectifier ..... 10 marks.

Total Marks ..... 100  
Pass Marks ..... 75

Traffic Routine

Time Allowed — One Hour

COMPULSORY QUESTIONS

1. (a) Illustrate in detail a test transmission with an experimenter in another State.  
(b) Show a log entry of the test ..... 20 marks.
  2. Give the meaning of the following signals:  
ORP  
ORB  
QSY.  
QST.  
QSL ..... 20 marks.
  3. What do the following indicate?  
..... 20 marks.
  4. State what you know of the rules made by the Department in order to avoid interference with other stations ..... 20 marks.
  5. What is the international distress signal, and the maritime warning signal, and state what action you would take if you heard either of these signals whilst engaged in making a test ..... 20 marks.
- Total Marks ..... 100  
Pass Marks ..... 75 AR

# NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ

NATIONAL EMC CO-ORDINATOR  
38 Wattle Drive, Watsonia 3087.

**Hans Ruckert, VK2AOU, has interpreted the findings of DL1BU which should be good food for thought. For any amateur that owns a transmitter capable of emanating a signal regardless of power output.**

## Electromagnetic Energy near our Station

by Hans Ruckert, VK2AOU.

Radio amateurs are usually only interested in the signal strength which their station equipment will produce at the distant receiver.

When a complaint of local interference is reported, we begin to realise that not all the EM energy produced by our station actually arrives at the distant receiver.

If it was possible to ensure that all the EM energy we produce would arrive at the distant receiver, then we would not only improve our communications capability, but we would significantly reduce many of the co-location problems.

Much of the EM energy generated by our station transmitters remains in and around the station, is absorbed by, and impinged on numerous natural and man-made substances.

For those of us fortunate enough to live on an isolated "cattle station" or an isolated "Pacific island," local field strength is of little consequence. However, most amateurs have to contend with a moderate amateur block, where many items of "hardware" will be subjected to our local EM energy field.

Providing these items of "hardware" will be subjected to our local EM energy field.

Providing these items of "hardware" have good immunity factors (good selectivity), then again, our local EM energy field will be of little consequence.

Unfortunately there are quite a large number of items to be found around the average home which do not have good immunity factors. The most common problem is home entertainment products.

There are however, many other unsuspected items which can fall foul of our EM energy field; re-radiating a reproduction of our signal on other frequencies by non-linear action.

Some of these items include, rusty, corroded or ill fitting metal work, electrical wiring, plumbing, to name but a few.

These and other experiences prompted DL1BU to conduct some very interesting local field strength measurements in and around an average amateur station. The listed values in V/m. At 40 metres distance the field was 6 V/m. Inside the house under the mast, the field was 10 V/m.

(a) Triband Groundplane antenna mounted on a house roof, radials installed under the roof. The ceiling is of concrete and wood chip mixture. The transmitter is operating on 14MHz, at 400 watts pep output. At a distance of 20 metres the field strength was 15 V/m. At 40 metres distance the field was 6 V/m. Inside the house under the mast, the field was 10 V/m.

(b) Inverted Vee Dipole antenna 16 metres above ground at the centre feed point. The ends 10 metres above ground. The transmitter operating on 7MHz at 400 watts. The field strength at ground level under the centre

point was 20 V/m, and under each end 30 V/m. At a distance of 20 metres and at an angle of 60° to the plane the field was 6 V/m.

(c) As (b) but 29 metres above ground at the centre feed point. The transmitter operating on 3.5MHz at 400 watts. The field strength under the centre point was 30 V/m. Under one end 20 V/m, and the other end 36 V/m.

(d) As (c) with the transmitter operating on 1.8MHz at 10 watts. The field strength under the centre point was 1 V/m, and at the ends 30 V/m.

(e) Three Element Triband Yagi antenna mounted 10 metres above a concrete roof. The transmitter operating on 14 MHz at 400 watts. The field strength at a distance of 40 metres in the main radiation direction was 2 V/m. At 20 metres the field was 4 V/m. Under the yagi, on the concrete roof the field was 18 V/m. Beneath the steel reinforced concrete roof the field was down to 1 V/m.

(f) A Ground Plane antenna for 7 MHz at ground level with 10 radials buried 5 cm deep. Power 400 watts. The field strength at 1.5 metres above ground (E-field) at a distance of 2 metres was 72 V/m, at 4 metres was 40 V/m, at 8 metres was 30 V/m, and at 16 metres was 18 V/m.

(g) A 200 metre Long Wire antenna 3 metres above ground terminated with 600 ohms. The transmitter operating on 3.5 MHz at 400 watts. The field strength measured at 1.5 metres above ground. Along the length of the antenna the field varies from 90 V/m to 50 V/m, and finally to 3 V/m outside the far end.

These fieldstrength values of various antenna systems give us some idea of how much EM energy we can expect near our station and how high the immunity factor domestic home entertainment and consumer products should be in order to provide protection against interference.

The West German DIN Standard 45.305 part 302 (draft from September, 1980; last date for objections 31st January, 1981; developed by all parties concerned, and used by some manufacturers for the past seven years) provides for an immunity test of TV and BC receivers to obtain approval for sale.

For the immunity tests, the receiver is placed in an EM field of 3 V/m over the frequency range 150 kHz to 150 MHz. The licencing authority requested legislation for a 10 V/m test. However, after negotiations between all parties, including the manufacturers, agreement was reached for a figure of 3V/m.

The test equipment required for completing these immunity measurements is called the Crawford, Jacky or TEM cells. These test cells are the internationally acceptable method of testing electronic equipment for immunity and susceptibility to unwanted electromagnetic energy.

The West German equipment manufacturers have learned from the "Jacky" test cell how to design domestic, home entertainment, and

consumer products so that they have a good immunity factor, and still retain good economy for their products.

Many of the West German manufacturers demonstrate and illustrate the ability of their products to operate in close proximity to high power radio frequency transmitters, without producing interference, by connecting a working TV receiver to the same antenna as an operating radio frequency transmitter. Also, by advertising the ability of their products to operate without interference in a hostile EM energy field, the level of which is greatly in excess of government legislation standards and regulations.

*If you are still not convinced of the need for government legislation covering standards and regulations for immunity and susceptibility of domestic, home entertainment and consumer products in Australia, or if you believe that the cost to manufacturers would be prohibitive, then we would suggest that you study the North American and European scenes.*

*Should you still not be convinced, may we suggest that you picture yourself in the following situation: "Your neighbour has filed a complaint against you, with the DOC, in respect of interference to his newly acquired video recorder. The DOC inspectors investigate the situation and come down in your favour; telling your neighbour that his "pride and joy" is at fault and he should contact his equipment manufacturer. The manufacturer either does not wish to know the problem or claims that his equipment is working correctly and is meeting specifications. . . Your neighbour now has little choice but to take legal action against you for causing a public nuisance, breach of the peace, or what-ever. Or, perhaps just throws bricks through your windows. . .*

Tony VK3QQ

A most useful tool in understanding and dealing with all types of RFI problems is the "New Interference Handbook" from the USA. This book is very moderately priced and is excellent value for money — a most useful reference book for any shack. Available from all Divisions and MAGPUBS.

AR

## EMC (Electro Magnetic Compatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO  
VK3QQ,  
Federal EMC Co-ordinator, QTHR.

# INTRUDER WATCH

## FCC LODGES PROTEST WITH USSR



Bill Martin, VK2EBM  
FEDERAL INTRUDER WATCH  
CO-ORDINATOR

33 Somerville Road, Hornsby Heights 2077

A recent communication from the IARU Region 2 Director of the Intruder Watch informs us that the USA Federal Communications Commission has lodged protests with the USSR concerning Intruder stations using Radioteletype on the following frequencies: 14.115 MHz; 14.141 MHz; 14.171 MHz.

Also a protest has been sent to the International Telecommunications Union (ITU) regarding the Intruder (also using Radioteletype) which can be heard on 14.349 MHz, and which emanates from the North Korean News Service.

This sort of action is a 'plus' as far as the Intruder Watch is concerned, and is precisely why Intruder Watch is in existence.

These protests are a direct result of the actions of interested amateurs who are prepared to send in the occasional report concerning the intruders they hear on the amateur bands in the course of their ordinary on-air activities.

The Intruder Watch Co-ordinators are merely an extension of the average amateur, and we must all work together to police the amateur bands. *Intruders on the amateur bands are ON THE INCREASE.*

### WHY?

Because most of us are sitting back, presuming that someone else is reporting the Intruders that WE hear, and we are complacent in that knowledge.

Forget it. YOU MUST report the Intruder. Sure, someone else may also report him, but the fact is that we need many reports. IDEALLY, WE WANT EVERYONE TO REPORT INTRUDERS. This will never be the case, of course, but let us at least try to swing the percentage of success a little our way. As it is, the Intruders have all the advantages. They don't have to listen on the frequency before transmitting; they don't have to stay within their band-limits; they don't have to watch their power-output. They, in other words, get the first shot. Now we must retaliate. The way we do this is to shoot back. HOW? Log their transmissions, and send a report to your Divisional Intruder Watch Co-ordinator.

Don't forget, these Intruders you hear on the amateur bands don't have a pipeline to Australia. All the other Societies around the world have their Intruder Watch, who are also doing their best to get rid of the Intruders from the

bands. We MUST assist the other regions in their endeavours. Don't let us reap the benefit of any good work they may do.

### DON'T KNOW WHERE TO START?

Try the 40 metre band, every evening. Look for AM broadcast stations, of which there are many. Try 7.025, 7.050, 7.095 MHz, etc.

And that's not all. Try 21.032 MHz through the daylight hours (local), and listen to a Russian Merchant Navy radioteletype station, who takes up a lot of time on OUR bands. He'll identify in CW, and you will hear his call-sign "UMS".

Tell us you heard him. Have a listen for Intruders . . . you'll soon get the hang of it.

Any advice or information can be obtained from your Divisional IW Co-ordinator, or from the Federal IW Co-ordinator.

If a tiny place like Trinidad and Tobago (9Y) can muster up five active stations to monitor Intruders, surely we here in Australia can at least give them a hand, and some encouragement.

Remember, we are HELPING OURSELVES. Please report ALL intruders.

Amateur Bands for Amateurs. AM



AUSTRALIAN LADIES AMATEUR  
ASSOCIATION

# ALARA

Margaret Loft, VK3DML

28 Lawrence Street, Castlemaine 3450

Hello to all again. November is our big month — please remember the ALARA CONTEST on November 13th from 0001 to 2359 UTC. Suggested frequencies as per the contest rules in October AR page 40. The contest is open to all so please join in and make this even more successful than last year. So we look forward to talking to all OM's, YL's and also hearing from the SWL's. Look for the club call signs VK2DYL — Geraldine VK2NQL and VK3DYF — Margaret VK3DML operating the calls for the contest date. These are bonus stations worth double points.

### DX VISITORS

Some of the ALARA girls have had the pleasure of meeting one of our DX members, Bobby VE7CBK and OM Archie who are in Australia for the Commonwealth Games and took the opportunity to meet some of the YL's. Heather VK2HD, Helene VK7HD, Gill VK6YL, and Mavis VK3KS were hostesses to them. On Tuesday 21st September, Mavis and Ivor invited some of us to meet Bobby and Archie, Alma ZL2AWP was also in Melbourne so a three-country luncheon was thoroughly enjoyed. Thank you to Mavis and Ivor for your kind hospitality. Jessie VK3VAN and Gordon VK3BGB and Mavis VK3BIR also met Bobby. **5W1-YL**

Girls, if you are still looking for a YL on 5W1, Jessie WA60ET and Pete Billon K6JG and Larry W6ANB have announced they intend to operate from 5W1 in the CQWW WPX CW Contest on 27th and 28th November, 1982. After the contest Jessie and Pete hope to visit Australia and New Zealand, and meet some of the YL's. Jessie is not a member of ALARA but is a past president of YLRL and holds YLISSB no. 46 and is a member of WARO.

I had a visit from Clem VK7NBC a few days ago whilst he was in Castlemaine staying with relatives. We had not previously met on air but look forward to talking to you soon Clem. Also had a visit from Valda VK3DVT and her sister Pat, and did enjoy the visits.

On Sunday night I met Brenda VK2PKI on 80 Metres. A new YL, Brenda is still a student and a keen contester, so hope to talk to you again on the contest and also on the ALARA nets, Brenda, and good luck in your further studies.

### EXAMS!

Have not heard of any new call signs from the last exam but do hope some were successful. Please let me know so we can update our lists.

I had a note from Norm VK3VVO to tell us his XYL Carmel is studying for her novice ticket and asking for a little encouragement. We would be very pleased to do this for any other YL. The aim of ALARA is to foster and encourage YL involvement in amateur radio, so please let me know if your YL is studying and we will arrange for someone to call or phone and offer any assistance. It is well worth the time to add another call to the bands.

Thank you to those who have notified us of YL's with call signs and hope to hear from more of you.

ALARA teaspoons and badges are available from Valda VK3DVT C/- P.O. Box 4, Brighton 3186, also information sheets for finding out about joining.

Until next month, good luck to all taking part in the contest and may you work that elusive country you have been chasing.

33/73/88 to all, Margaret. AM

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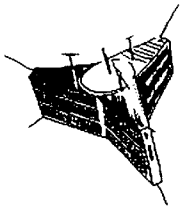
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# AMSAT AUSTRALIA

Bob Arnold, VK3ZBB,  
41 Grammar Street, Strathmore, 3041.

## NATIONAL CO-ORDINATOR

Chas Robinson VK3ACR.

## CORRESPONDENTS

VK3YQX, VK4TL.

## ACKNOWLEDGEMENTS

AMSAT Satellite Report.

ARRL RTTY News Bulletins.

AMSAT-UK per G3AAJ.

## INFORMATION NETS

### AMSAT AUSTRALIA

Control VK3ACR.

1000 UTC Sunday and Wednesday.

3.680 MHz Winter

7.064 MHz Summer (From 31 October).

### AMSAT PACIFIC

Control JA1ANG

1100 UTC Sunday.

14.305 MHz.

### AMSAT S-W PACIFIC

Control W6CG.

2200 UTC Saturday.

28.878 MHz.

Basic Orbital Data can be obtained through the AMSAT-AUSTRALIA nets by both participants and listeners.

## MODE "J" CLUB

Congratulations to Carl VK2YSX and Ross VK2ZRU on their election as members of the Mode "J" Club. Their numbers are respectively 238 and 240.

## SATELLITE DX RECORD

In the September 1982 edition of "Amateur Radio" I included a reprint of a report from "Amsat Satellite Report" No 37 which suggested that a recent QSO via RS-8 between VK4TL and WH6AMX was an all time satellite DX record and a first between VK and WH6.

John VK4TL has now written to me to clarify the report. John's first contact with the North Pacific Area was on 27th January, 1978 with WA8VDJ/KH6 in Kure through Oscar 7 Mode B; this was followed on 12th March, 1978 by a QSO with KH6OS in Honolulu.

A QSO was also made with KH6JHR in Honolulu on 30th January but no QSL card was received; John was 'heard only' by KH6OS on Mode A on 23rd February, 1978 but no QSO resulted.

My calculations indicate that the distance from John's QTH in Cairns to Kure is 6344km and to Honolulu 7470km. John has also worked UAOLBU in Vladivostok on Mode B, a distance of 6820km and he lists other countries worked by satellite:-

ZL2, JA, JR6 (Okinawa), VS6, P29, KC6, HL9, DU6, KH6, KH6 (Kure), KG6, 9M2, RA0, H44, YB0, FK8.

It is now clear that the contact between VK4TL and WH6AMK on 3rd July, 1982 was neither a first nor a record but nevertheless it was most creditable and both operators deserve our congratulations.

Unfortunately stations in VK3 are precluded by distance from working some of the above mentioned DX but as a consolation we do have the opportunity to work all ZL call areas as well as the elusive Antarctic stations.

I have also worked into ZK1 and for the record my personal best DX is JR6AE (Okinawa) at 7334km and VS6HI at 7413km. Can I persuade past and present satellite operators to let me have details of their logs so that achievements can be recorded as a part of the history of our Institute.

## PHASE IIIB

On the 10th September at 013203 UTC ARIANE L5 Rocket was launched from Kourou, French Guiana by the European Space Agency.

The vehicle carried a payload of satellites MARECS -B and SIRIO-II, no amateur satellites were on board.

After 550 seconds from launch it became apparent that the vehicle was not following its predicted flight path and the tracking station in Brazil reported there had been a failure of a turbo pump in the third stage rocket.

The rocket and its load crashed into the Atlantic Ocean. This catastrophe has caused some concern in amateur circles as the AMSAT Phase IIIB Satellite is due to be launched on ARIANE L7. (It will be recalled that Phase IIIA was lost on 23rd May, 1980 when ARIANE L2 was destroyed shortly after launch).

Information to hand at the end of September indicates that a delay of only two months is anticipated, therefore a revised launch date in April 1983 can be assumed.

## AMSAT Oscar 8

AO-8 is operating according to schedule.

For a trial period the Westlink Report will be transmitted through the telemetry beacon and reports on its reception are requested by AMSAT.

The Westlink Report is produced on the West Coast of the USA and is a general survey of satellite activity.

## DIGITAL PACKAGE

For some time discussions have been proceeding on the possibilities of launching a Low Orbit Digital Package for the use of experimenters in this field.

It is now hoped that a potential launch may exist on one of the SSI rockets which are being developed by private enterprise in the USA.

## VISITORS

It was a pleasure to have an eyeball with Ray Naughton VK3ATN and to see him looking so fit after his most serious antenna accident. It would appear that Ray has as many steel pins as bones and one can imagine him bubbling inside if he gets too near that huge EME dish in the middle of his antenna farm.

As well as pursuing his business of manufacturing antennas for amateurs and professionals Ray has some quite sophisticated plans for community TV Transponders in small country centres, an attractive low cost self help scheme.

Ray is also active in the educational sphere and is trying to arrange residential courses of two or three days duration for students in physics and electronics. It is hoped that the courses will be run in conjunction with the local high school, (further particulars from Ray QTHR).

I used Ray's "ATN" 70cm antennas, as advertised in 'AR', for Mode 'B' and Mode 'J' satellite operations and was most disappointed that time precluded demonstrations via one of our satellites.

## UOSAT OSCAR-9

During the afternoon of 25th September listeners to UO-9, including VK3ACR, VK5AGR and VK3ZBB, were thrilled to hear the 145.825 MHz Beacon of the satellite running 300 baud ASCII after several months of continuous tone.

The beacon on 435.025 MHz was also absent and this indicated that the de-sense problem with both command receivers had been overcome.

We now await with interest the further development of the numerous facilities, including TV, which are aboard the spacecraft.

Congratulations must be extended to the small team of enthusiastic helpers who made this breakthrough possible.

## AMSAT OSCAR-7

Following reports that the Beacon on 145.972 MHz had been heard, a number of stations have been listening for further activity. Unfortunately no signals have come through so it must be assumed that the Beacon is very intermittent or that the signals came from another source.

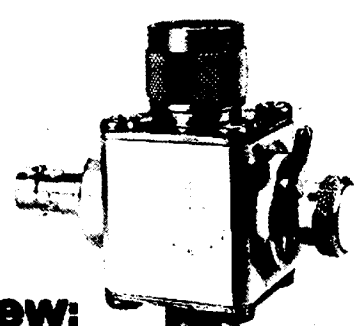
## RS 3 to 8 SERIES

These satellites are operating satisfactorily according to their standard schedule.

## Postscript on PHASE III

As we go to press we hear that there is a possibility that the launch of Ariane Rocket L6 may be abandoned and its launch date of early January 1983 be filled by L7 which is scheduled to carry the AMSAT PHASE IIIB satellite.

AR



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# WICEN NEWS

Ron Henderson, VK1RH  
 FEDERAL WICEN CO-ORDINATOR  
 171 Kingsford Smith Drive, Melba, ACT 2615

## NDO EXERCISE

NDO conducted their annual exercise COM-COORD 82 over the period 14 to 16 Sep 82. The exercise took the form of a command post exercise (CPX) for the National Emergency Operations Centre (NEOC) in Canberra and the scenario involved a cyclone situation moving down the Northern Queensland coastline. NDO wrote into the exercise a test of WICEN communications to Queensland and at fairly short notice VK1WI was activated from the QTH of VK1FT to make contact with the following: VK4WI Brisbane, VK4AQ Brisbane, VK4QA Brisbane, VK4YG Cairns, VK4IQ Townsville, VK4ALD Rockhampton, VK4UX Gatton, VK4ACU Tamborine.

Signals on 7.050 MHz were very good to Brisbane, Gatton and Tamborine, whilst fair signals were received from Rockhampton, Townsville and Cairns. VK4WI relayed to Cairns and Townsville to improve communications. In Canberra VK1DG manned a repeater 6900 VHF link at the VK1FT location and VK1ZAH was located in the NDO operations centre on the sixth floor of Northbourne House.

The net was only active from 1800 to 1900 local but this was adequate to demonstrate to NDO WICEN's capabilities if called upon in an emergency. Thanks are due to all operators who were active on the evening. Co-ordinators agreed that short exercises of this nature are good value to test and demonstrate capabilities.

## ARRL SET

By the time you read this WICEN will have been involved in its first SET, conducted by the ARRL over the weekend 16/17 Oct 82. The SET or Simulated Emergency Test is conducted annually in the USA to test and exercise their National Traffic Systems (NTS), Amateur Radio Emergency Service (ARES) and Radio Amateurs Civil Emergency Service (RACES). As I noted in this column in July 81 ARES and RACES correspond broadly to WICEN and NTS to Australian TPTNs. Consequently Australian WICEN involvement in the SET will call for co-ordination of WICEN and TPTNs, particularly at the national "gateway", where incoming traffic will have to be routed into the official disaster agency network WICEN, or the public personal communications network TPTN. This year our involvement is low-key, conducted from Sydney by NSW WICEN and based upon messages describing the Australian disaster control agencies' roles and responsibilities.

## ABBREVIATED PROCEDURE

Abbreviated procedure has two aspects, generally a shortening of the rather lengthy formal message procedure for use when communication conditions are good, and secondly the use of abbreviated callsigns. When conditions are good, particularly on VHF nets, the use of just the sender's callsign to replace the full sequence — ROGER — OVER — VK1ZAH THIS IS VK1RH, is to be encouraged, as are other abbreviated practices which do not confuse operators on the net. As an aside, almost all amateur networks are too waffly and WICEN is not excluded from this observation.

HOWEVER the use of abbreviated callsigns, dropping the VK or VK1 prefix, is not acceptable, unless DOC have specifically authorized such actions, so let's keep within the Hand-

book Regulations. Incidentally the cross patching either electrically or accoustically of VHF to HF often violates licence conditions so please keep within the Regulations during training and exercises.

## JOINT MEMBERSHIP

Many WICEN operators, especially those in small communities, may belong to multiple organizations, and this is a good thing provided there is no conflict of interest. If you report on a WICEN call-out and it goes slow or is slow to develop, do not change your WICEN hard hat for SES overalls or a police badge and change allegiance mid-disaster. This only makes it difficult for your co-ordinators who have counted on you as a worker, even though you are waiting in the wings, and moreover it is downright discourteous.

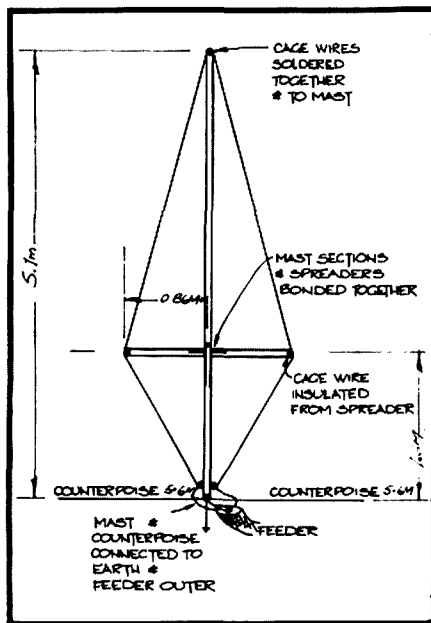
Our Federal policy defines the four levels of involvement — choose yours and concentrate your efforts in that field. AR

\* \* \*

## "OOPs"

Unfortunately there was an omission of the dimensions on a diagram in the article "Multi-band Exponential Antenna" published September AR page 26.

Here is the diagram again with the dimensions.



\* \* \*

Most men would agree there are three things in life that are very difficult to do. One is to climb a wall that is leaning towards you; another is to kiss a girl who is leaning away from you and another is to speak to large audiences without being nervous. Personally, I've had no success with walls leaning towards me; I've made only a little progress in overcoming my nervousness with speaking to large audiences and the third is none of your business. — From "The Clubman" Aug '82 AR

# Radio Amateur Old Timers Club

John Tutton, VK3ZC  
 31 Denham Street, Hawthorn 3122

Favoured by perhaps the best band conditions yet, the VK/ZL QSO party on 9th August attracted the best support of the three held to date. Scoring logs submitted totalled 33, 21 from VK and 12 from ZL (plus two check logs), and from an inspection of these, it appears that a total of 47 members of the combined clubs took part.

Not all entrants indicated the mode used, but, by reference to other logs, it is hoped that all scores are shown in their correct classifications.

| Call   | QSOs | Mult. | Total |
|--------|------|-------|-------|
| CW     |      |       |       |
| VK3RJ  | 21   | 9     | 945   |
| VK3ZC  | 21   | 8     | 840   |
| VK4CJ  | 21   | 8     | 840   |
| VK3LC  | 15   | 7     | 525   |
| VK3YW  | 7    | 3     | 105   |
| ZL2AB  | 20   | 10    | 1000  |
| ZL3AV  | 18   | 8     | 720   |
| SSB    |      |       |       |
| VK7AL  | 24   | 8     | 960   |
| VK3GY  | 16   | 8     | 640   |
| VK7BJ  | 16   | 8     | 640   |
| VK4OX  | 17   | 6     | 510   |
| VK5KV  | 16   | 6     | 480   |
| VK3HE  | 14   | 6     | 420   |
| VK2HQ  | 12   | 5     | 300   |
| VK7JU  | 12   | 4     | 240   |
| VK3WY  | 7    | 3     | 105   |
| ZL1JQ  | 20   | 7     | 700   |
| ZL1BGJ | 16   | 8     | 640   |
| ZL1BWU | 13   | 8     | 520   |
| ZL2BD  | 16   | 5     | 400   |
| ZL2WL  | 9    | 6     | 270   |
| ZL1ALW | 8    | 3     | 120   |
| SSB/CW |      |       |       |
| VK3KS  | 35   | 10    | 1750  |
| VK3XB  | 35   | 10    | 1750  |
| VK3JA  | 28   | 10    | 1400  |
| VK2AKE | 27   | 9     | 1215  |
| VK3VF  | 29   | 8     | 1160  |
| VK7RY  | 21   | 8     | 840   |
| VK3XF  | 6    | 2     | 60    |
| ZL3BJ  | 24   | 10    | 1200  |
| ZL4BR  | 23   | 8     | 9     |
| ZL2US  | 20   | 8     | 800   |
| ZL2KM  | 18   | 7     | 630   |

## COMMENTS

"John Stewart W6GTI at 7.3 either stays up very late or gets up very early — wish more locals would participate" — VK2AKE.

"Not a big log — enjoyed it very much" — VK7RY.

"The easy-going atmosphere and friendliness of all left a very nice feeling" — VK7AL.

Comments like these, and others, are very much appreciated.

The next party will be held on 20 metres at end February/early March. Notification later through these columns and on OTC net AR

\* \* \*

A customer with one arm winced as the barber nicked him for about the third time, but the man with the razor chatted on unnoticed. "Haven't you been in here before?" he babbled. "No," said the man in the chair wryly, "I lost my arm in a sawmill accident."

—From "The Clubman" Aug 82 AR

# Commonwealth Contest 1982

John Tutton, VK3ZC  
31 Denham Street, Hawthorn 3122

In the summary of the results of last year's contest, a table of leading scores was shown in which there was a build-up in line with the sunspot cycle to 1980, and then a decline. Sunspots or no sunspots, activity is the key to big scores and a successful contest.

1982 was notable for a number of reasons; total entry at 132 was the highest since 1958 when there were 143; greatest VK entry ever at 54, exceeding the Gs for the first time; highest all time winning score (VE7CC) and VK score (VK4XA).

Conditions generally were pretty fair, but on 15 and 10 seemed to vary considerably between the various VK states.

Russ Coleston VK4XA, a BERU man from way back as VK3XK, VK9XK and VK3AXK is to be congratulated on again being in 5th place overall and leader of the Australian contingent for the third year in a row, and top for four of the last five years.

In the receiving section Eric Trebilcock BCRS195 missed out on top spot by only 5 points.

## THE LEADERS WERE:

|           |      |           |      |
|-----------|------|-----------|------|
| 1. VE7CC  | 7588 | 6. ZL2BR  | 5562 |
| 2. VE6OU  | 7434 | 7. VK9NS  | 5524 |
| 3. VE3BVO | 6772 | 8. G3FXB  | 5449 |
| 4. VE5RA  | 6311 | 9. 9H1CH  | 5328 |
| 5. VK4XA  | 5798 | 10. G3MXJ | 5265 |

## RECEIVING SECTION

2 Eric Trebilcock BCRS195 2922

## AUSTRALIAN SCORES

|            |      |             |      |
|------------|------|-------------|------|
| 5. VK4XA   | 5798 | 69. VK6AJ   | 1978 |
| 7. VK9NS   | 5524 | 70. VK7RY   | 1975 |
| 19. VK3XB  | 4590 | 73. VK3VF   | 1700 |
| 20. VK3MR  | 4583 | 74. VK3YK   | 1678 |
| 21. VK2BPN | 4265 | 77. VK3XU   | 1595 |
| 23. VK7BC  | 4165 | 78. VK2II   | 1580 |
| 26. VK1CC  | 3929 | 80. VK2DBL  | 1480 |
| 32. VK2GW  | 3720 | 83. VK3XX   | 1350 |
| 38. VK3ZC  | 3335 | 87. VK5BN   | 1205 |
| 39. VK3AEW | 3305 | 88. VK4SF   | 1195 |
| 40. VK2AQF | 3245 | 93. VK7GB   | 1130 |
| 41. VK3RJ  | 3240 | 94. VK3FC   | 1110 |
| 42. VK3BKU | 3203 | 97. VK3CG   | 1105 |
| 42. VK6RU  | 3203 | 100. VK5FG  | 1035 |
| 44. VK4UR  | 3185 | 104. VK3APN | 942  |
| 46. VK3CM  | 3080 | 105. VK2ZC  | 940  |
| 47. VK3KF  | 3040 | 109. VK2SU  | 825  |
| 49. VK6FS  | 2695 | 110. VK5HO  | 795  |
| 50. VK7CH  | 2595 | 111. VK6HD  | 790  |
| 57. VK5GZ  | 2250 | 112. VK3KS  | 760  |
| 59. VK1UD  | 2225 | 118. VK3BLN | 635  |
| 60. VK2DID | 2220 | 125. VK5KL  | 440  |
| 61. VK5UM  | 2155 | 126. VK2BDU | 390  |
| 62. VK5RG  | 2150 | 127. VK2GT  | 375  |
| 64. VK6RZ  | 2070 | 128. VK3SV  | 360  |
| 66. VK3BDH | 2045 | 130. VK3CT  | 250  |
| 67. VK3JF  | 2020 | 132. VK7ZO  | 225  |

Check logs VK2EL VK4AK

## OTHER PACIFIC AREA RESULTS:

|            |      |             |      |
|------------|------|-------------|------|
| 6. ZL2BR   | 5562 | 75. ZL3AGI  | 1655 |
| 13. ZL2RY  | 4900 | 107. ZL1AZE | 919  |
| 25. T3OAT  | 3935 | 129. ZL1BLJ | 320  |
| 35. ZL1AIZ | 3655 |             |      |

## SINGLE BAND ENTRIES AMONG THE ABOVE WERE:

3.5 MHz VK6HD, VK7ZO  
7. MHz VK3APN Overseas leader  
14 MHz VK6AJ Overseas leader, VK4SF  
21 MHz VK3BLN

The four man team event between VK areas resulted again in a win for Victoria. A table of results on this basis over the past three years is shown, with comparisons with the UK, VO and VE7 the only other Commonwealth areas as defined in the rules from which over four logs were received.

|          |       |       |       |
|----------|-------|-------|-------|
|          | 1982  | 1981  | 1980  |
| VK3..... | 15813 | 10073 | 12216 |
| VK2..... | 13450 | 9407  | 11400 |
| VK7..... | 9865  | 7098  | 8863  |
| VK6..... | 9746  | —     | 4293  |
| VK5..... | 7760  | 3250  | 4013  |
| VK4..... | —     | —     | 7248  |
| G.....   | 20384 | 17593 | 22533 |
| VE7..... | 14187 | —     | —     |
| VO.....  | 6793  | —     | —     |

## AUSTRALIAN AWARDS

The Gold Medallion for the leading VK entrant — Russ Coleston VK4XA

The Silver Medallions for the leading State team — Ivor Stafford VK3XB, Snow Campbell VK3MR, John Tutton VK3ZC and Andy Domjan VK3AEW.

The Bronze Medallion for the middle placed VK entrant John Heine VK3JF.

## HOW THE LEADERS MADE THEIR SCORES:

QSOs/Bonus areas per band 80 to 10 (claimed)

|        |       |        |        |        |        |
|--------|-------|--------|--------|--------|--------|
| VE7CC  | 24/24 | 103/44 | 204/62 | 217/55 | 83/43  |
| VE6OU  | 18/12 | 80/42  | 240/81 | 272/58 | 108/40 |
| VE3BVD | 30/14 | 100/39 | 180/47 | 243/48 | 131/34 |
| G3FXB  | 13/11 | 48/33  | 108/65 | 91/55  | 56/36  |
| VK4XA  | 26/18 | 44/28  | 145/56 | 133/53 | 52/41  |
| VK9NS  | 29/28 | 55/29  | 152/54 | 164/49 | 42/20  |
| VK3XB  | 6/6   | 21/17  | 128/46 | 129/53 | 31/29  |

## RSGB REMARKS

"80 poor, 40 not too bad, 20 and 15 excellent, 10 patchy". This sums up the reactions of most entrants to conditions during the 1982 Commonwealth Contest. The HF bands provided very good openings and for many 21MHz was open for the entire 24h period. However, the lower frequency bands and 3.5MHz in particular were rather poor, with static levels, especially in North America, making copy of weak signals very difficult.

The contest was dominated by Canadian entrants this year and they took the leading four overall placings. Top honours went to a previous overall winner, Lee Sawkins, VE7CC, with last year's winner, John Sluymer, VE6OU, pushed into second place. Top positions were closely fought, the final placings being determined very much by accuracy of logs and attention to bonus points, rather than by sheer number of contacts. It is pleasing to see some increase in activity from VE, and it is hoped that efforts at increased publicity are bearing fruit. The HF Contests Committee is grateful for the help of CO magazine in this respect, which reproduced the rules in full, but it is unfortunate that despite a considerable membership in Canada, ARRL published only a passing reference in QST.

Russ Coleston, VK4XA, again led the Oceanic stations, which were well represented thanks largely to the excellent publicity organized by

John Tutton, VK3ZC. Jim Smith, VK9NS, provided many welcome bonus points giving many stations, particularly in Europe, their first contact with Norfolk Island on 7MHz. VK9NM on Lord Howe, and VK9XM on Christmas Island provided additional DX spice during the contest.

It is not until eighth overall position that the first European call appears. Al Slater, G3FXB, maintained his apparently relentless hold on the Colonel Thomas Rose Bowl for the leading UK entrant. Attention to log accuracy, a comprehensive selection of competitive antennas, and the benefit of years of propagation knowledge which produces just those few extra bonus contacts seemed to be the keys to his success. Many logs included comments that there are few contests which have this kind of strategic requirement, and the Commonwealth Contest is a welcome relief from the more common high QSO rate type of event.

At the outset of adjudication, just five points separated the two leading logs in the listener section. After extensive checking, the same narrow margin remained! So this year the Receiving Rose Bowl was awarded to C. Bradbury, BRS1066, with Eric Trebilcock, BCRS195, relegated to second position. Ron Thomas, BRS15822, who has won this section a number of times in the past, mentioned that this would be his last entry in the receiving section as he has now passed his licence examination and expects to hold a G4 call by next year. Congratulations, the committee looks forward to an extra entry in the transmitting section.

The only area of the rules which was commented on was the system of bonus scoring. There was some feeling that UK prefixes or countries should score separately and that some adjustment should be made to more equally balance the scoring between Canada, Europe and VK/ZL. Over a number of years covering sunspot maxima and minima, it is evident that the scoring system is, in fact, fairly well balanced. In recent years, G stations have come close to being overall winners and it must be remembered that the majority of overall leaders have very extensive antenna systems, both for the HF and the lower frequency bands, and that this may be the deciding factor rather than any supposed geographical advantage.

## BERU 1983

1200UTC 12th March to 1200UTC 13th March  
Rules in February AR.



# QSP

## HF BAND USAGE.

So that everybody may have reasonable access to frequencies in the amateur bands it is a very long standing self-regulatory condition that small parts of the HF bands are set aside solely for CW operations. This is to avoid general chaos and is achieved by gentlemen's agreements. These are the segments:

## CW ONLY

3500-3535 kHz, 7000-7030 kHz, 14000-14100 kHz, 21000-21150 kHz, 28000-28200 kHz.

If you hear voice modulation signals in these segments it is recommended that you tactfully remind those concerned that they are operating in the CW-only band segments and a QSY outside the segment would be appreciated.



# CONTESTS

Reg Dwyer VK1BR  
FEDERAL CONTEST MANAGER

Box 236, Jamison, ACT 2614

## CONTEST CALENDAR FOR NOVEMBER 1982

|       |                            |       |
|-------|----------------------------|-------|
| 3-4   | YLRL ANNIVERSARY PHONE     | CO    |
| 6-7   | INTERNATIONAL POLICE ASSN  | AR    |
| 6-7   | ARRL CW SWEEPSTAKES        | CO    |
| 7     | CZECHOSLOVAKIAN CONTEST    |       |
| 13    | ALARA'S SECOND CONTEST     | AR    |
| 13-14 | EUROPEAN RTTY              | CQ    |
| 20-21 | VK VERSUS THE WORLD CW QRP | AR    |
| 20-21 | ARRL PHONE SWEEPSTAKES     | CQ    |
| 27-28 | CQ WW DX CW                | AR/CQ |

## DECEMBER

|       |                                |    |
|-------|--------------------------------|----|
| 4     | START OF ROSS HULL VHF CONTEST |    |
| 4-5   | ARRL 160 MTR CONTEST           | CQ |
| 11-12 | ARRL 10 MTR CONTEST            | CQ |

## JANUARY

|                 |                               |  |
|-----------------|-------------------------------|--|
| 15              | POTOMAC VALLEY RADIO WCY TEST |  |
| 29-30           | WHITE ROSE SWL 3RD TEST       |  |
| <b>FEBRUARY</b> |                               |  |
| 12-13           | NZART NATIONAL FIELD DAY      |  |
| 12-13           | JOHN MOYLE NATIONAL FIELD DAY |  |

## INTERNATIONAL POLICE ASSOCIATION

The German section of the Police Assoc. is organising a contest which will enable competing stations to qualify for the Sherlock Holmes Award and Trophy.

**PERIOD** — Saturday 6 November to Sunday 7 November.

**TIME** — 0000-0300 UTC; 0700-1000 UTC; 1400-1800 UTC.

**CALL** — CQ IPA.

**MODE** — CW and SSB only (no crossmode or crossband).

**EXCHANGE** — Non members: RST and serial, 56(9)001; IPA members: RST, serial and IPA, 56(9)001 IPA; US stations plus state abbreviation, 58(9)001 IPA V.

**SCORING** — 2 points for 80 and 40 mtr QSO; 8 points for 80 and 40 mtr DX QSO; 4 points for 20, 15 and 10 mtr QSO.

Stations may be worked only once per band. **MULTIPLIER** — IPA country/US states per band.

**RESULT** — IPA countries x points = total points.

**FREQUENCIES** ± 25 kHz.

CW = 3.575, 7.025, 14.075, 21.075, 28.075 MHz

SSB = 3.650, 7.075, 14.295, 21.295, 28.650 MHz

SSB, DX = 3775, 3800 (too bad we don't have them).

Logs to Anton Kohten, DK5JA PO Box 40 01 63 4152 Kempen 1 West Germany.

Further information on the awards is available from the FCM, please send SASE for information.

Contest front sheets for the CQ WW DX Contest are also available from me for a SASE or an IRC to cover the postage.

## RULES FOR THE 1982 ROSS HULL MEMORIAL CONTEST

**OBJECTS**  
Australian amateurs will endeavour to contact as many other amateurs as possible. Entrants must operate within the terms of their licences.

**PERIOD**  
0001 UTC 4 December 1982 to 2400 UTC 9 January 1983.

**EXCHANGE**  
RS(T) plus a three figure serial number starting at 001 and increasing by one for each contact, when 999 is reached a start is made again from 001.

**BANDS**  
All amateur bands above 30 MHz, however cross band contacts are not permitted. Operation via active repeaters and translators is not allowed.

**OPERATOR**  
Single operator only. One transmission only at one time.

**CONTACTS**  
Two contacts per UTC day per band with each station providing 10 hours have elapsed since the previous contact.

**DURATION**  
(a) 7 UTC days — not necessarily consecutive.  
(b) 2 UTC days consecutive.

**SECTIONS**  
(1) Phone (AM, FM, SSB, ATV and SSTV).  
(2) CW (CW and RTTY).  
(3) Receiving (any mode).

**LOG SHEET**  
It is desirable that complete logs for the whole contest be submitted for cross checking purposes; photo copies are very acceptable.

The following details must be shown: Time UTC, Band, Emission, Stn worked, Tx exchange, Rx exchange, Points, Bonus. Each page must be totalled at the bottom.

**FRONT SHEET**  
A front sheet must be attached showing the following information in this order:

Section, call sign, list of 7 best UTC days with daily score and daily multiple, daily total plus 7,

day total, list of best 2 UTC days with daily score and day multiplier, daily total plus 2 day total, name and postal address.

**SCORING TABLE — AUSTRALIA**

| Distance     | 52 | 144 | 432 | 576 | 1296 | 2304 | up |
|--------------|----|-----|-----|-----|------|------|----|
| Up to 100 km | 1  | 2   | 5   | 20  | 30   | 50   |    |
| 100-200 km   | 2  | 5   | 10  | 30  | 75   | 100  |    |
| 200-400 km   | 10 | 20  | 40  | 50  | 100  | 200  |    |
| 400-800 km   | 20 | 35  | 60  | 75  | 150  | 300  |    |
| Over 800 km  | 10 | 50  | 80  | 100 | 200  | 500  |    |

**BONUS**  
(a) For each new call area in Australia, including own call area, 20 points once only per band per UTC day.

(b) For each prefix worked outside Australia, 40 points once only per band per day.

**SPECIAL VK6 BONUS**  
VK6 stations only shall double the final daily score.

**MULTIPLIER**  
All stations shall multiply the UTC day score, including the Bonus (a) and (b), by the number of bands used for scoring during that day.

**SCORING TABLE — OVERSEAS STATIONS**  
52 MHz — 50 points; 144 MHz — 100 points; 432 MHz — 200 points. For contacts with Australian stations only.

**AWARDS**  
A perpetual trophy is awarded annually for competition between members of the Wireless Institute of Australia. The winner's name is inscribed on the trophy and he receives a suitable certificate. The entrant with the highest score in either the 7 day or 2 day division will be the winner and his division will hold the trophy for one year.

Certificates will be awarded to the highest score in both the 7 day and the 2 day divisions. A winner of a 7 day certificate cannot be awarded a 2 day one as well.

Overseas entrants will be awarded certificates on the same basis, one for each call area. **SUBMISSION OF LOGS**  
Entries are to be sent to the FCM, Box 236, Jamison, ACT, and received no later than 28th February, 1983 and endorsed "Ross Hull Memorial Contest".

**RECEIVING SECTION**  
Logs must show the same information as a transmitting log except for the second number exchanged. If both stations are heard both can be claimed but on separate lines of the log. Scoring will be as for a transmitting log.

Any scoring contacts can be logged, there is no limit to the number of times that one station can be logged.

The decision of the FCM is final and no correspondence will be entered into. **AR**

## DUZE DEWZ DUSE PDUEWS DEWS DYOWS DEEUWS DEUSE DUESSE

Dang it! There's got to be a way to spell the word. I tried to look it up in the dictionary, but how can anyone look up a word if he doesn't know how to spell it? Webster should get onto a different system so we can find out how to spell words. What we are trying to say, though, is that it is that time of the year when we should all dig into our pockets for some of that green stuff to help us continue to grow. If you can talk the family into going over to see grandpa and grandpa at dinner-time, you can save the amount required for our money man and make a great big smile adorn his face for a long time. How about it?  
(Subs notices will be in the mail to you shortly. Ed.)



# QSP

## FIFTY THIRD ANNIVERSARY

The Radio Society of Sri Lanka celebrates its 53rd year of amateur radio activity in Sri Lanka in 1983. To celebrate the event arrangements have been made for the issue of a Commemorative Stamp of Rs.2.50 denomination with a first day cover.

The Minister of Posts and Telecommunications has accepted the invitation for the cancellation of the 1st stamp at a ceremony to be held at the General Post Office, Janadhipathi Road, Colombo 1 on January 17, 1983 at 0900.

Those wishing to purchase this stamp may forward their requests to The Director, Philatelic Bureau, 4th Floor, Ceylinco House, Colombo 1 with the necessary remittance to include return postage.

**AR**

## "COASTWATCH"

This is the new code name of the Coastal Surveillance Centre in Canberra which controls marine search and rescue operations over an eighth of the world's surface. This centre was involved in fifty major operations and 2000 incidents last year.

COASTWATCH activities include civil surveillance of Australia's 36,000 kilometre coastline, marine search and rescue operations and the monitoring of the positions of merchant ships and foreign fishing vessels.

The new charge free number of COASTWATCH is (062) 47 6666. The number (062) 47 5244 which is used for reverse charge calls remains unchanged. Make a note of these numbers in your log now.

**AR**

## GENTLEMAN'S AGREEMENT

All 21 MHz operators — please remember that 21.100 - 21.150 MHz is out of the phone sub-allocation as recommended by the International Amateur Radio Union and the "Gentleman's Agreement".

**AR**

## DXCC

At the time of writing, no news is available on the status of certain DXCC countries. It was rumoured that HK0/KS4 Serrana Bank, 8Z4 Neutral Zone were to be deleted by the ARRL DX Committee. Further, BY1PK QSLs are now being accepted.

During a recent trip to Burma, K5VT, was refused permission to operate and was told by the Vice President of that country that amateur radio was not permitted. K5VT, who has been able to put many previously difficult countries on the air, would be expected to be able to obtain a licence if they were available.

The only acceptable YI(Iraq) QSLs of recent times are those from YI1BGD and YI4SC. The ARRL are not, at present, satisfied with documentation of other operations. Finally this paragraph from the DX News Sheet issued by the RSGB may cause a few people to increase their blood pressure! Carl Henson, WB4ZNH is lobbying for a change to DXCC Rule 12 in the form of a new paragraph reading: "For (a) and (b) above, the taking of lists and the solicitation of DX stations to operate from lists or nets, is poor operating ethics." I personally do not have views either way. What intrigues me is that if the above is accepted, how is the ARRL expected to decide which QSOs were list operations and which were not?

## THE TORSHAVN AWARD

The award is available to all licensed radio amateurs and SWLs.

The rules are as follows:-

**PERIOD:** May 1st 1983 0000 UTC to January 1984 2400 UTC.  
**BANDS:** All bands from 3.5MHz to 432MHz excluding 10-18-24MHz.  
**MODES:** All modes.  
**CLASSES:** One class only.  
**SCORING:** 3.5 - 7 MHz ..... 40 Points  
14 - 21- 28 MHz ..... 30 Points  
144 - 432 MHz ..... 75 Points

Contacts with the club station OY6FRA count double on all bands and 75 points is needed to claim the award.

Cost of award is 10 IRCs.

**APPLICATION:** No OSL cards, but a list confirmed by two licensed amateurs to:- FRA Awards Manager, PO Box 343, Torshavn, 3800 Faroe Islands.  
(Thanks VK4KAJ).

## WORKED ALL OY, WAOY

The WAOY Award is available to all radio



Mike Bazley, VK6HD

FEDERAL AWARDS MANAGER

8 James Road, Kalamunda, 6076

amateurs and is issued in 3 classes: WAOY I, II and III, CW or Fone (SSB or AM) not mixed.

VK Amateurs  
WAOY I ..... 25 Points  
WAOY II ..... 15 Points  
WAOY III ..... 10 Points

**BANDS:** 3.5 - 7 - 14 - 21 - 28 MHz.  
**SCORING:** One point per QSO on 28, 21 and 14 MHz, two points on 7 and 3.5 MHz. Points being doubled up on all bands when working OY6FRA, 6NRA, W2GKH and SM5WJOY.

**DATE:** ALL contacts after 11th April 1965 are valid.

**APPLICATION:** Confirmed list (no cards) and 10 IRC coupons to:- Awards Manager, Heri Olsen, OY3H, Box 184, Torshavn 3800. Faroe Islands.

## THE GOLDEN SHEARS AWARD

Sponsored by Branch 46 Wairarapa. Contacts to be with Branch 46 financial members during the period 1st March/31st March, 1983 on the following basis:-

H/F and SWL:

1. Net contacts are eligible.
2. Points required: VK — 7 Points.

VHF:

1. Repeater QSO eligible.
2. Net contacts on repeater NOT eligible.
3. Points required: VK — 3 Points.

GENERAL:

1. Any band/mode or combination (except cross band).
2. ONE contact per member UNLESS member is operating Club Station or Mobile within Wairarapa.

3. NO QSLs required. Give FULL QSO data certified by another licensed amateur.
4. Application with \$2.00 NZ or equivalent International Money Order to:- Awards Manager, PO Box 860, Masterton, NZ before 31st August, 1983.
5. POINTS SYSTEM: For contacts as follows:- Golden Shears President ZL2AHU — 3 Points  
Club Station ZL2OA — 2 points.  
or YL Operator — 2 Points.  
or Farming Branch Member — 2 Points.  
or Mobile Contact within Wairarapa — 2 Points.  
Branch 46 Member — 1 Point.
6. AIM . . . To help fund an operating room for emergency situations.

## OZ PREFIX AWARD

The Copenhagen Division of EDR on the occasion of the 50th anniversary of its foundation issues the OZ-Prefix-Award. This award is available to licensed amateurs and SWLs anywhere in the world under following rules:

DX-Stations must work 1 station with each prefix OZ1 to OZ9 (9 QSL-cards).

A QSL-card from the club station OZ5EDR can be used as a joker to replace a missing QSL-card.

All amateur bands and modes are allowed. Special endorsements for CW, 2xSSB, RTTY, one band.

Please do not send QSL cards, but send a GCR list with the fee of 10 IRCs to: OZ1ACB, Allis Anderson, Kagsaavej 34, DK-2730 Herlev, Denmark.

This award also includes a sew-on EDR cloth badge.

## ZS TOP BAND CERTIFICATE

1. To qualify for this award DX stations beyond 1600 kilometres of the borders of the Republic of South Africa need to contact only a single Division of the Republic of South Africa.
  2. A GCR list from members of societies which are members of the IARU are acceptable if duly checked and certified by their Awards Managers. (Send application to VK6HD).
  3. All contacts must be made after 1st January, 1960 with minimum CW report of RST 338 or phone or SSB R3 S3.
  4. The certificate is issued free of charge to members of the SARL, but non-members are required to pay a charge of R1, 50 (10 IRCs).
  5. Send application, with fee to ZS1ALO, Awards Manager, PO Box 3911, Cape Town, South Africa 8000.
- Happy hunting 73s es DX de Mike VK6HD.

AR

## WHAT FREQUENCY IS MY RTTY SIGNAL ON?

Most operators are using audio tones into a microphone socket to send RTTY and the following comments refer to such a set-up on HF bands.

Those using transceivers with digital frequency meter readouts or accurate dials often assume they are on the frequency thus indicated; however this is NOT the case.

If a separate frequency meter is used to measure RF output it will be discovered that the transceiver indicated frequency and the frequency meter readings will differ by an amount equal to the pitch of the audio tones used.

e.g. Using high tones mark is 2125Hz and thus when the transceiver is in the normal LSB position this means the mark carrier radiated

will be 2.1 kHz lower than the transceiver indications.

To get RF output on say 7.040MHz you would need to tune to 7.042.1MHz when using high tones or 7.041.13 when using low tones.

To sum up, it must be remembered that the transceiver frequency readouts show the suppressed carrier frequency and NOT the resultant side band frequency.

Further to the above and considering suppressed carriers, if your suppressed carrier is 40dB down, then when someone tells you that you are 40dB over S9 your "suppressed" carrier will be S9!!! This makes a strong case for true FSK when using high power.

—From "South Aust. RTTY Group News" Aug '82  
AR

## GOOF DEPARTMENT

In our review of Les Moxon's book "G6XN HF ANTENNAS FOR ALL LOCATIONS" — August AR Page 53.

Three typographical errors have crept in — They are:- 1st column, 13th line from edge of page, "QUALIFIES" should be "QUANTIFIES".

2nd column, 4th and 5th lines from top — same again.

2nd column, 9th line, 2nd para — "QUALIFY" should be "QUANTIFY".

Please amend your copy now — Our apologies to all concerned.

(VK3UV — Ed.)

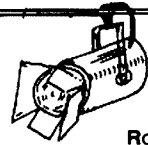
AR





# SPOTLIGHT

## ON S WLing



Robin Harwood, VK7RH

5 Helen Street, Launceston 7250

Well, the year is rapidly coming to a close. This year has certainly seen quite a lot of activity on the shortwave bands, especially from unexpectedly quiet regions of the world such as the South Atlantic. Now that the action has died down, the amount of activity has also gone down in proportion. Although, with the Middle East still being on the boil, many SWLs are monitoring stations and programmes emanating from this perennial trouble spot to keep in touch with recent developments.

As far as conditions or propagation have been during this year, the average listener has experienced an increase in ionospheric disruption to the HF spectrum. This is to be expected as the sunspot numbers decline. One by-product of these solar flares and radio blackouts, is that stations that are not normally heard because a more powerful station uses the channel, can be occasionally observed, when for instance European signals are absent or are well down in signal strength. I find that signals from equatorial regions are particularly noticeable when propagation to Europe and the Northern Hemisphere areas is reduced. You will notice, especially if you live in areas where you can observe the Aurora Australis, that there will not be good propagation to stations under 500 miles, but signals from many thousands of kilometres away will be heard. This was the case on 3.5 MHz, when I had a sked with a VK7 at a time when the signals are usually well over S9, but on this occasion we could not read each other's signals. Also VK4's were coming in very loudly and clearly, much earlier than they are accustomed to doing. That night (Sept 3rd) there was quite a spectacular display in the skies from the Aurora.

Usually for a couple of days, after one of these displays, general propagation conditions are very poor, with frequent blackouts. Although you may not be able to observe these displays visually, one can notice their presence on HF by a rapid flutter on carriers. It also destroys the intelligibility of modulation, making the audio sound very thin and reedy.

### "VOICES" FAILED:

As I predicted in this column, the magazine "Voices" has gone into liquidation. According to an interview on "Media Network" — the Radio Netherlands communications magazine — one of the individuals behind the publication stated the main reason it failed was that it was unable to attract enough sponsorship or advertising to make it viable commercially. As there are publications catering for those interested in international programming available from non-commercial organizations, the average shortwave listener will not miss out. However, quite a number of individuals lost out by subscribing to "Voices". The moral is to go for publications that have been around for some time, and not be attracted by a lot of glossy advertising with attractive subscription rates.

### MORE SW BULLETINS

A few months ago, I did mention that there was a semi-weekly bulletin concentrating on developments in Africa called "QTH Africa". I note in the September WRTH Newsletter that the publisher has suspended publication because of the pressure of other activities. We hope that this handy bulletin will one day make a reappearance to assist those interested in broadcasts on shortwave from Africa.

Talking of bulletins, I recently received a bundle of magazines from a penfriend in Finland. They were very interesting and would contain a wealth of information on Shortwave radio, if I could read either Finnish or Swedish! Scandinavia contains most of the active DX clubs in Europe, and several clubs or organizations there are competing to produce a good magazine. Fortunately this bundle did contain some publications in German, which luckily I did learn a little of in college.

"Weltweit Horen" is the title of a monthly publication in German published by the AGDX Club in West Germany. It also has an occasional article written in English. The subscription price is \$US22 (surface). However, the same organization has an International department, which is better known as the Worldwide DX Club, with a monthly magazine in ENGLISH for a subscription price \$US12 (surface). A combined subscription to the English and German publications is \$US31. This club is one of the stronger European organizations, and has been going since 1966. It has regular segments on HCJB's German language DX programme.

### ZENITH GOES QRT

Another well-known radio manufacturer has discontinued its line of shortwave receivers. Some of our older DXers will remember the Zenith Receivers. These receivers have been around for fifty years or more. According to the September ANARC Newsletter, Zenith have departed the radio field altogether. Apparently they could not compete today with the modern Japanese models economically. In the same issue, it announced that Radio Shack/Tandy are considering re-entering the receiver field, with models manufactured in either Taiwan or Korea under their brand name.

### WHERE ARE THE SWLs?

Just how many people do listen to shortwave programmes? It is a fairly difficult task to quantify the listening audience as it does depend on the station or its programming. But a recent finding asserts that it varies with the current state of the world's affairs. At times of crisis, the listening audience increases markedly, judging on listeners' mail at the various international stations. The audience in Europe and the USA has remained static, but the audience in Third World countries has dramatically increas-

ed also, judging on where most of the mail comes from.

### QRL VK4??

Incidentally, I will be in VK4 in December, and will hopefully be able to detect the differences in propagation between the southern states and Queensland. My last trip was in the middle of winter, so it will be interesting observing what can be heard. I imagine that the frequencies will be rather noisy in summer in tropical areas, from what I have read. But I do expect that I will probably be occupied with other activities whilst I am there. But I would welcome the opportunity of meeting SWLs or DXers in the Brisbane/Gold Coast region if it is possible. I would suggest that those interested in such a meeting contact me before the 20th of November to see what we could arrange. I am also hoping to be on 2 metres with a hand-held unit.

### MEDIUM WAVE

While I am in the North, I do hope that it will be possible to receive the Indonesian stations on medium wave, or should I say the private, non-government stations. There are quite a number of these stations operating at present, mostly on low power of about 250 watts or less. Most are licensed, but there are some pirate stations observed. I recently received a summary of these stations called "ACARA RADIO SELURUH INDONESIA" with the programme details of the respective stations. They seem to operate between 0500 until 2400 local Indonesian times. I do note that ALL stations are obliged by law to carry the news from the governmental RRI network, and are not permitted to originate any news or current affairs programmes on their own initiative.

As many DXers are aware, there are quite a number of RRI stations active on shortwave, but the trend, according to another penfriend, is to relocate some of the smaller district stations on to the medium wave of FM, leaving the larger stations with higher power such as Ujung Padang or Palembang or in Jakarta itself to link with other remote areas via shortwave. For those who are especially interested in DXing Indonesian stations, I would recommend that you subscribe to the Down Under DX Circle, which specializes in Asian stations. Write to them at 7 Donald Street, Burwood Vic. 3125. The cost is 6 IRCs per issue.

Harking back to AGDX, I see elsewhere they are a Federation of 13 German-speaking DX clubs in Europe, and not just one individual club.

Well, that is all for this time. Until then, the best of 73's and good DXing!

—Robin VK7RH

AR



# JOIN A NEW MEMBER NOW!



# VHF UHF - an expanding world

Eric Jamieson VK5LP  
1 Quinns Road, Forrester, 5233

## AMATEUR BAND BEACONS. . .

Refer September 1982 issue. Next listing anticipated December 1982.

The only comment this month re beacons is the continuing concern felt east of Western Australia, and VK5 in particular, that the 144 MHz beacon most of all is not operating from Albany. We seem to be really lost over here without it, and hope it will soon be available again.

## COWELL REPEATER

The new repeater located at Cowell on Eyre Peninsula (South Australia's west coast) is now operational and providing a very good coverage. Bob VK5ZRO reports it is available on many more occasions than the Channel 2 repeater in the mid-north, no doubt due to terrain. Bob reports even working through the Cowell repeater whilst travelling down King William Street in the heart of Adelaide! Much credit for the repeater is due to Paul VK5QM.

## AURORAL CONTRACTS

Mick VK5ZDR was pleasantly surprised one night around mid-September to work into VK3 and VK7 on 6 and 2 metres via auroral propagation. Signals were up to S9 but intelligibility suffered due to that strange auroral effect which tends to garble the sound on SSB and to broaden the signal, but does not seem to worry CW to the same extent. Contacts were made late at night, around 1430UTC best in VK3 being VK3AQR, whilst Ian VK7ZIF made up the Tasmanian end. A week or so later Mick again observed the phenomenon but signals were too weak on this occasion to produce any worthwhile contacts.

## CEOUNA STATION

Operators several years ago will remember the exploits of Kerry VK5SU who really made things tick from Ceduna on the far west coast of SA, particularly on 6 metres, winning the Ross Hull Contest several times. Later he tried 144 MHz and found the location interesting, being somewhere near the centre of the path between Adelaide and Albany.

Ceduna has been off the map mostly during recent times since Kerry went to NSW and became VK2BXT. Now, a new station has come on the air from Ceduna, VK5KMW. Not many details are known at this stage but at least two contacts have been with Mick VK5ZDR, the first on 24/9 at 2330UTC with signals 5 x 9, and again the next morning about the same time, but the signals had dropped off considerably.

We now await with some considerable interest the forthcoming Es season to see if Ceduna is still the prime operating spot it was years ago!

## 432 MHz IN VK5.

A number of new operators are getting onto this band and the upsurge in activity is most welcome. Amongst these are Barrie VK5ZAU who has come up on 432.1 MHz presently with 1 watt but has been worked by Bob VK5ZRO at least. Others to put signals on the SSB section of the band are Andrew VK5ZUC, Tony VK5KAT, Peter VK5KPJ, David VK5KKA, all from the Adelaide area; Ken VK5KEN from Smithfield, Paul VK5QM at Whyalla, and Ron VK5ZLJ has been noted from Port Wakefield.

The ever faithful Bob VK5ZRO is also there, working across to Don VK5ZRG at Whyalla. David VK5KK comes on occasionally, as also does VK5LP, Mick VK5ZDR is there too, plus Syd VK5ME, and David VK5CK has been threatening to improve his 70cm signal for some time. There are still quite a few others but they haven't been heard here for a while, but I'm hoping!

## 144 MHz

It is noted with interest that there are quite a few new call signs appearing on the 2 metre band, particularly at the lower end where SSB and CW contacts take place, and it is good to see increased use of the band being made.

It has been noted however, that there is a growing tendency for local extended period contacts to be made on the recognized calling frequency of 144.100 MHz. In the main I am sure this is due to operators not really being aware of what constitutes accepted operating practice on 144 MHz and other bands for that matter.

144.100 MHz has been long recognized as a calling frequency on 2 metres, ie if you are looking for a contact then it is most likely to be initiated if you call on that frequency. It would seem desirable then for both parties when contact has been made to move away from the calling frequency to leave it available for someone else to use in the same way. For a contact to be maintained there, particularly between two local area stations, makes it very difficult for anyone to hear a weak signal from some other area.

If your contact is only to be of short duration then it may not matter quite so much, but quite often what begins as a short contact can extend to ten minutes or even longer, so it may be good practice at all times to move off the calling frequency. When one speaks about moving off the calling frequency this doesn't mean moving say 3 or 5 kHz. If in the metropolitan area, your signal will still effectively blanket out any weak signals. A move of at least 20kHz is preferable, and maybe 50 kHz even better, bearing in mind you can always come back to the call frequency at the conclusion of your contact to see who else is there.

The above comments are directed to all operators, not only the new ones, as it is not uncommon to hear operators who should know better blocking out other signals on or near the calling frequency. So it behoves all of us to operate with due regard to other users of the band, remembering that maybe you cannot hear any other stations on 144.100 but there could be others better situated who can hear signals, so by playing it safe everyone should be able to operate satisfactorily.

## NEWS FROM THE WEST

It seems that most of what is happening is taking place in Western Australia, or else these are about the only areas writing in these days!

Graham VK6RO has written to say he made another trip up to Carnarvon and Dampier from 31/8 to 9/9/82, and worked a number of JA's on 6 metres. Bob says "Propagation was rather poor and the openings short, but at one stage I was driving at 110 km/h and working JA's at S9 + 20dB on SSB both ways, the whip anten-

na was at about 45 degrees — the band was well and truly open!

"Total JA's worked 83, areas JA1,2,3,4,5,6,7,9, no sign of 8 or 0; SSB: 78 worked 5x9; AM:1 worked 5x9; FM: 2 worked 5x9; CW: 2 worked 529. Times: various from 0340 to 1300UTC, with some openings being as short as 5 minutes. JA2IGY beacon heard 10 times. TV on 49.750 heard 5 times.

"Equipment: FT690R plus 30 watt PA and 1/4 wave whip on roof of car. Openings: 11 all told. General: all contacts made from mobile. Heard KA6OR Okinawa calling CO 5x1 at 1255UTC on 4/9, no QSO.

"I have now worked 801 contacts to Japan mobile since October 1979, plus KG6DX, HL2JD, and heard ZS2SS, P29ZSA, H44PT and VS6BE. Have also worked mobile to mobile with JA4HTW at 5x7 both ways." That's a pretty good effort, Graham. Additionally, Graham has worked ZL, YJ8, H44, VS5 and half P29 from home, and crossband 28 to 50 MHz with KH6HI, ZS6LN and VS6BE.

Whilst still in Western Australia, two letters have come from Peter VK6ZDY, with an outline of his activities in that State. The first letter came whilst I was on my around Australia trip, so it is somewhat late, but the following details are included because it gives a good coverage of winter time 6 metre conditions, where it has been known for years that there is enhanced propagation in the winter time as well as the summer, but not to the same extent.

"1/6: 0145UTC weak northern 50 MHz TV; 9/6: same, 5x5; 10/6: 0848UTC heard JA's working VK4, 0854 worked JA6LJO 4x1; 11/6: 0750UTC weak JA's on 50 MHz, then some TV, then close at 0840UTC, 0859UTC TV harmonics on 48 MHz, 0902UTC Malaysian TV 53.750 5x9; 12/6: 0200UTC hearing VK5VF and weak VK5's, 0223UTC VK5ZBU, 0238UTC CH.0 Brisbane, 0247UTC VK5AGM 3x1, 0735UTC 50 MHz TV weak; 13/6: 0523UTC VK5ZRO 5x7, 0525UTC VK5ZBU 5x9, then VK5KK 0620UTC hearing VK6RRT at Carnarvon 5x7 backscatter, 0831UTC VK3RMV beacon 5x3, 0840UTC VK6OX Andy at Carnarvon 5x9, 0909UTC VK8VF beacon 3x1, same beacon into Carnarvon 5x9 16/6: 0540UTC TV Brisbane 5x7, 0610UTC VK5VF weak, 0615UTC VK5ADT 5x2; 20/6: 0703UTC TV Brisbane; 26/6: 0442UTC VK3RMV weak, 0500UTC VK5VF strong, 0506UTC VK5ZRO 5x9, 0509UTC VK2ZIB 5x3, 0514UTC VK2YOE 5x3, 0525UTC VK5ZEE heard working VK2, 0529UTC VK2DDG 4x1, 0536UTC VK5ZEE 4x2, 0545UTC TV Brisbane; 27/6: 0430UTC TV Melbourne, VK3RMV beacon, 0444UTC VK5ZDR 5x5, 0450UTC TV Brisbane, VK5VF; 0503UTC VK5ZRO 5x5, then VK5ARZ, VK5AMK, 25/7: 0700UTC 50MHz JA's 5x3, 0840UTC weak commercial traffic from north on 50 MHz; 28/7: 0810UTC same, 29/7: same, plus TV harmonics; 30/7 same, 7/8: same; 8/8: 0100UTC weak JA's and CW on 50 MHz, 0112UTC JA1,3,6, 5x7 on 50 MHz, contest in progress, 0140UTC CW on 49.975, 0204UTC intense white noise from north with QSB — Solar activity? 0231UTC same intense white noise."

Peter uses an FT625R into a Swan MK6B linear with 400 watts PEP, home brew 9 element yagi 12.6 dB gain, 30 dB F/B, 30 foot boom, 18 metres high, fed with HM8 solid

aluminium jacketed coax. QTH is 300 metres ASL in the Darling Ranges, 17 km from Perth. Also, Peter is looking for 6 metre meteor and forward scatter skeds with any interested persons.

The second letter from Peter VK6ZDY is a follow on from the previous one. 9/8/82 0321UTC TV harmonic weak on 50.332; again at 0920UTC but much stronger; 10/8: 0320UTC weak TV 50.332; 13/8: same; 14/8 same; 15/8: 0744UTC JG2AJK 4x2, JL1CJM 4x2, JA4MBM 5x9, JA5CMO 4x2; 17/8: 0320UTC 50 MHz TV; 18/8 same; 22/8: Australian military traffic on 50.100 5x9 on FM!! This was a "reserve" exercise. 15/9: 0402UTC 50.075 beacon weak, 0411UTC strong TV on 48 to 49 MHz; 19/9: 1225UTC 50.100 Australian military traffic 5x7 on FM; 21/9 0829UTC weak JA's on 50 MHz, strong TV 48/49 MHz.

These two letters from Peter certainly indicate the amount of possible activity in which you can participate if around at a time of the year when one might generally be forgiven for saying the band is closed!

#### LETTER FROM WOOMERA

Neil VK5ZEE at Woomera has written to say that he and his father VK5LA are currently the only ones in that town who operate on VHF, the others being mainly 14 MHz operators.

On 31/7 at 1330UTC until 1445UTC Neil had access to Adelaide Ch. 8 repeater and despite repeated calls was only able to raise VK5KPP at 1426UTC. He also tried on 144.100 SSB to no avail. From then until 21/8 no signals at all on 52 or 144 MHz, then on that day at 2030UTC Ch. 8 repeater was 5x9 with the return signal on 147.000 S5. At 2145UTC he contacted VK5KNE mobile on the South Eastern Freeway. At 2205UTC VK5ZUC came on to the channel and requested a contact no 144.100 SSB. At 2208UTC contact was established and maintained a workable signal until 2338UTC. In between he worked VK5ZRO at 2244UTC and VK5ZDR at 2314UTC.

Neil's equipment is an IC560 and 5 elements on 6 metres, FDK Multi 750A and Lunar 80 watt amplifier to 5 elements vertically polarised for FM, and SSB 13 elements about 10 metres high, on 144 to 148 MHz. Soon to be in use is a 144-432 transverter and a pair of 11 elements. He also has 70 cm ATV under construction with only the RF amps and antenna system to complete. So far access to Oscar and RS satellites unfruitful but more positive attempts are to be made in the near future.

Neil has been VK5ZEE since arriving in July, previously VK2ZEE. His father is VK5LA and spends most of his time on 28 MHz but shares some of the VHF gear.

If you are interested in contacting Neil you might remember his gear usually runs continuously from 0630 to 1330UTC, 2030 to 2200UTC and quite often also from 0230 to 0315UTC. Neil would certainly welcome contacts. He would also like to install some beacons at Woomera but needs to convince the HF operators, who comprise most of the members in the "mandatory" club, (which then permits transmitters to be operated in the restricted area of Woomera) of the need for such devices, which may well be a very difficult task!

#### THE OVERSEAS SCENE

According to Bill Tynan, W3XO, of QST's "The World Above 50 MHz" their 1982 Es season "can probably be described as having its up and downs. There certainly have been days at a time when not much happened. If one was not paying very close attention to the band, or listened occasionally, the conclusion could be reached that openings have been few. For those who stuck with it, however, the rewards have been handsome. Many of the faithful have added four or more countries to their totals.

"*KBFEFS was one of those stalwarts. On 1/7 Andy worked TU2NA, and the following day it was country 51 with KA3BUJ/8R1, and on the 3/7 a further country was added with 4U1UN. Other alert 6 metre operators were also getting their share of DX. Through K5ZMS I learn that YS1ECB was worked by WB4PFB and others on 20/6. VE1BNN found the period 4/7 to 8/7 very productive with a crossband QSO with CT2EE. It is amazing how many times the path from the East Coast to Azores has been open. Reg VE1BNN heard FY7THF beacon on 7/7 with very strong signals, and on that day Reg worked his 55th country with KA3BUJ/8R1.*"

Looking at the continuing overseas reports of long distance contacts it seems reasonable to assume that the oft quoted statement that 6 metres never closes, only the operators do, may be nearer the truth than realised. It does seem that Cycle 21 has given a lot of people a taste of what 6 metres has to offer and I am sure we will hear from time to time of good and somewhat unusual contacts in the future as compared with what seemed to be available before Cycle 21. If that is true, then as Bill Tynan says, the vigilant will be rewarded.

#### MACQUARIE ISLAND VK0AP

During 1983, which is World Communications Year, a six metre station will be operational from Macquarie Island. Macquarie Island has not been active on six metres for ten years since the operation by VK0WW and VK0ZVS.

Peter McLennan, who will be on Macquarie Island and holds the callsign VK0AP will be active on six metres. Peter VK0AP, will be taking a six metre station with him to Macquarie Island.

The six metre station was assembled on very short notice by Lionel VK3NM, Gil VK3AU, Ken VK3GJ and Kevin VK3AUQ. Considerable assistance was obtained from Peter VK3FR, Dave VK3DHF and Ken VK3AH.

The station consists of an FT680R, a Lunar 100 watt linear amplifier, a programmed Keyer, power supplies and a Werner Wulf 4 element Beam. In assembling the station considerable assistance came from Emona with a rush overnight delivery, and from Werner Wulf, who burnt the midnight oil, and made up a special boom. Keith Haslem of Eastern Communications also helped in digging out spares and other items.

The Keyer was being built for Heard Island but a change of EPROM by Ken VK3GJ soon fixed that.



Ken VK3GJ and Gil VK3AU working on the EPROM.

Peter VK0AP will run the Keyer for extended periods on 52.1 MHz. Should 50 MHz operation become possible a change of frequency to the 50.1 MHz region will take place. The Keyer will normally be run with 10 watts output from the station. However 100 watt output will be used when looking for F layer DX across the Pacific.

The Keyer sequence is approximately 80 seconds of call followed by a listening period of 30 seconds approximately. The Keyer ends AR K immediately prior to the listening period after the last call sign of a sequence.

Operation will commence mid November 1982 and continue through 1983.

The QSL Manager for VK0AP is Peter VK3FR, 29 Woodcrest Road, Vermont, 3133. Cards for VK0AP may also be sent to the QSL manager VK3FR via the bureau. Direct cards should of course be accompanied by an SASE or other means for return of a direct QSL. 2 IRC's = Airmail Post.

With both Macquarie Island and Heard Island on six metres 1983 will be truly World Communications year for VHF operators.

That seems to be about all for now, but remember the ZLs have a VHF Field Day over the weekend of 4th and 5th December. I have received no news of any similar contest being sponsored in Australia. Closing with the thought of the month: "He who knows others is learned; he who knows himself is wise."

73. The Voice in the Hills.

AR

## WIA VIDEOTAPES

### AT LAST!

The WIA Videotape Service is now able to provide ALL its programmes in the popular VHS format!

### VHS IS NOW THE PREFERRED FORMAT!

Although Umatic and Philips N1500 are still available if requested.

For full details on how to order programmes for your Radio Club Meetings, see AR Feb. 1982 Page 44.

*New title Group B "ATV in UK, 1981-82" 30 min. Colour, Copy.*

W01105

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# VK2 MINI BULLETIN

Athol Tilley, VK2BAD  
Box 1066, Parramatta 2150

**NOTE OUR NEW  
POSTAL ADDRESS:**

**P.O. BOX 1066,  
PARRAMATTA 2150**

**OUR OFFICE IS NOW  
LOCATED AT:**

**109 WIGRAM STREET  
PARRAMATTA**

**PHONE: (02) 689 2417**

**LISTEN TO BROADCASTS  
FOR FURTHER DETAILS**

*\*\* Please note phone no. amendment.*

An application by the Illawarra ARS to establish a VHF and UHF repeater to cover the northern Wollongong suburbs was accepted and passed on to the Department for processing.

The affiliation of the South West ARS was terminated as SWARS had advised the WIA that they were not currently active.

Minutes of the WIA Education Service were discussed and Council decided that the attention of the WIAES be drawn to various by-laws and Articles of the WIA NSW Division.

An offer from Ross Wilson, VK2BRC, to act as VK2 Slow Morse Co-ordinator was accepted. Tom Delandre, VK2PDT was appointed as VK2 JOTA Liaison Officer. Congratulations to Ross and Tom in filling two important positions.

It was decided to purchase a quantity of VHS video cassettes and have them dubbed with most of the titles from the Federal Video Tape Library. We are grateful for the offer by John Ingham, VK5KG, in providing the dubbing. The completed tapes will be available for loan to VK2 Affiliated Clubs.

ANARTS made a request for use of the WIA building for its meetings. Council resolved that in accordance with policy previously adopted, the Parramatta building is owned by, and for the use of, WIA members and is not available for use by outside groups for general meetings. Council noted that adequate alternate meeting venues existed for such groups, such as public schools, often at no charge.

Council decided to donate \$800 to the 1983 Heard Island DX Expedition. The \$800 will be used to purchase amateur radio equipment for this expedition and will remain the property of the VK2 Division at the conclusion of the expedition. Council felt this was a worthwhile contribution to publicity for amateur radio in World Communication Year in 1983.

The registered office of the WIA NSW Division was transferred to the first floor, 109 Wigram Street, Parramatta, NSW.

Federal Councillor, Tim Mills VK2ZTM, announced he had decided to step down after many years in the position so another member could gain experience before the next Federal Convention. He was appointed as a VK2 Alternate Federal Councillor. Stephen Pail, VK2PS, was appointed as Federal Councillor for the NSW Division. This Division now has two Alternate Federal Councillors, the other being Wally Watkins, VK2DEW.

### STATE REPEATER SUB-COMMITTEE

At the August meeting of the WIA NSW DIVISION Repeater Sub-Committee, details of an application from the Illawarra ARS to establish a VHF and UHF repeater were completed prior to submitting the application to Divisional Council for approval. A number of other proposals are awaiting details from applicants before they can be completed and submitted to Council.

The rapid growth in repeaters in VK2 has resulted in a shortage of free channels in some areas. Future development will have to be in the top MHz, but this is not a problem with current equipment.

Summer conditions in the next few months will bring VHF repeater DX, with problems of co-channel interference on shared channels. If you hear a DX repeater, take care that you do not time out a local repeater on the same channel. Frequency changes have been suggested to some groups and these should overcome co-channel interference, allowing more efficient use of the affected repeaters.

Repeater groups should note that a repeater channel allocation is determined from the information presented with the application to establish a repeater. Channels are allocated from nationally agreed and approved frequencies and in accordance with repeater plans developed within and between states. Applications to establish repeaters and beacons should be submitted to the State Repeater Sub-committee and for NSW should be sent to WIA NSW Division, PO Box 1066, Parramatta, 2150. It is the function of the State Repeater Sub-committee to check and prepare any application prior to submission to Divisional Council for approval. The application is then forwarded to the Department of Communications for processing and issue of a licence.

The DOC then issue a licence for the repeater at the site and channel indicated on the application. Some groups have altered conditions or the location of their repeater without the authority of the DOC or advising the State Repeater Sub-committee. It should be noted that such action may be a contravention of the licensing conditions and has contributed to some of the current co-channel interference problems.

While there have been delays in DOC processing of UHF applications in the past, the department has advised that a number of licences are in the process of being mailed to the applicants for the UHF repeaters.

*Adapted from notes by Tim Mills.*

### HONORARY SOLICITOR

At the September meeting, Council recorded its sincere appreciation to the Honorary Solicitor, Fred Herron VK2BHE, for his personal interest and assistance during the property transactions for the sale of Atchison Street and the purchase of Parramatta. Fred handled all legal matters and smoothed out some of the problems during these transactions. Despite tight schedules between settlements, Fred ensured that we had an almost trouble free operation. This was not the first time Fred has assisted this Division.

In 1978, Fred spent untold time researching, drafting and presenting the current Articles of Association to members for their approval. He was never officially thanked for his efforts in ensuring this Division had Articles which reflected the wishes and needs of members. Often we forget the considerable behind-the-scenes work performed by volunteers assisting their fellow amateurs.

### AMATEUR ASSISTS AIR-SEA RESCUE

Tom Pyke, VK2ZZ, has provided the Division with details of assistance he provided to a disabled yacht in the Pacific Ocean near New Caledonia.

At 0930 on 23/8/82, VK2DSB intercepted a distress call on 14.130 MHz from the yacht. As VK2DSB was a visitor from Holland, there were some language difficulties but a request was made from the vessel to notify FK8AU through his son, who was the Police Commissioner in Noumea. VK2DSB requested Tom VK2ZZ to act on this report so Tom notified the following:

1. Air-Sea Rescue Operations in Canberra.
2. Department of Communications in Sydney.
3. The French Consulate in Sydney.

Air-Sea Rescue undertook to look into the report, but commented (quite reasonably) on the lack of precise detailed information as to the distress vessel's whereabouts. It should be noted that the language barriers were formidable as VK2DSB was a visiting Dutchman and the distress vessel FK8DU was French.

### DIVISIONAL INFORMATION

**PRESIDENT:** Susan Brown VK2BSB.  
**SECRETARY:** Athol Tilley VK2BAD.  
**POSTAL ADDRESS:** PO Box 1066, Parramatta, NSW, 2150.

**OFFICE ADDRESS:** 109 Wigram Street, Parramatta, NSW.

**PHONE NUMBER:** 689 2417.

**HOURS:** 11 am to 2 pm Monday to Friday. 7 pm to 9 pm Wednesdays.

**BROADCASTS:** Sundays at 11:00 and 19:30 local. \* = Morning only. \*1.8125 (Ncle relay), 1.825, 3.595, \*7.146, 28.32, 52.12, 52.525, 144.12, Repeaters \*6700 Orange, 6750 Gosford, \*6800 Lismore, 6850 Wollongong, 7000 Sydney, \*7100 Newcastle, 8525 Sydney.

**QSL BUREAU:** Conducted by the Westlakes ARC. PO Box 73, Teralba, 2284.

### COUNCIL REPORT

Divisional Council met on the 17th of September at Parramatta. In response to a submission from the VK2 WICEN, Council resolved that six SC9 UHF transceivers be allocated for use by WICEN in establishing links between Dural, the City and search centres.

After considering next year's Divisional budget, Council decided that the Division's share of the membership fee remain the same as this year and not be increased. We were advised that Federal WIA had increased their share of membership fees by \$2.

Athol Tilley and Susan Brown reported on a recent joint DOC/WIA meeting held in Sydney. Council was pleased to note the considerable improvement in the pass rate for VK2 candidates in the May 1982 Novice and AOCIP Telegraphy exams. VK2 WIA raised the poor pass rate by VK2 candidates for previous exams at the previous joint meetings. DOC advised that if a licensee notes a discrepancy in his listing in the WIA Callbook, the licensee must report the error directly to DOC so they can check if the error occurs in their records. Monthly lists of new licences could not be provided directly to the VK2WIA (for membership drives) as they could be subject to deletion of certain details (at licensee's request). Various reasons were given for delays in processing UHF repeater applications and verbal replies were given to some outstanding correspondence from the VK2 WIA.

Air-Sea Rescue reported back to Tom at 1300 that a helicopter had been despatched to rescue the crew of the disabled yacht.

VK2DSB originally broke into a contact between VK2ZZ, 3NA/mobile 4 and 5ZY with VK2ST assisting later with advice. Amateur radio was of assistance to the yacht concerned but Tom reports he still is not clear as to who was rescued, their location and by whom they were assisted.

Report supplied by Tom Pyke VK2ZZ.

#### NEW OFFICE AND LIBRARY

The new Divisional office is now fully functional and the furniture has been completed in the library/lounge area. These facilities are owned by, and for the use of, WIA members so why not call in and inspect them. The building is open during the day but to assist members, the office and library is also open each Wednesday evening between 7 and 9 p.m. A Councillor will be in attendance during these hours to assist you.

QSL cards are arriving from the Bureau and these are regularly placed in the drawers at Parramatta. If you have asked for your cards to be sent to Parramatta, you can call in to collect them when the office is open.

There are adequate facilities to read books or simply chat with fellow amateurs in the pleasant lounge surroundings.

#### BLUE MOUNTAINS FIELD DAY

The annual field day of the Blue Mountains Amateur Radio Club will be held on Sunday, the 14th of November at the Springwood High School, Chapman Parade, Faulconbridge. It is expected that all the usual events such as fox-hunts, talkins and children's events will be provided.

For details and a program, write to the club at PO Box 54, Springwood, 2777.

#### DETAILS OF TWO CLUBS AFFILIATED WITH THE NSW DIVISION

##### COFFS HARBOUR ADARC

PO Box 655, COFFS HARBOUR, NSW, 2450.

Net: Monday at 1000UTC on 3.610 MHz using VK2DVF.

Meetings: Wednesday at 7 pm at the Orara High School in Bray St., Coffs Harbour.

Vice-Pres: Bruce VK2DDU, Secretary: Dave VK2DUR,

Others: Percy VK2QV, Bob VK2AWA, Rick VK2BKV.

Classes: NAOCP.

Repeater: VK2RCH channel 6650.

Field Day: Easter at Urunga and Bellingen.

##### ORANA REGION ARC

93 Worth St., West Dubbo, NSW, 2830.

Net: Monday, Wednesday and Friday at 1000UTC on 3.620MHz. 3rd Friday of each month, 1930h on channel 6500 using VK2AJ0.

Meetings: Last Friday of each month at the Orana Education Centre.

President: John VK2ZMT, Vice-Pres: Lee VK2DGX, Secretary: Jim VK2AJ0, Others: Peter VK2VEH, Gordon VK2DJA, Trudy Hanson, Frank Wall.

Classes: AACP and NAOCP.

Repeater: Testing on 6800.

Field Day: BBQ in mid September.

#### COMING EVENTS

Blue Mountains Field Day at Springwood: 14th November.

Homebrew Competition entries due (see page 58 August AR): 30th November.

NSW members and clubs are invited to submit news items for inclusion in these notes to WIA PO Box 1066, Parramatta, NSW, 2150. Items for January 1983 AR must reach us by November 15.

Athol VK2BAD.

AR



## FIVE-EIGHTH WAVE

— Jenny Warrington VK5ANW

59 Albert Street, Clarence Gardens 5039

You only have to ask! That's one of the nice things about this fraternity. In my September column I said that I couldn't see how one would have scored the 6 point relay competition for the Fisk Trophy. Dick Baty — VK5MD (formerly 5MH) the donor of the Trophy took the trouble to write and explain it to me.

*"The object of the exercise was to pass a message from one state to another, until it had been handled in six states. The scoring was as follows.*

1. One point for originating a message and passing it on to a second call area.
2. One point for receiving the message from another call area, and one point for passing it on to another call area not already in the preamble. (ie 2 points for relaying a message)
3. One point for receiving a message and not being able to pass it on either because you couldn't contact a call area not already in the preamble, or because you happened to be the sixth call area."

Thank you, for the above information Dick, and we trust that you will soon be back home after your current stay in hospital.

I also received from Clarry Castle VK5KL, a photocopy of page 8, of AR 1st Feb. 1935, which gives the results of that same contest, but states that VK5MH tied with VK5JA (993 points each) and not with VK4EN which I think is what is engraved on the cup.

We were asked recently to provide a speaker on Amateur Radio for a Kiwanis' meeting, and Bill VK5AWM bravely accepted the challenge. They are interested in raising money to help the handicapped become amateurs, and we hope that we shall be able to give them assistance in this worthwhile project. (our part will be technical and educational, rather than financial)

One of the 'projects' that Council set itself this year was to review and update the Constitution. A sub-committee met, and was pleased to discover that much of the ground work had already been done by a previous group, and only needed 'tidying up'. The proposed changes will be published in the next issue of the local 'Journal' Read them carefully and come to the meeting on 23rd Nov. with any constructive criticism or suggestions. Remember, this will affect you, and we don't want to ruin the Christmas Party by discussing the Constitution, simply because we couldn't get a quorum at the November meeting!

#### Diary Dates

21st Nov W.I.A. Picnic — Bridgewater Oval

(from approx. 11 am)

23rd Nov Constitution Review meeting (8.00 pm BGB)

30th Nov. Buy and Sell (7.30 pm BGB)

7th Dec Christmas Social (7.30 pm Thebarton Assembly Rooms)

AR

*Are you lost and wondering*

## HOW TO FILL THOSE IDLE MOMENTS?

### READ A BOOK

INTERFERENCE HANDBOOK.... Radio Publications  
 A COURSE IN RADIO FUNDAMENTALS .... ARRL  
 A GUIDE TO AMATEUR RADIO..... RSGB  
 AMATEUR RADIO AWARDS..... RSGB  
 AMATEUR RADIO OPERATING MANUAL.. RSGB  
 SHORTWAVE PROPAGATION HANDBOOK... CQ  
 ANTENNA ANTHOLOGY..... ARRL  
 VHF COMMUNICATIONS

(Back issues — all four issues for years 1970-1981 except issues 1 & 4 of 1971, which are unavailable).

WIA BOOK Vol. 1 ..... \$3.50 — 190 grams

*All these and many more are available from:*

YOUR DIVISION  
 or direct from MAGPUBS  
 Box 150, Toorak, Vic. 3142.

#### OPTICAL FIBRE PHONE UNK

A 204km optical fibre phone cable — believed to be the longest in the world — has come into service between London and Birmingham.

Optical fibres are hair-thin strands of pure glass carrying messages and information as pulses of light.

Each strand can carry up to 2000 phone calls simultaneously and enough strands to carry 10,000 calls could pass through the eye of a needle.

from "Information Technology from Britain" Sept. '82. AR

#### 440 MILLION TELEPHONE CALLS?

Every telephone subscriber in Britain can now dial direct abroad, to 440 million phones (93% of the world's total) in 121 countries.

In 1930 a three minute call from Britain to Australia via the operator cost \$10.20 (approx. \$119 today). The same call direct today would cost \$6.30.

from "Information Technology from Britain" Sept. '82. AR



# VK4 WIA NOTES

Bud Pounsett, VK4QY  
33 Lasseter Street, Kedron 4031

## THE XII COMMONWEALTH GAMES STATION, AX4QCG

As these notes are being written, the XII Commonwealth Games are only a few days away. Brisbane is well prepared to receive all the thousands of visitors who will be coming to our State Capital for this great sporting event. The Brisbane City Council have been working to create a festive atmosphere for the past several months. Roadworks have been in full swing to facilitate an even flow of traffic, our South Eastern Freeway has been pushed ahead at a feverish pace to give a rapid transit time from the inner city area to the major games site, QE II Stadium, to the south of Brisbane. Colourful banners proclaiming the XII Commonwealth Games are decorating the major thoroughfares of our city.

Not to be left out of all this excitement, the Wireless Institute of Australia, Queensland Division, applied for a station licence for an amateur radio station to operate at a games venue. This licence was duly granted and the callsign AX4QCG was issued.

That was the easy part. Now came the job of convincing the Commonwealth Games Authority that it was essential to operate an amateur radio station from one of the sites. Fred Saunders, VK4AFJ and Rod Taylor, VK4YRT, got the job of negotiating and started running into brick walls. The Games people were not

quite as enthusiastic as we were, to say the least.

Some of the objections raised were the fear of interference to public address systems, and radio and television broadcasting services. The possibility of our station passing sporting results around the world faster than the radio and TV broadcasting people and the fact that here was another problem and another team of people to worry about. Fred and Rod kept hammering away at the brick walls and finally managed a break-in — to QE II Stadium, but with some restrictions.

One of these was that there were to be no HF transmissions made from the site. This was solved by using 70cm link equipment between a caravan in the QE II complex and another caravan at Woodridge, a few kilometres to the south. This caravan is located at the home of Geoff, VK4AMP whose HF aerials are being used. This arrangement did solve one big problem, that of erecting efficient HF aerials within the Games complex, particularly beams for the three higher HF bands.

A major effort has been made by Geoff Adcock, VK4AG, who designed and built the interface units at each end of the 70cm links. There are two pairs, one for each direction, in a duplex arrangement. To keep the levels constant over these links, a local Brisbane electronics firm, DELSOUND PTY LTD, have loaned two very expensive, high-quality audio

limiting amplifiers. Rounding up equipment, acquiring caravans, organising a team of operators has been the task of David Jones, VK4NLV, who has done an excellent job in this regard. Each Sunday for weeks, VK4WIA has been broadcasting the frequencies to be used by AX4QCG. The Queensland Divisional Council has been right behind this project and various councillors have contributed their time and energy to the establishment of this station. We hope that you worked AX4QCG and became eligible for the special once-only QSL card.

Here is the list of members who have been accredited to operate AX4QCG from the QE II stadium. Fred Saunders, Rod Taylor, David Jones, Geoff Adcock, Guy Minter, Doug Fowler, Doug Charlton, Fred Lubach, Mark James, Barry Ker, Anne Minter, Steve Griffin, Ray Robinson, Ian Perkins, Des White, Ray White, Roger Mattiskie.

## SUNSHINE STATE JACK FILES MEMORIAL CONTEST, 1982

Results:

Section 1a Transmitting All Bands. Al Carter, VK4LT.  
Section 1b Transmitting HF Only. Kevin Williamson, VK4VHW.  
Section 1c Transmitting VHF/UHF Only. Bob Mann, VK4WJ.  
Section 1d Transmitting All Bands Club. Mackay, VK4WIM.  
Section 2a Transmitting All Bands. Jim Swan, VK2BQS.  
Section 3 Receiving All Bands. Nancy Heaton, L40804.

Bud. VK4QY

## VK4 Old Timers again

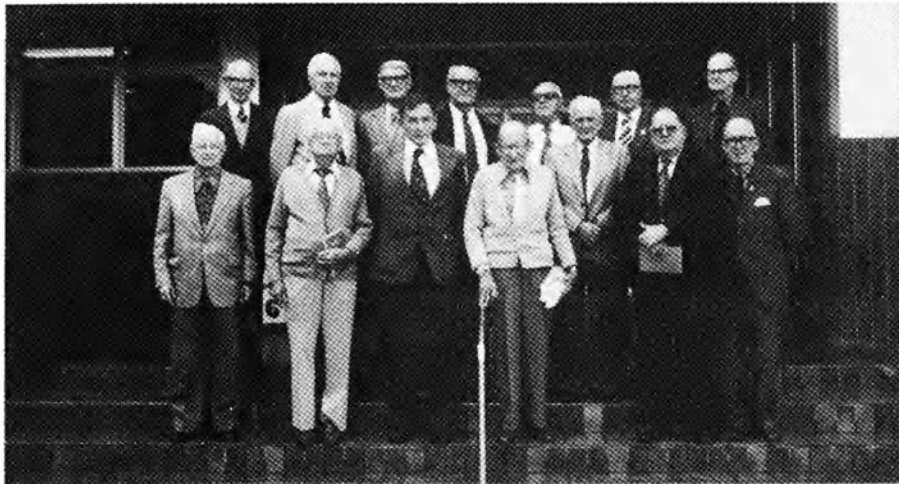
The second luncheon of mostly VK4 Old Timers, pre 1930, was held at the Coorparoo RSL on May 25, 1982, with some new faces. The Qld. Div. Council was host and presented guests with a WIA Book 1 each.

President Guy and Secretary Fred were there ensuring that all enjoyed themselves.

Faces we have yet to see are Gordon VK4GH, "Nim" VK4JL, (4JL, 1930), Harold VK4DO, Leighton ex 4AN (1924), Tom ex 4NW (1930), Eric VK4XN, Frank VK2AMI, Bob ex

4BB (1930), Vic ex 4BJ (1930), Frank VK4FV, and Dave VK4ADJ (4YN 1928). Have I missed anyone??

Unfortunately we will not see Arch VK4AF or Marcus ex XQA with us. We are endeavouring to bring pre 1930 licensees together with a luncheon, now and then, and would welcome "Old Timers" from other states, as we feel sure that many have moved to the Sunshine State in their retirement. Do you know any pre 1930 licensees?  
VK4PJ. AR



Front Row, L to R, Harold VK4HB, Fred ex 4FK (1924), Harry VK4HK (1930), Arthur VK4FE (1937), Norm VK4ANO (4BO 1924), Jack VK4VH (1930), Ralph ex VK2HV.

Back row, L to R, Bill ex 4RO (1930), Col ex 4JG (1930), Stan VK4YF, ex 4JO (1930), Cliff VK4CG, Alf ex 4AT (1930), Arthur VK4AW, George ex 4GW (1930).

# WANTED TO BUY

Ham gear, CB equipment, Hi Fi, video, car stereo, large or small quantities.

WE BUY AND SELL  
ANYTHING ELECTRONIC  
ANY QUANTITY  
ANY CONDITION

## HAM RADIO

104 Hightett Street,  
Richmond, Victoria.  
Phone: (03) 428 8136

# CLUB CORNER



## QUEENSLAND RAILWAYS INSTITUTE AMATEUR RADIO CLUB

On Sunday the 15th August, 1982 at Ipswich near Brisbane, the above club was formed by interested railway men and enthusiasts, to promote Amateur Radio within the Queensland Railways Department.

Full membership to this club will be open to people that are members of the Queensland Railways Institute or employed by the Queensland Railways Department.

Associate membership will be granted to people outside the Railways Department, provided they join the Queensland Railways Institute as such.

Associate members have the same privileges as full members.

These privileges are, Amateur Radio Club, Sporting, Library, Social Activities, etc.

We will be using an award, that was given to us by the Ipswich Railway Amateur Radio Club, as this club does not exist any more.

This award is known as the QARAR Award and is granted to any amateur or shortwave listener, who contacts five Licensed Railway Men.

The address is: Frank Alloway VK4AFW, 22 MacAlister Street, Ipswich, 4305.

The club net is held every Wednesday evening on 3.580 MHz  $\pm$  at 0900 UTC (7pm locals). So drop in.

## NEW REPEATER FOR NORTHERN BRANCH (TAS)

The Northern Branch of the Tasmanian Division, WIA is currently testing a new UHF repeater — VK7RAB. Hopefully by the end of the summer VK7RAB will be permanently established and fully operational. The meeting place for the Northern Branch is now Kings Meadows High School — Launceston.

R. Harper VK7OM,  
Act. Sec.

## NORTH WEST RADIO SOCIETY

The number of radio amateurs in the Pilbara region of Western Australia has grown from two or three ten years ago to over fifty today.

To cater for the increasing number of amateurs in the area, the North West Radio

Society was formed. The society is different from most other clubs or societies around Australia as it covers amateurs in an area geographically the size of Victoria.

The club is based in Port Hedland and because of the distance between members information is disseminated by newsletter and via the club net which meets on 3.605 MHz, Sunday 1130 UTC.

The club is split into a number of chapters representing the major towns in the area.

As with any group of amateurs their activities are very varied but one area which is increasing rapidly is VHF communication. A few years ago there was little or no VHF activity, but now, Japan is being worked regularly on 6m with low power and simple antennas. On 2m a number of repeaters are being established and fox hunts are being held.

### REPEATERS:

|              |      |               |
|--------------|------|---------------|
| Port Hedland | CH 8 | VK6RNV        |
| Karratha     | CH 4 | VK6RWP        |
| Newman       | CH 6 | (Applied for) |
| Wickham      | CH 2 | VK6RWK        |

Amateur radio is now firmly established in the area and as the population of the area increases, albeit at a slower rate recently due to the world economic situation, then amateur radio in the area can look forward to a bright future.

## VK3 WIA NOTES

DAVID JOHNSON VK3YWZ

62B Naples Rd, Mentone, 3194

### OPERATING CONVENTIONS FOR USERS OF AMATEUR REPEATER STATIONS

*It is probably timely to look at repeater conventions for the benefit of all members. Please remember that these are the gentlemen's agreement, and that if all members follow these guides, operation will become more pleasant for all.*

#### PURPOSE OF REPEATERS:

Repeaters are established primarily to extend communication range of mobile and portable stations in the VHF and UHF bands.

Repeaters are also used as calling channels to establish initial contact, prior to the users switching to a simplex frequency.

Additionally, repeaters provide contact facilities for Amateurs in remote localities, where a simplex communication on VHF and UHF is not normally possible.

#### OPERATING CONVENTIONS:

Each transmission should not exceed two minutes.

Before replying, let the repeater "drop out" and wait at least three seconds before transmitting. This allows others immediate access to the repeater. Note that VK3REC transmits a tone pulse to indicate the timer has reset.

Do not reset the timer to extend your own transmission time.

Keep repeater contacts brief and to the point. If you have nothing to say, don't say it! Limit your group QSO to a maximum of ten minutes.

Let the Breaker go ahead immediately. He may have an urgent message. (Refer Dept. of Communications Amateur Handbook page 33-34.)

Breakers must wait until an "over" concludes before transmitting.

Do not transmit on repeater output frequencies. Use reverse facilities only to observe another station's input signal strength. If satisfactory, then QSY to a simplex channel.

Ignore annoying transmissions. Do not respond in any manner to any transmission not identified by a callsign.

RTTY and other coded transmissions are not permissible on voice repeaters.

The use of repeaters for liaison to establish a contact on another band is permissible, but cross band contacts using a repeater are not encouraged.

Note: Department of Communications Regulations require that all frequencies in use must be monitored and announced by both parties.

Priority must be given to normal repeater usage.

#### SUMMARY:

All Operators should be courteous and unselfish at all times, and always be aware of the needs of other people who have an equal right to share the repeater.

If you hear an Operator who is new to repeater operation, assist and educate him in a courteous manner, but make sure that you are correct first!

Always be aware that others, including new and non-amateurs, are monitoring repeaters.

The Image of Amateur Radio is important.

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# QSP

## REMOTE AREAS TO BENEFIT FROM SELF-HELP TELEVISION SCHEME

A new concept in television reception designed to help small communities in remote areas or in pockets of poor reception was announced recently by the Minister for Communications, Mr Neil BROWN.

"The new Scheme will help people in those areas to receive television quickly and economically," Mr BROWN said.

The Scheme is called the Self-help Television Reception Scheme. It has been designed to benefit people in isolated areas or those unable to receive television adequately because of topographical barriers such as hills.

Mr BROWN said that the Scheme was a major step forward to bring to people in remote areas the benefits of modern communications.

This will be done by issuing licences for community groups to receive television and then retransmit it to their community.

Mr BROWN said that under the Scheme, communities would form a group to own and operate an aerial, transmitter and associated equipment.

Television signals from the nearest station would be received by the community aerial and then retransmitted to the community.

"The community may decide to receive the local commercial telecast or the ABC, or both," Mr BROWN said. "If they wish to receive both, they will need to set up two systems under the Scheme."

The community group will also need the permission of the station from which the self-help programs will originate.

### COST

Costs to communities wanting to install self-help systems will vary, but the lowest "package" of equipment necessary is expected to cost less than \$3000.

The costs will be kept down because technical requirements for the self-help systems will be standardised. This is expected to result in more efficient manufacturing and possible cost savings to communities because manufacturers will be able to produce larger numbers of units.

Acquiring a site for the community television equipment and installing it would require additional expenditure.

"Obviously the more subscribers there are to a system, the less each individual will have to pay," Mr BROWN said.

### FOUR SYSTEMS

The local community will be able to choose from four alternative systems. Each of these four self-help "packages" is explained in technical papers now being prepared by the Department of Communications which developed the Scheme.

Briefly, the four systems available were:

- The Basic Self-Help Television Scheme
- Semi-planned Television Systems
- Professional Television Systems
- Community Television Aerial (Cable Distribution) Systems

The first three systems would use equipment known as translators to pick up signals and rebroadcast them. These would be received by individual household aerials in the normal way.

The fourth system would use a community aerial installation to receive signals and distribute them on a small-scale cable network to subscribers' homes. For economic reasons these houses should be grouped close together.

A brochure giving a brief introduction to self-help television has been printed and State Broadcasting Engineers are available to assist communities to reach decisions on the appropriate "package" for their area.

Mr BROWN said it is hoped that once applications are received, processing will take less than six months. Certain technical standards will have to be met and the Australian Broadcasting Tribunal will need to grant licences.

"But the whole basis of the Scheme is that community groups will be able to obtain a licence quickly without being involved in too many technical considerations," the Minister said.

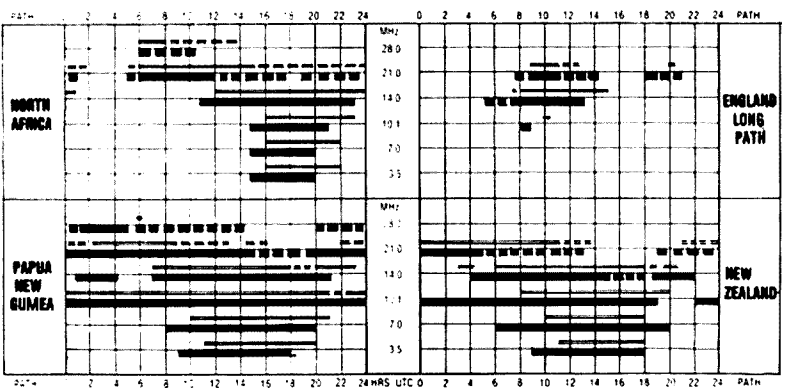
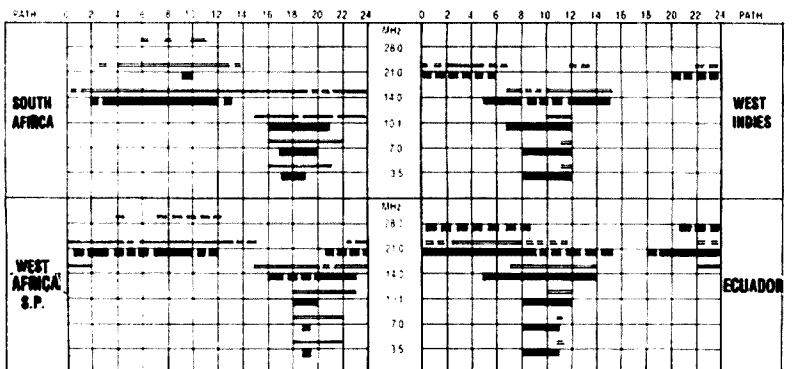
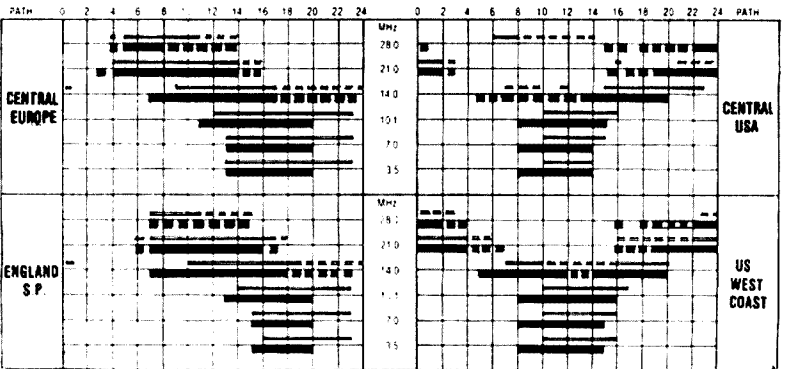
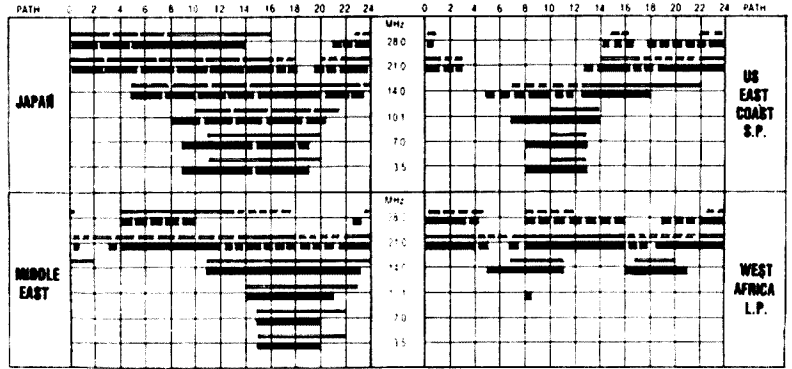
Mr BROWN said that if the area served by a system has already been earmarked as the site for the installation of a National (ABC) translator within the next ten years, it is possible for groups installing the more sophisticated Self-help Professional Television System in order to rebroadcast ABC programs to obtain reimbursement from the Commonwealth.

If the Commonwealth reimbursed the costs of such a self-help system, it would then be handed over to the Government in the normal way to form part of the ABC service.

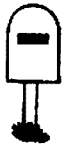
Press Release from the Minister for Communications

# IONOSPHERIC PREDICTIONS

Len Poynter  
VK3BYE







# LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

The Editor,  
Dear Sir,

43 Astrolabe Road,  
Kingsford, 2032

May I add a few words re the article (AR July, 1982) re the poem "Coming Round the Bend" and the excellent follow up letter regarding Morse Code in the PMG Department, by VK4VHL in the September issue, by giving a few details of Frank "Spru" Spruhan the composer of the poem.

I worked alongside Spru for some years in the Sydney GPO Operating Room and found him an amazing man both for his poetic ability, humour and many anecdotes outside of telegraphy.

Spru learned telegraphy before the turn of the century and followed it up with spells of operating in Bendigo, Seymour, Benalla, Geelong etc. In 1903 Spru got "Gold Fever" and followed gold mining in WA where he worked both above ground crushing batteries and below ground for some years. However, the wanderlust struck him again and he took up many occupations including, bookkeeping, Railway clerk, Telegraph Instructor, Lodge Secretary, ringbarking, fencing, clearing, roadwork contracting, bookmakers penciller, hawking Holy pictures, quarryman, carpenters labourer, hotel keeping, shopkeeper, post splitting, fruitcase making and many other diverse occupations.

Spru enlisted in World War 1 in Artillery and Signals plus a spell as "Sparks" on a troop ship. When he returned to Australia he joined the Navy but later resigned and entered the Sydney Telegraph Branch at the GPO.

Spru was never short of an audience in the lunch-room, at a Smoko or at a nearby hostelry. His stories and anecdotes were never ending. He could always be picked out from other Telegraphists by his enormous home-rolled cigarettes resembling small ice-cream cones in shape.

When Spru was approaching retiring age a committee of Telegraphists collected many of his poems and stories and published a small book entitled "Coming Round the Bend," the proceeds of the sale being handed to him on his retirement.

I, like many others miss Spru's stories and company and regret that morse code is now only used by Coastal Radio, Shipping and Amateur Radio, the latter being followed by me since 1925.

Bill Bullivant, VK2BC.

## SPRU'S FAG

*Have you seen Spru's fag?*

*It resembles a swag!*

*There's an ounce of fine cut,*

*In his smallest butt.*

*When the old fella smokes,*

*Well, everyone chokes;*

*There are howls of surprise*

*As they all rub their eyes.*

*At the fumes that arise!*

*Oh, it causes a haze,*

*That lingers for days*

*As we look with amaze.*

*Have you SEEN Spru's fag?*

*It resembles a swag!*

— Reg. McLean

From booklet: "Coming Round the Bend."

The Editor,  
Dear Sir,

28 Redgrave Road,  
Normanhurst, 2076

A number of recent WIA broadcasts have advocated that Telecom be given the operating rights for a cable TV distribution system. If my memory serves me correctly these were FE tapes. In these tapes reference was made to "backyard operators" and the need for the highest technical standards to be maintained. I am by no means certain that commercial organisations could not maintain such standards, or that Telecom would, beyond question, maintain the highest standards.

The question arises, however, would there be would have as much leverage on Telecom as upon a commercial organisation.

As the question as to whom is to operate the system has become very political, perhaps it should not be on the broadcasts at all but confined to Amateur Radio magazine. Certainly the fibre optic cable question does not fall into that category and should be pushed with all vigour.

Barry White VK2AAB

The Editor  
Dear Sir,

PO Box 74,  
Mary Kathleen, 4827

In reference to your article and photograph in September AR page 54, quote "You are never too old", I must inform you as to the identity of VK4NGE. He is in fact GEORGE EVES and not Nelson as published.

George is the latest addition to a "family" of amateurs, comprising RICHIE VK4RR (son-in-law), PAULA VK4KIZ (daughter) and TERRY VK4ATY (son-in-law and my husband) making GEORGE (VK4NGE) NELSON? my father.

Yours sincerely,

Kathy Gardiner  
(YL VK4ATY)

**The WIA is in business for more members. Please help.**

## WIA INSERTS INTO AR



### NOTICE TO WIA ZONES, CLUBS AND GROUPS

**WIA Zone, Club and other Group Secretaries are hereby notified that inserts into AR henceforward will be accepted ONLY direct from a Division and then only by prior arrangement with the Secretary. All inserts must comply with Postal Regulations and must be received not later than the 26th of the month preceding publication date.**

## HAMADS

**PLEASE NOTE:** If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.

- Eight lines free to all WIA members. \$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA current Call Book.

### TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is \$15 for 4 lines, plus \$2 per line (or part thereof) minimum charge \$15 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

**Amidon Ferromagnetic Cores:** Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R. J. & U. S. Imports, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken St, Oakley, 2223).

**CB Radios \$69;** walkie talkies, short wave radios, military, outback, business, amateur, marine, repairs, RTTY Siemens 100A printer \$120; base mic., \$45; ultrasonic alarm, \$35; all ham bands on a single 6 ft. whip, 1.8 to 30 MHz, for base or mobile, \$300; aerials, installation, demonstrations, 40 ch. CB conversions, accessories, new rigs weekly. Bridge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW. Mail order service and all enquiries to 2 Griffith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066.

### SWAP — SA

**Kenwood TS520S TXcvr,** as new, for Yaesu FT-7B (pref. with YC-7B readout. Ph. (085) 277 7057 Mon.-Fri.

### WANTED — NSW

**Magazines:** Radio and Hobbies mags: Oct, Dec 1939; all issues 1940-46, Feb. 1947; July, Oct 1949; June 1950; June, July 1951; Jan, May, June 1954; Sept 1955; July 1956; May 1959; June, Aug, Dec 1960; Feb 1963; Electronics Aust.: Oct, Nov 1968; also interested in other old radio mags, valve data books, etc. VK2XBP, Box 131, Cooranbong 2265. Ph. (049) 77 2178.

**Valves:** 3 - 500Z valve. Pse contact Ray Davies, VK2FW GTHR.

**Yaesu FT30 1D solid state TXcvr,** also Yaesu Y0901 Multiscope with pan adapt. Both must be in GC. VK2DFN. Ph. (02) 449 2196.

### WANTED — VIC.

**Crystals:** 1500 and 1700 kHz Xtals. VK30G. QTHR. Ph. (054) 29 1362.



**Kenwood CW filter type YG88C to suit TS820S. VK3AH QTHR.**

**Kenwood 06-5 digital display unit to suit TS-520S. Also require a quantity of basic radio test equipment suitable for beginner radio serviceman. Details to VK3OM. OTHR. Ph. (03) 560 9215.**

**VFO to suit FT101E Yaesu FV101B if poss. please. Ph. (03) 398 4192 A.H.**

#### WANTED — OLD.

**DRAKE "C LINE" accessories, viz CW filter, L-4B Linear, MN-2000 Tuner, noise blander, extn speaker, etc. Also "O" Multiplier for R-2B. Details to John, VK4SZ. OTHR. Ph (070) 61 3286.**

**Heavy Brass Key, also paddle, text books subject Marine Distress, DF, and Radar equip. Equip. suit ROGPC test. Roland VK4EG. OTHR. Ph. (076) 38 2819.**

**Kenwood SP820 ext. speak. Please contact VK4ATQ. OTHR. Ph. (07) 374 1008.**

**Valves — EC92, 6AB4 urgently. ATU No 8, No 10 for ex-Army B47, B48 Wsr. Cash or swap ATU No 6, No 9. VK4EF OTHR. Ph. (07) 38 1803.**

#### WANTED — TAS.

**Remote External VFO for Kenwood TS520s. "Urgent". Inspect or consider from anywhere any State. Top price for piece in A1 cond. Also MC50. Contact L. Lockett, 5 Wendy Place, L'ton Tas. Ph (003) 44 8972.**

#### FOR SALE — ACT

**Eddystone S680/2A Rx, \$20; 5 el beam cut to 11m, easily adjusted to 10 or 15m, \$70. Telescoping pipe mast, 33 feet height fully extended, \$35. Calibrated attenuator, \$15. TV masthead amp, Hills Mk 2, \$15. Don LI0022 OTHR. Ph. (062) 88 6373.**

**Icom IC22A, 2m FM, 13 chan fitted (Repeaters 1-8 incl., Reverse rpt 7 and 8, Simplex 40, 50, 51), VGC. Comp with manual, mobile bracket, etc, orig pack. \$170. Ian VK1ZAG OTHR. Ph. (062) 91 0483.**

**Icom IC-730 Mob Txcvr and PS15, as new, little use, \$900 ONO. VK1DR. OTHR. Ph. (062) 49 1946.**

**Kenwood R-1000 0-30 MHz AM/SSB/CW Comm Rx. EC. \$400. Eng./Manual. Kenwood TS520 3.5-29.7 MHz SSB/CW (600Hz filter fitted), AC/DC power supp. New 61466 finals fitted with VFO-520 match. ext. VFO and SP520 match sokr. EC. \$400. Eng./Manual. Icom IC551D 50-54MHz 100W final ampl. AM/SSB/CW. Also FM board fitted, together with match AC pwr supp. Icom ICPS-20, EC, \$750. Kenwood TS700A 144-148 MHz AM/SSB/CW/FM 10W final amp, EC, \$450. Belcom Liner 430 432-432.48 and 435-435.48 MHz SSB/CW 10W final. 12V/2.5A DC pwr supp is req. EC. \$200. Jap/Manual. All units can be supplied with match mic. and orig. cartons. John VK1FT. OTHR. Ph (062) 80 6481 BH, (062) 80 2364 AH.**

#### FOR SALE — NSW

**Amateur Station HF complete or individual on any reasonable offer basis. Yaesu Musen FR100 RX, FL100TX, Heathkit SB100 Linear, 40ft wind down 2 section mast, TH3MKIII Triband, Ham II Rotator, BC221 freq. meter. Other bits and pieces inc. FT7 mobile. All work cond. VK2TY OTHR. Ph. (02) 84 5986.**

**Antennae: Two 11 element "Cushcraft" 2m antennae, TV type rotator, 50ft telescopic tubular steel mast, \$190. Swan 350 selectable sideband, Xtal calibrator, VOX, mic, semi-auto key, AC power supply, manual, spare valves and relays. \$310. VK2YN, OTHR.**

**Auto Powermeter, WAS-1, large dual meters, 0-2kW, W/drev, HF, VHF, UHF. New professional instrument, \$150. Shure 404C hand mic (new in carton), \$65. Manfred VK2KMM, Box 120, Vauclease, 2030. Ph (02) 371 8854.**

**Computer 2650, fully expand EA system, 32K mem, Eprum Burner and RTTY software in ROM. Connects to XitoX terminal. Comp with lots of professional software, including Basic, Assembler, text-processor, source generator, all with orig documentation. Also available, ASR-33 printer with tape-punch and reader, connects to above computer. \$600 the lot or will sep. VK2BHF. Ph. (02) 981 4762.**

**DX180 5 band SS comm. Rx plus match sep speak and owners manual. Freq coverage 150kHz-30MHz. \$150 ONO. GC. VK2VCO, OTHR. Ph. (063) 43 1808.**

**FT-101B \$375, REC216, PS No 24, 19-157MHz, 5 bands, \$100. HF tri-band mob. ant. \$50. KW160 ATU \$25, 4CX250 valve socket, chimney, blower, plate & load v/caps with L for 6m, \$110. SK800 sockets, new, \$70. Used, \$35. Fil. trans, new, 240/6V 10A \$24. Oil caps 16MF/1500V, 2 x 10 MF/1500V. 4 MF/2500V, \$45. Vince, VK2VC OTHR. Ph. (027) 13 6655.**

**Icom IC-2A h/held 2m Txcvr. EC. Orig carton. Manual all standard acc included. \$215. Also extra BP-3 Nicad Batpaks, \$12 ea. BP-4 AA Batcase, \$10, comb mic/spkr, \$22, car charging lead \$6, LC-2 soft case \$8. Damien VK2AQW. Ph. (03) 890 4372 after 5pm.**

**Icom 730 HFSSB/CW/AM Txcvr, as new in carton, with scan mic, superb radio, \$675. (02) 36 2981.**

**Kenwood 130S Txcvr with mic. MB-100 mobile mount, PS-30 power supply, with manuals, cartons, etc., used six weeks only, as new, \$750. Azden PCS3000 FM 2m 25W output, 142-150MHz, microprocessor control, keyboard entry Txcvr, comp memory and band scan, with remote cable, brackets, manual, very best available with match antenna and coax. \$295. John (02) 36 2981.**

**KENWOOD TS520S with CW filter, speak, SP520, VFO 520S, ant. tuner AT200 and mic. All unmarked, in exc. working order with manuals and orig. cartons. \$820. Oscilloscope TR10, latest 20MHz dual trace model CS1566 with 2 probes. As new, unmarked, very little use with manual and orig. carton. \$660. VK2BZT. Ph. (02) 84 2312.**

**KENWOOD TS520S, PC, box, mic & manuals inc. \$500 ONO. Yaesu FC902 ant tuner, still under warranty, \$250 ONO. Jim VK2OFF. Ph. (02) 699 2404.**

**Swan 100MX SSB S/S 100W Txcvr. Ideal base/mobile unit C/W. Match pwr supply. Fty. Service manual in new cond. \$600. VK2BTL. OTHR. Ph. (02) 487 3383.**

**SWAN ASTRO 102BX HF Txcvr with match 20A power supply and speak plus both owners and workshop manuals. This equip features twin VFOs, notch filter, full breakin, passband tuning, and built-in SWR bridge. Also a Kenwood R1000 comm RX with manual. All equip is in perfect working order and will be sold to best offer over \$900 for the lot. Erik VK2BEK. OTHR (alter Nov. 8).**

**Teletype - Model 15, EC. See working. Tons of spares. \$65. Antenna, 5 band 18AVT \$65. AWA carbonphones, low band VHF, with CCT diagram. \$15 pair. VK2KFP. Ph. (02) 546 4716.**

**Video Camera, B&W with inbuilt monitor, \$110. AX-190 amateur band Rx without sprk. \$120. Buyer must pick up. Ph after 6pm (02) 604 7137.**

**Yaesu FRG7 Comm Rx. All bands from 0.5MHz to 29.9MHz. Mint cond. Manual and orig packing. \$200. VK2DHC OTHR. Ph. (02) 913 7712.**

**Yaesu FT7, \$300. Icom IC22S \$200. Both hardly used, as new. VK2BYA. Junea. Ph. (069) 24 1469.**

**Yaesu FT0X 401 Txcvr. 400W PEP. New finals, FV401 VFO. Yaesu match speak, Yaesu hand mike with 18AVQ antenna. A comp station with 400W PEP. Any trial, or can be heard on the air. The lot \$600. Also Yaesu FRG7 Rx \$200. Ph (02) 81 1582.**

#### FOR SALE — VIC.

**CB Handheld: TRC-209 Realistic 5W 18 chan with mic, owner's manual, leather carry case. Ex working order. \$60 ONO. Tim VK3PCH. Ph (03) 723 3943.**

**Drake R4C-T4XC-AC4PSU Txcvr. MS4 speaker. Transceive or separate operation 160 to 10m. R4C has noise blander, 3 filters, 6, 2.4 and 1.5kHz Xtals for additional 5 SW bands. GC, all manuals. \$600 ONO. Ken VK3ACS. Ph (03) 592 5960.**

**Duo Band Beam 15m & 10m, 3 elements on each, mono bands with sep. gamma matches. W.Wulf design, as new \$85.00. VK3UV OTHR Ph: (03) 580 6424.**

**FT101E AC/DC fan comp, as new with cables hand and 50K boom mic. Also manual. Orig. pack. \$525. VK3OMI. OTHR. (03) 288 2710.**

**FT101Z with fan & DC:DC converter. GC. \$650 ONO. VK3AIY. OTHR. (03) 787 4969.**

**FT7 VGO \$375. CPI HF150 Lin Amp, 10-80m, \$115. Four various antique radios. Best offer. VK3NPA. Ph (053) 34 1558.**

**KENWOOD TS120S, PS Yaesu FP301 with built in sprk, Daiwa ant tuner CL67A, Scalar helical whip for 10 and 15m. \$500 the lot ONO. Stan VK3VJQ. Ph (03) 846 1792 AH, (03) 560 0611 BH.**

**Kenwood TS520S HF Txcvr with CW filter, \$500. Will consider swapping for a 100W HF Mobile rig. ATN-KLM 51-53MHz 11 el 6m beam (sale depends on Govt decision on 50MHz and putting up new beam tuned to 50MHz). \$100. TV pattern gen \$25. 10 el 2m beam \$10. 15 el 2m Hy-gain beam \$40. JIL SX-100 scan Rx \$325, car radio and SW converter \$50. 435MHz Yagi \$5. Lionel VK3NM OTHR. Ph (03) 88 3710 AH, (03) 568 2733 BH.**

**RTTY Equipment. ST6 demodulator (Anarts) \$40. Twin 'T' Modulator (Anarts) \$8. UT2 Regenerator-Speed Converter (Anarts) \$30. Model 15 Teletype Printer \$45. Model 14 Teletype tape reader and spare, \$15. Siemens tape reperforator and spare, \$15. Or \$130 the lot. All in working cond, comp with circuits and information. No further use. Max VK3AFF OTHR. Ph (060) 72 5217.**

**RTTY Egalmaat. Model 15 with P/S and loop. \$60. VK3EO. Ph (03) 338 2105.**

**RTTY Gear, Model 15 Teletype with cover and all keys on keyboard intact, vly clean, governed motor, some RTTY books and info, loop supply, ETI mod/demod built in attractive comm box with tuning ind. LED's, all working and will demonstrate if reqd. (Requires 115 VAC 2amp t/frm). \$155. VK3UV OTHR Ph. (03) 580 6424.**

**Star ST700 TX, 100W O/P from 2 x 6196s, Star SR700A RX, 5 amateur bands plus 5 others, sep. match speak, comp with leads to work in TXCVE or split, \$350 or consider swapping for microcomputer equip. Steve VK3ZY, OTHR. Ph (03) 277 4748 AH.**

**Steel Mast. 40ft tubular (Hills telemast) with guys, also 5/8 steel CB vertical ant with radials plus 80ft (approx) RG8 coax. The lot \$100. Purchaser to dismantle and cart away. (03) 232 8619 AH.**

**Yaesu FT101E HF TX 10-160m, 240V AC, 12V DC, recently checked OK, with cords, manual, orig. pack. \$540. VK3KGX. Ph. (03) 658 3869 or 528 4229 AH.**

**Yaesu FT101 2D HF Txcvr, WARC bands, fan, CW filter, mic, YD148, EC, very little use. \$750 ONO. Ph (052) 9 5783 BH, (054) 55 2393 AH.**

**Yaesu FT101E Txcvr 10-160m with 11m, as new cond. in orig carton with service manuals etc. \$600 ONO. Also Dual band 10/15m beam, EC. Type CE-4.2. \$70 ONO. VK3VCZ. OTHR. Ph (054) 84 1777.**

**DECEASED ESTATE. Yaesu FT902D Txcvr, comp with YD 148 deck mic, equip in orig carton, comp with inst. manual. \$800 ONO. Kenwood TS520S, plus DG 5 dig. display, comp with DK520 adapt for display. Also cables. Also Yaesu desk and hand held mic. \$550 ONO. Trio TS500, plus PS 500 pwr supply, comp with mic. An older type of rig, but in EC. \$200 ONO. Leader Model LSG-10 SIG GEN. Hans VK3NCS (OTHR as VK3ZLI). Ph. (03) 555 8666, 8.30 am-4.00 pm Mon.-Fri.**

#### FOR SALE — OLD.

**FT620B Txcvr, in as new cond with 75W Lin Amp and low noise preamp. \$400. Videcon camera tube with yoke and case, \$75. 4CX1000A valve \$25. VK4ZEO. Ph (07) 200 1406.**

**Kenwood TS520S DC to DC converter, two valves and mic. \$500 ONO. Kenwood TR2200A 2m. Ch. 40, 50, 51. Rep Ch 42, 44, 46, 48. \$135 ONO. Ph (071) 43 5310 BH.**

**Tandy TRS-80 Model I, Level II Computer, 16K RAM, Tandy green screen monitor, tape leads, books on self teaching, games, reference and tech manuals, software. Very little use. \$800 ONO. Icom IC-502 6m SSB Txcvr, mic, carry strap, 30W linear, all leads etc. EC. \$200 ONO. Dick Smith Super 80 computer tech manual and basic handbook, \$15 posted. Noel, VK4BFX. Ph (074) 22 2533 BH (free call).**

**TS520S Kenwood Txcvr \$495. VFO520 \$120. AT200 \$135. SP520 \$30. All EC. 30 day written warranty. Freight subsidised. Orig. pack. VK4SZ. Ph (070) 61 3286 (special price on complete station).**

**TH3 Mk 3 GC, \$100. FT101-E, GC, \$500. FL2100-B Linear \$500. VK4ST. Ph (071) 91 1172.**

**Transverter, 70cm, all mode model MUV-430A covers 430-440MHz, all repeaters, use with 2m Txcvr, 10W output. Mint cond. \$300. VK4UX OTHR. Ph (075) 62 1478.**

**YAESU FRG-7 RXA1, \$200. Icom IC228 Txcvr, A1 \$200. Tono 7000 Comm computer, A1, \$500. Kenwood TS700SP 2m all mode Txcvr, A1, \$400. Kenwood TS520S Txcvr, A1, \$450. Kenwood VFO520 ext. VFO, A1, \$100. Kenwood TV506 6m Transverter, A1, \$120. Mizuho DX555 freq counter and marker, A1, \$100. Katsumi Mike Kompactor, A1, \$20. All in orig cartons with manuals. Mike, VK4KMD. Ph (076) 35 6911.**

#### FOR SALE — SA

**Kenwood TS520S Txcvr with SP-520 speak, MC-50 deck mic, all in EC with manual, boxes, \$530. Regency scanner, model ACT-R-10H-L-U, crystal controlled, 10 ch with 2m rocks, \$100. Reflector Telescope 3", with tripod, lens, moon & sun filters, \$60. L50582. (085) 22 3967.**

**SIEMENS TELEPRINTER. Model 100, \$250. Hal ST5000 Mod-Demod. \$125. Kenwood TR9000 2m all mode Txcvr \$400. Kenwood TS120S HF Txcvr \$450. 3 el beam TH3JR. \$100. Ian VK5MA. Ph (08) 212 1350 or (08) 384 6884 AH.**

#### FOR SALE — WA

**RTTY Equipment. Model 15 printer, homebrew Mod-Demod. and scope. Everything needed for RTTY operation. \$150. Tim VK6VI. Ph (03) 387 5462.**

#### FOR SALE — TAS.

**Koa KP202 2m FM hand held \$140. Chirnside CE-58 trap vert \$50. VK7KWC. Ph (002) 44 1268.**

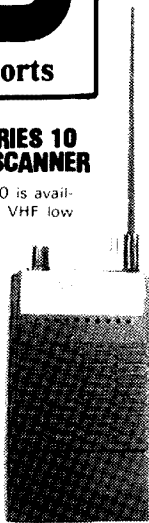


electronic imports

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Crystal controlled the FS-10 is available in both VHF high and VHF low band versions.

Using a unique dual transistor low noise cascade RF amplifier Mirecom have provided the FS-10 with an amazingly high sensitivity. Rechargeable batteries and charger are supplied as standard and a range of accessories is available.

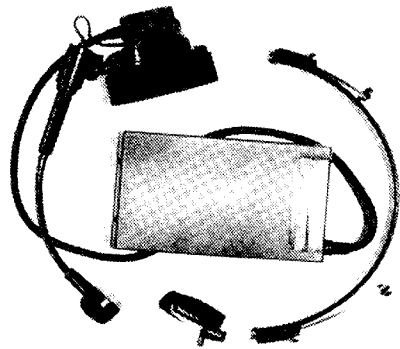
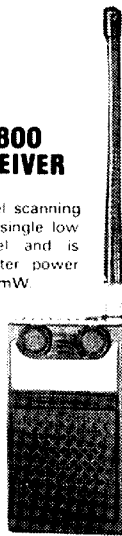


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A small pocket 10 channel scanning receiver which includes a single low powered transmit channel and is available in two transmitter power versions 10 mW and 100 mW.

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W0413

|                           | Gain dbi | Boom  | Price incl. balun |
|---------------------------|----------|-------|-------------------|
| 15/11/10 Mx               |          |       |                   |
| ATN 20-30-1 rotary dipole |          |       | \$41              |
| 10/11 Mx model            |          |       |                   |
| ATN 28-29-3B 10 Mx        | 10.00    | 3.5 M | \$77              |
| ATN 27-18-3B 11 Mx        | 10.0     | 3.5 M | \$77              |
| ATN 27-30-3B 10/11 Mx     | 10.0     | 3.5 M | \$92              |

| 6 Mx          | Gain dbi | Boom  | Price incl. balun |
|---------------|----------|-------|-------------------|
| ATN 50-52.5-5 | 11.9     | 3.5 M | \$97              |
| ATN 50-53-8   | 14.2     | 5.5 M | \$153             |
| ATN 50-53-11  | 16.2     | 9.0 M | \$194             |

| 2 Mx             | Gain dbi | Boom  | Price incl. balun |
|------------------|----------|-------|-------------------|
| ATN 144-148-8    | 12.7     | 2.2 M | \$60              |
| ATN 144-148-11   | 14.6     | 3.8 M | \$71              |
| ATN 144-148-16   | 17.0     | 6.3 M | \$91              |
| ATN 144-148-13WS | 17.3     | 7.0 M | \$91              |

| 70 cm Model (N Conns) | Gain dbi | Boom  | Price incl. balun |
|-----------------------|----------|-------|-------------------|
| ATN 420-470-6         | 10.2     | 0.6 M | \$46              |
| ATN 420-470-14        | 14.2     | 1.5 M | \$67              |
| ATN 420-440-11        | 15.7     | 1.85M | \$71              |
| ATN 420-440-15        | 16.7     | 2.85M | \$81              |
| ATN 420-450-27        | 16.7     | 3.05M | \$101             |
| ATN 432-16LB          | 17.2     | 3.7 M | \$87              |

| UHF CB (N Conns) | Gain dbi | Boom  | Price incl. balun |
|------------------|----------|-------|-------------------|
| ATN 47-5         | 9.2      | 0.65M | \$46              |
| ATN 47-11        | 17.0     | 1.7 M | \$67              |
| ATN 47-15        | 17.8     | 2.8 M | \$77              |

Amateur TV Translator  
ATN 580-14 (N Conns) 17.5 2.0 M \$71

**ALL LISTED HF ANTENNAS** use top grade 6063-T83 seamless tapered and swaged tubing elements with non-brittle ABS tough weather resistant insulators. Booms are 2" OD (longer booms use guys supplied) and elements taper from 1" OD or 1.5" OD depending on length. Longer elements use positive rake on insulators to reduce unsightly sag. The best possible materials have been chosen to suit tough Australian weather conditions.

OSCAR PHASE III Complete kit of Circularly Polarised 16 EL for 2 Mx + 28EL for 70cm + Phasing Harnesses + Fibreglass Crossarm + Bracket \$439.

TRAPLESS TRIBANDERS, 13-30 MHz, Continuous Coverage (Includes new WARC & CB) (LOG PERIODICS)

| Model   | Elements | Boom (metres) | Gain dbi Minimum | Price with 2kW PEP Balun |
|---------|----------|---------------|------------------|--------------------------|
| 13-30-6 | 6        | 6.0           | 7.5              | \$327                    |
| 13-30-8 | 8        | 8.5           | 9.0              | \$409                    |

TRAPLESS DUOBANDERS, 20-30 MHz, Continuous Coverage (Includes new WARC & CB) (LOG PERIODICS)

| Model    | Elements | Boom | Gain dbi | Price |
|----------|----------|------|----------|-------|
| 20-306S  | 6        | 4    | 7.5      | \$204 |
| 20-30-6L | 6        | 6    | 8.5      | \$235 |
| 20-30-8  | 8        | 8.5  | 10.2     | \$306 |

MONOBANDERS — For 14 and 21 MHz

| Model     | Elements | Boom | Gain dbi | Price |
|-----------|----------|------|----------|-------|
| 14-14.4-3 | 3        | 6    | 9.2      | \$183 |
| 14-14.4-4 | 4        | 7    | 10.2     | \$276 |
| 21-21.5-3 | 3        | 4.5  | 9.2      | \$122 |
| 21-21.5-4 | 4        | 6    | 9.9      | \$204 |
| 21-21.5-5 | 5        | 8    | 11.2     | \$296 |

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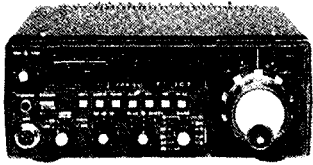


General coverage receiver 150 kHz to 30 MHz

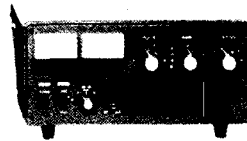
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FT-102 the DXer's dream. All mode with 100db Rx dynamic range. Accessories FC-102 antenna tuner 1.2Kw. FV-102DM Ext. VFO; SP-102 Ext. speaker with audio filter.



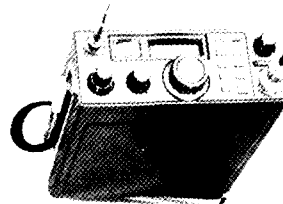
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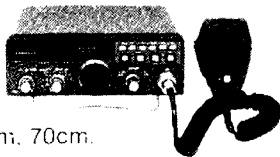
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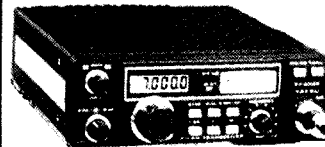
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Listen to the world with the professional all mode Communications Receiver 150 kHz to 30 MHz. Accessories include FRA-7700 Active Antenna, FRT-7700 Antenna Tuner, FRV-7700 VHF Converters (for listening to hams, aircraft etc.)

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# Amateur Radio

VOL. 50, No. 12 DECEMBER 1982

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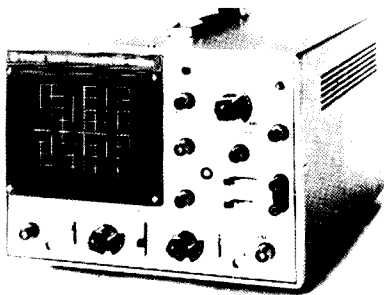
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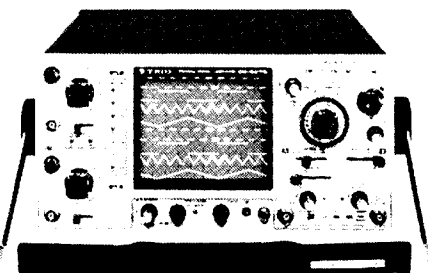


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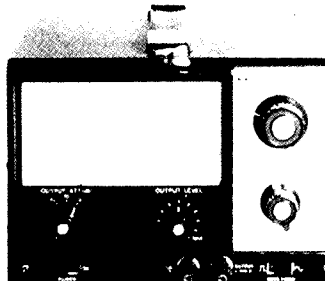
## Model 88100 Greenpar Probes \$30



Precision built professional probes at a  
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- \* Switched attenuation (10:1, 1:1)
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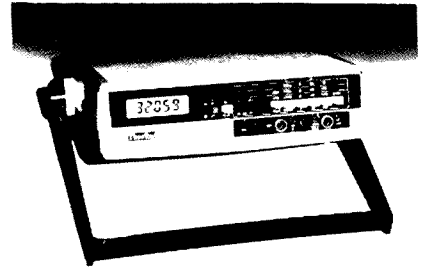
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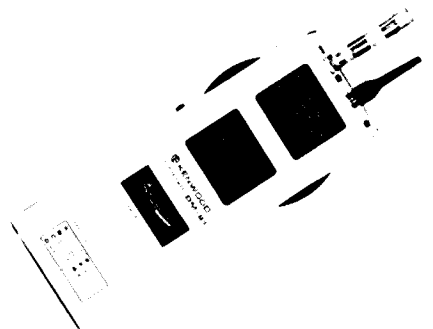
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Indispensable for R. F. work.

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# amateur radio

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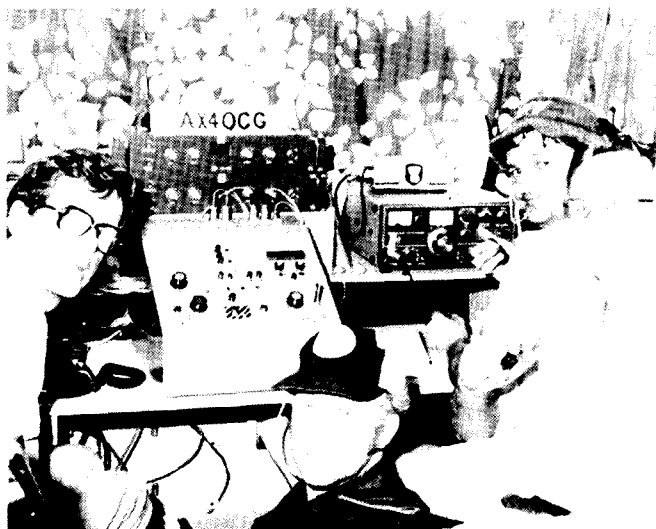
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## on the cover



L to R: Barry VK4BIK, Geoff VK4AG, Guy VK4ZXZ, Roger VK4KIE at the AX4QCG console during the Commonwealth Games. Photo courtesy: David VK4NLV



# WIA NEWS

## WCY83

The Prime Minister, Mr Fraser, has agreed that DOC will be Australia's lead agency for the year.

Mr Alan Gunter, First Assistant Secretary, has been appointed as officer-in-charge of WCY83 operations.

## REVISED POLICY

Following the recent meeting between the Wireless Institute of Australia and the Department of Communications, the existing policy in respect to the allotting and reservation of a call sign for use by an amateur station has now been reviewed.

In future, where a call sign is cancelled in the event of the death of the holder, that call sign will be reserved for a period of two years.

When a call sign is cancelled for any other reason, it will no longer be reserved and will therefore be available for immediate reallocation to a new amateur station.

In exceptional circumstances, i.e. where an amateur can satisfy the Department that he will be temporarily overseas or interstate in his employment but intends to return to his original address, the amateur's call sign may be reserved, at the State Manager's discretion.

The Amateur Operator's Handbook will be amended in due course to reflect the abovementioned policy changes.

AR



## INTERNATIONAL NEWS

### AUSTRALIAN ELECTED SECRETARY-GENERAL OF ITU

At a meeting in Nairobi on 7 October, 1982, Australian Mr Richard E. Butler was elected Secretary-General of the International Telecommunication Union. He has previously held the position of Deputy Secretary-General since 1968.

Prior to his election as Deputy Secretary-General, Mr Butler occupied various senior posts in the Australian Telecommunication Administration.

Mr Butler was a deputy leader of Australian delegations to major UN and ITU Conferences, as well as participating in the work of the Administrative Council and various study groups.

### NEW DEPUTY SECRETARY-GENERAL OF THE ITU

On 11 October, 1982, Mr Jean Jiguet, from Cameroon, was elected as the Deputy-Secretary-General of the International Telecommunication Union.

Mr Jiguet has been very active with the ITU since 1973 and has also been a prime mover in the development of telecommunications in Cameroon.

### FROM INDIA

VU stations are now permitted to use a 50 kHz segment in the 80m band (3.500-3.540 and 3.890-3.900 MHz).

### FROM THE PHILIPPINES

The PARA Board approved plans for celebrating PARA's golden year in 1982 which culminated in a grand celebration on its birthdate, 27 November.

There was a dinner with show, raffles and prizes organised by Cesar DU1AMO. Cesar also

chaired the successful PARA Golden Night held 5 April 1982, at the Century Park Sheraton Hotel, closing the IARU Region III Conference in Manila.

Other events held this year were public display of amateur radio called "Talk to the Philippines", to arouse and enlighten public awareness to the hobby, distribution of institutional awards to deserving amateurs, and the use of a special call sign prefix — 4D.

### FROM HONG KONG

Two beacons operate from Hong Kong:—  
VS6TEN 28.290 MHz A1A  
10 watts RF into A ¼ wave ground plane.  
VS6SIX 50.075 MHz A1A  
10 watts RF into A ½ wave ground plane.

### IARU REGION III AWARD

The NZART have been chosen by the Region III Association to administer this award. The rules for the award as announced by NZART are:

1. It is available to licensed operators and SWLs.
2. Contacts made after 5th April, 1982 are eligible, but certificates will date from 1st January, 1983, as part of World Communications Year.
3. QSL cards are not required. Send a certified list of eligible contacts from log book.
4. The cost is \$1 surface (\$2 airmail) to defray postage and packing.
5. The basic award requires contacts with seven of the eligible countries. A Silver Star endorsement requires twelve countries and a Gold Star endorsement requires seventeen countries.
6. Awards may be endorsed for any mode or band.
7. Eligible countries are: Japan, Australia, New Zealand, Korea, Philippines, Hong Kong, Thailand, Papua New Guinea, Singapore, Fi-

ji, India, Indonesia, Malaysia, Sri Lanka, Tonga, Western Samoa, Solomon Islands, Bangladesh.

8. Applications to NZART Awards Manager, 152 Lytton Road, Gisborne, New Zealand.

### NEW MEMBER

After the closing of postal vote MEM-9 which had been requested to the IARU Region III Association Member Societies not represented at the Fifth Regional Conference, the Secretary declared on July 2 last that the Bangladesh Amateur Radio League (BARL) was admitted to membership in the Association.

The BARL is the eighteenth member society of the Association, and surely the Directors, Secretary and Members of the Association warmly welcome this new member to our organisation.

### REGION III SECRETARIAT OPENED IN TOKYO

As a result of the decisions made by the Region III Conference in Manila, the secretariat of the IARU Region III Association was moved from Singapore to Tokyo, Japan, effective from April 20, 1982.

After necessary arrangements, the new Secretariat was opened at the place as mentioned below on June 2, last.

Postal Address:  
Masayoshi Fujioka, JM1UXU  
Secretary — IARU Region III Association  
PO Box 73, Toshima, Tokyo 170-91,  
JAPAN

Location:  
Daini (No. 2) Matsuoka Bld.,  
14-6, Sugamo 1-Chrome, Toshima-Ku,  
Tokyo 170, JAPAN

AR





## SUPPORT YOUR FELLOW AMATEUR

Another year draws to a close, a year filled with so many events in our world of amateur radio.

Just what 1983 holds, remains to be seen, although it is only too obvious that Australia's immediate economic outlook appears gloomy. There is little doubt that many primary and secondary industries are facing significant problems, which in turn, are generating unemployment and other difficulties. To date, tertiary employment appears to have been insulated to a large extent from these traumas.

Unlike governments, the Institute does not have a "CAPTIVE AUDIENCE"!! You must pay your local council rates and government taxes or pay the consequences. In the case of the Institute, you do not have to belong — you do have a choice and in these trying times it is unfortunate that some amateurs may be unable to continue membership.

However, the work of the Institute must continue, for it is often during times of economic hardship that the promoters of new schemes and money making ventures are heard.

Maybe cable television fits within this category. I don't hear too many members of the public DEMANDING such a service, yet it would appear that the "service" will be introduced. Sure, it could create additional employment and, hopefully, only the user will pay, not all of us through increased charges for goods and services.

But of even more importance is the likely effect of cable TV on amateur radio — that is, if experience from overseas is any indication THE INSTITUTE MUST REMAIN VIGILANT AND IT MUST HAVE THE RESOURCES TO DO SO.

I sincerely hope that your choice is to renew membership or to join the WIA. YOUR FELLOW AMATEUR NEEDS YOUR SUPPORT.

Whilst on the subject of support, I would like to thank the many amateurs who have gone out of their way to show their appreciation for the work done by the various WIA officers and in particular the magazine team, for their efforts during this year. The year has seen the Institute and Amateur Radio's image enhanced in many areas.

On behalf of the executive officers of the Institute and the Federal office staff, I wish you all a happy and safe Christmas and a prosperous New Year.

*Peter Wolfenden, VK3KAU  
Federal President.*

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# WIA DIRECTORY

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VK7: Mr. Peter Fudge, VK7BQ.

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## AUSTRALIAN CAPITAL TERRITORY:

President — Mr. W. R. (Bill) Maxwell, VK1MX.

Secretary — Mr. Richard B. Jenkins, VK1UE.

Broadcasts — 3.570 MHz and 2metre Channel 6950 at 20:00 hours.

General Meetings — Fourth Monday of the month.

## NEW SOUTH WALES:

President — Ms. Susan J. Brown, VK2BSB.

Secretary — Mr. Athol D. Tilley, VK2BAD.

Broadcasts — 11:00 and 19:30 hours.

Frequencies bracketed at 11:00 only.

Frequencies: (1.8125), 1.825, (3.585), 3.595, (7.146), 28.320, 52.120, 52.525, 144.120 MHz.

6850 Wollongong, 7000 Sydney, (7100 Westlakes), 8525 Sydney.

## VICTORIA:

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Secretary — Mr. Des J. Clarke, VK3DES

Broadcasts — 1.840, 3.600, 7.135, 53.032 (AM), 144.2 (USB) MHz and 2metre Channel 2 (5) repeater at 10:30 hours.

General Meetings — Second Wednesday of each month at 20:00 hours.

## QUEENSLAND:

President — Mr. Guy D. Minter, VK4ZXZ.

Secretary — Mr. Fred J. Saunders, VK4AFJ.

Broadcasts — 1.825, 3.580, 7.120, 14.342, 21.175, 28.400 MHz.

Repeaters: Channel 6700 and 7000 at 09:00 hours.

Re-broadcasts — 3.605 MHz on Mondays at 19:30 hours and 20m RTTY at 20:00 hours.

General Meetings — Third Friday of each month at 19:30 hours.

## SOUTH AUSTRALIA:

President — Mr. W. M. (Bill) Wardrop, VK5AWM.

Secretary — Mr. David M. Clegg, VK5AMK.

Broadcasts — 1.850, 3.550, 7.095, 14.175, 21.195, 28.470, 53.1 MHz.

Repeater: Channel 7000 at 09:00 hours.

General Meeting — Fourth Tuesday of each month at 19:30 hours.

## WESTERN AUSTRALIA:

President — Mr. Bruce Hedland-Thomas, VK6OO.

Secretary — Mr. Fred Parsonage, VK6PF.

Broadcasts — 3.560, 7.050, 14.100, 14.175, 28.470, 53.1 MHz. 2

metres: Channel 2 Perth, Channel 2 Wagin at 09:30 hours.

General Meetings — Third Tuesday of each month.

## TASMANIA:

President — Mr. Lloyd Cherry, VK7BF.

Secretary — Mr. Peter Clark, VK7PC.

Broadcasts — 7.130 MHz SSB with relays on 6 and 2 metres Channel 2 (south), Channel 8 (north), Channel 3 (north-west), at 09:30 hours.

## NORTHERN TERRITORY:

President — Mr. Terry A. Hine, VK8NTA.

Vice-President — Mr. Barry Burns, VK8DI.

Secretary — Mr. Robert Milliken, VK8NRM.

Broadcasts — Relay of VK5WI on 3.555 MHz. and on 146.5 MHz. at 09:30 hours. Slow morse transmission by VK8HA on 3.555 MHz at 10:00 hours almost every day.

## POSTAL INFORMATION:

VK1 — P.O. Box 46, Canberra, 2600. Phone (062) 41 3889.

VK2 — P.O. Box 1066, Parramatta, 2150. 109 Wigram Street, Parramatta. Phone (02) 689 2417. Dural during B'casts only Phone 651 1480.

VK3 — 412 Brunswick Street, Fitzroy, 3065. Phone (03) 417 3535 from 10:00 to 15:00 hours weekdays.

VK4 — G.P.O. Box 638 Brisbane, 4001. Phone (07) 349 7768.

VK5 — G.P.O. Box 1234, Adelaide, 5001. West Thebarton Road, Thebarton. Phone (08) 352 3428.

VK6 — G.P.O. Box 10, West Perth, 6005.

VK7 — P.O. Box 1010, Launceston, 7250.

VK8 — (included with VK5). Darwin Amateur Radio Club, P.O. Box 37317, Winnellie, Northern Territory, 5789.

## SLOW MORSE TRANSMISSIONS:

Most week day evenings from about 09:30 UTC onwards around 3.550 MHz.

## VK QSL BUREAUX:

The following official list of VK QSL Bureaux are all inwards and outwards unless otherwise stated.

VK1 — QSL Officer, G.P.O. Box 46, Canberra, A.C.T. 2600.

VK2 — QSL Bureau, P.O. Box 73, Terallba, N.S.W. 2284.

VK3 — Inwards QSL Bureau, Mrs. Barbara Gray, VK3BYK, 1 Amery Street, Ashburton, Vic. 3147.

VK3 — Outwards QSL Bureau, Mr. Des Clark, VK3DES, C/o VK3 Rooms.

VK4 — QSL Officer, G.P.O. Box 638, Brisbane, Qld. 4001.

VK5 — QSL Bureau, Mr. Ray Dobson, VK5DI, 16 Howden Road, Fulham, S.A. 5024.

VK6 — QSL Bureau, Mr. Jim Rumble, VK6RU, G.P.O. Box F319, Perth, W.A. 6001.

VK7 — QSL Bureau, G.P.O. Box 371D, Hobart, Tas. 7001.

VK8 — QSL Bureau, C/- VK8HA, P.O. Box 1418, Darwin, N.T. 5794. VK9 & 0 — Federal QSL Bureau, Mr. Neil Penfold, VK6NE, 388 Huntriss Road, Woodlands, W.A. 6018.

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VK2 — Mr. Wally A. Watkins, VK2DEW & Mr Tim Mills VK2ZTM.

VK3 — Mr. Des J. Clarke, VK3DES.

VK4 — Mr. Guy D. Minter, VK4ZXZ.

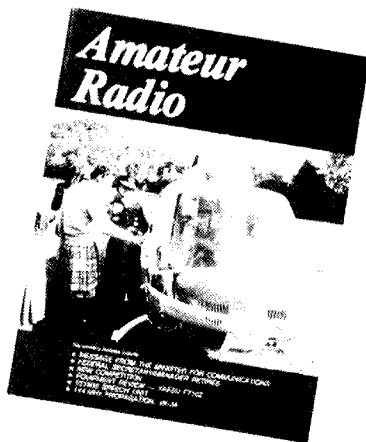
VK5 — Mr. David M. Clegg, VK5AMK.

VK6 — Mr. Bruce Hedland-Thomas, VK6OO.

VK7 — Mr. Ivan Ling, VK7XL.



# Amateur Radio's Golden Jubilee



YES THAT'S RIGHT!! How many of you have noticed the Volume No. on all of this year's 'Amateur Radio' magazines? Well for those of you who haven't noticed, this is our 50th year of publication. The first issue of 'Amateur Radio' was published in October 1933, and our actual 'BIRTHDAY' is not until October 1983. In publishing circles however, because the first year's publication is always noted as No. 1, we therefore have entered our 50th year of publication. This is really a tremendous milestone in our history.

The cover of that first issue is printed herewith, together with the editorial for that issue — read through it — haven't things changed? (or have they?). The first issue contained just twenty four pages and carried a cover price of 6 pence (5 cents). Today AR does not quote a cover price, not because we might consider it 'PRICELESS', but for certain technical and legal reasons.

The publications committee consisted of all volunteers — just like today, except our production has, of necessity, gone commercial, to alleviate the increasing load being borne by our volunteers.

Some of the early volunteers are still alive today, and next year we hope to bring you a story about them. I hope the changes in AR over the years have been to the benefit of our hobby, Amateur Radio, and as always, AR will continue to have just one basic theme: "AN INFORMATION SERVICE AND FORUM FOR OUR MEMBERS, AND AN AVENUE TO PROJECT YOUR IDEAS AND EXPERIMENTS TO OTHERS OF A SIMILAR INTEREST".

We have not lasted fifty publication years without your support, and I trust we will retain it for many years to come.

I guess no-one will object if I propose toast, on your behalf, to your magazine 'Amateur Radio', and say just this: "HAPPY BIRTHDAY AR. LONG MAY YOU SERVE THE MEMBERS OF THE W.I.A."

Bruce Bathols, VK3UV  
Editor

With this, the first issue of "Amateur Radio," a long-felt want is being satisfied. It is a far cry from our old Magazine which appeared in 1921 to the present time, and during the intervening years, many and varied attempts have been made to offer the army of radio enthusiasts in Australia something worth while, which would be of real interest, value and help. It is the intention of the magazine committee, the council, and all concerned, to see that every section of our vast radio community is catered for in these pages. With that object in view, pithy news of general interest will regularly find space in its pages. To all members of the W.I.A., especially those of the Victorian Division, the R.A.A.F.W. Reserve, and all radio enthusiasts, we confidently look for wholehearted support in this undertaking.

This magazine is the official organ of the Victorian Division, every financial member of which will receive a copy free, and every Ham should see that they receive one. We have in Victoria approximately 300 members and three affiliated clubs, but there are quite a number of holders of the A.O.P.C. who have not yet enrolled. In view of the fact that the officials of the Institute do an enormous amount of work voluntarily (not only in the interests of our members but also of the non-members), it is not in keeping with the **Ham spirit** to take a share of the advantages which the other fellows' fees and energy provide. Our ranks are open to anyone who is genuinely interested in the science of Wireless, irrespective of their knowledge of the subject, and a hearty welcome is assured to all members with a definite promise of assistance and help, in any desired direction within our scope.

The country experimenter will now be in closer touch with the city enthusiasts and will be kept informed of all Institute activities right up to the minute.

The Institute, in a general sense, is divided into four sections (with a possible fifth to be formed later). Of these, the chief is, of course, the **Executive**, known as the Council, which consists of the President, Secretary, Treasurer and ten full members elected annually, whose duty it is to shape the destiny of the Division, control its funds and do all such acts and deeds which are essential for the successful functioning of the whole, within the limits of the constitution.

The **Short Wave Group**, which is the latest section, is devoted to the Experimental side of short wave transmitting and receiving, and much good work is being done by this very enthusiastic body.

The **"Key" Section**, probably the largest numerically of all the sections, is a very active group whose work largely constitutes filling the atmosphere with "dits and dahs", burning much midnight Yallooru energy, and in general communication with the uttermost ends of the earth, with as low power as possible. It is largely from this group that the Royal Australian Air Force Wireless Reserve was recruited, and so successful has been the experiment, that it has now been officially accepted as an indispensable unit of our country's Defence Forces. The **"Key" Section** is largely responsible, in conjunction with other Amateurs of the world over, for the successful pioneering of the many frequencies or wavelengths which were at one time considered impossible, but which are now in general use.

The **Telephone Section**, which is undoubtedly the best known to the general body of listeners, is also very live, energetic and enthusiastic. Their work generally needs no amplification — the very high standard of their transmissions, excellent arrangement of programmes from a purely listener's viewpoint and the high entertainment value of their labours, are a real asset not only to the W.I.A., but to the Government and the Radio Trade generally. There are 22 Country and 24 Metropolitan Amateur Stations actively engaged in entertaining listeners during nonbroadcast hours on week nights and Sundays. In many cases in the country, they provide the only programmes that can be received decently owing to atmospheric conditions, particularly during daylight.

Mention should be made of the **Technical Development Section**, a small committee of highly trained technicians who control the Instrument Library of the Institute, and who are always ready and willing to offer the benefit of their greater knowledge to their less advanced fellow members.

The possible fifth section to be known as the Super Het Club, depends largely upon the public response to the suggestion and, if formed, will be open to everyone. Interesting competitions with valuable prizes for the logging of distant stations, advice on constructing efficient receivers, short

wave converters, interesting lectures, a portion of this magazine devoted entirely to their interests, participation in our social life, and a host of other interesting and entertaining features will be arranged, the cost being practically reduced to subscription to this publication.

There is several hundred pounds worth of highly efficient gear, such as broadcast and short wave transmitters and receivers, meters of all kinds and technical publications at the disposal of our members and it is the earnest desire of the Council that the fullest possible use be made of them.

This first editorial would not be complete without reference to the wonderful assistance and courteous consideration that we have received from the Department of the Chief Inspector of Wireless at all times. To Mr. J. Malone and his staff, Messrs. Martin, Dobbin, Conry, Greig and Dunne, do we express our cordial greetings and thanks.

We have every confidence that, in this journal, our many transmitting and receiving radio friends will find news of interest of other people's doings and at the same time have a forum in which to place their own ideas pertaining to Amateur Radio.

## THE EDITOR'S CO.

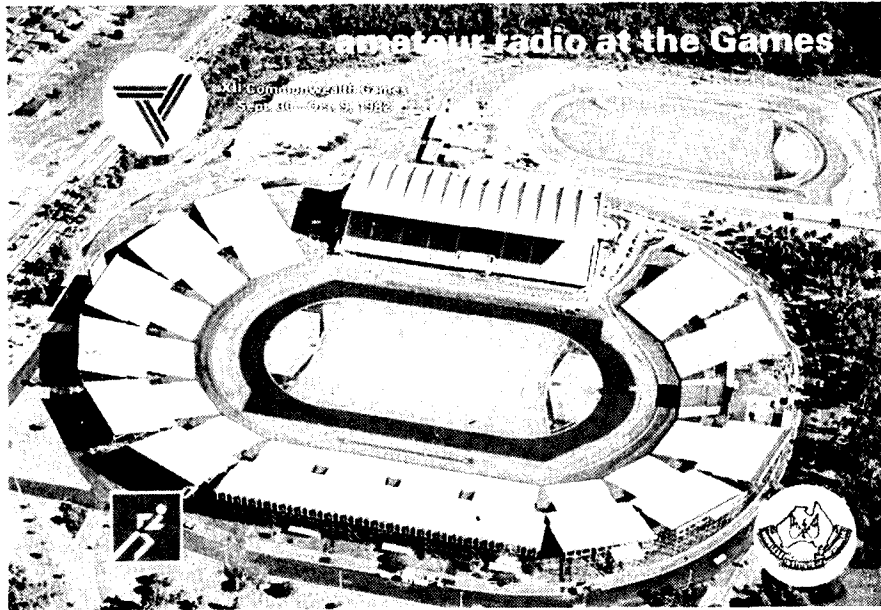
Our President has introduced us in no uncertain manner. Concise, without any "padding", he has laid bare the workings of the W.I.A. To him we offer our sincere thanks: to our members, for their approval, we offer "Amateur Radio".

With this first issue, it is most necessary to mention our various advertising friends. These people are the very life blood of "Amateur Radio", inasmuch as their dues in no small way contribute to allaying our printing costs. You can believe us when we tell you that selling advertising space is no easy matter.

We appeal to you to support our advertisers, and when you buy any parts to make that new set, we want you to mention that you saw their ad. in "Amateur Radio", thus making Goodwill for the magazine with the surety of renewal of contracts. We cannot stress this point too strongly.

So this is "Amateur Radio!" If you don't like it, tell us; if you do, tell your friends — **THE EDITORS.**

Editorial reprinted from the first Amateur Radio, 1st October 1933. **AR**



# BEHIND AX4CG

David Jones VK4NLV,  
OPERATIONS MANAGER

6 Barfoot St., Nashville, 4017

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## A behind the scenes view of amateur radio station AX4QCG which operated at the XII Commonwealth Games, Brisbane, from September 30 to October 9, 1982.

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*"Welcome to the Games. The XII Commonwealth Games are being held at Brisbane, Australia, and AX4QCG is the official amateur radio station.*

*"Like Brisbane, like Australia, like amateur radio, these Games are friendly. So welcome to the friendly Games.*

*"The Wireless Institute of Australia, the world's oldest amateur radio society, was founded in 1910. In 1911 to celebrate the coronation of King George V, an Empire Games was held in London.*

*"Side by side, amateur radio and the Games have become stronger and friendlier.*

*"Both amateur radio and the Commonwealth Games have as their basic objective to promote international understanding, goodwill and friendship. Long may these ideals last!*

*"AX4QCG is organised, funded and staffed by the Queensland Division of the Wireless Institute of Australia as a service to interested amateurs in the British Commonwealth, and also to amateurs who are interested in that great band of independent nations across the globe called the British Commonwealth.*

*"On behalf of the VK4 Division of the Wireless Institute of Australia, I welcome you once again to the friendly Games and look forward to an enjoyable QSO."*

With those words the VK4 Division President, Guy VK4ZXZ, officially commenced transmissions from AX4QCG, the official amateur station, at the QEII sports complex, Nathan, Brisbane, on September 30, 1982.

### GETTING APPROVAL

Such a station had been born in the minds of VK4 Division members soon after Brisbane's bid for the 1982 Games had been successful.

After the success of CG6A in Edmonton at the XI Commonwealth Games, the division contacted the Commonwealth Games Foundation advising the communications staff of the traditional presence of an amateur radio station at all Commonwealth and Olympic Games.

We were assured that, in Brisbane, the tradition would be upheld and there would be a place for amateur radio. We were advised to make contact about two years before the Games.

Regular contact was maintained with the Foundation by the Division Secretary, Fred VK4AFJ, who often found great difficulty in obtaining answers to questions from Foundation officers who were at first unsympathetic. But once their problems of a host broadcaster were solved and sponsors and ticket money flowed, they were happy to look at the non-revenue producing areas.

Although our position had been assured, by May, 1982, we still had no real directions. A meeting was arranged between the Foundation's Communications Division Manager, Mr Trevor Steer, and the Division represented by the Secretary Fred Saunders,

Senior Vice-President Rod Taylor VK4NBD/YRT, and David Jones VK4NLV who had been volunteered as operations manager. It then became clear that, although the Foundation had made provision for our station theoretically, they had no idea of what an amateur radio station really encompassed.

Once it was realised we envisaged using up to 400 watts PEP on HF (HF!) and 25 watts on VHF/UHF and a frequency agile station at that, problems arose with DOC via the host broadcaster.

At the main Games venue, QEII, there would be a vast array of electronic equipment including fourteen TV cameras, computers, two electronic scoreboards, and more than two hundred handheld transceivers from sources as diverse as the Queensland Police, Brisbane City Council, the South East Queensland Electricity Board and other essential services.

Many of these would have dubious immunity from RF fields.

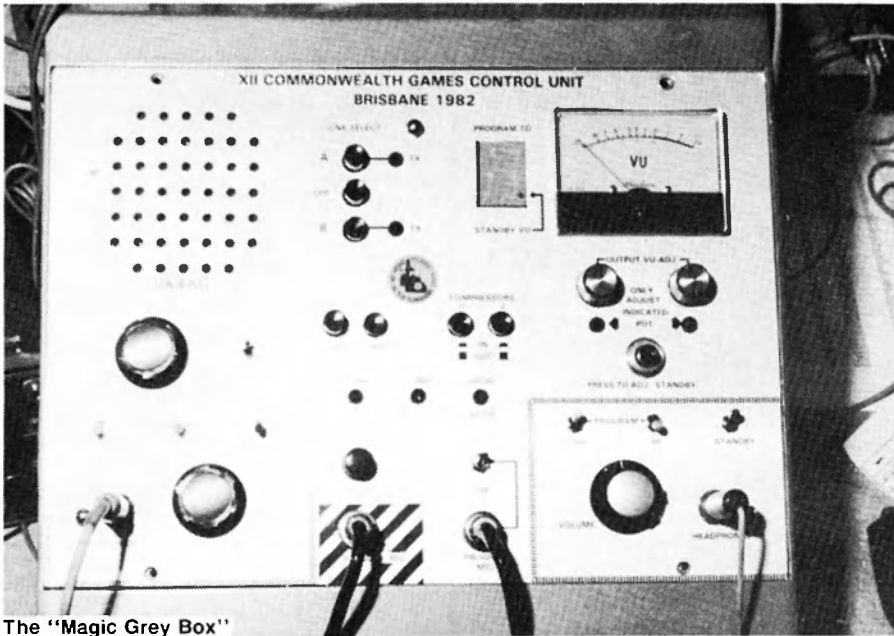
Compounding this, QEII is about 1½ km from Mt Gravatt, the city's main telecommunications and commercial services receive site.

Since communications were the key to a successful Games, the authorities were understandably extremely concerned about such a high powered service.

### FINDING A SITE

After inspecting the site, we chose a remote corner but this had been taken for 105mm howitzers for 21-gun salutes!

A second choice was destined to have a VIP restaurant neighbour and a bus station with



The "Magic Grey Box"

extensive loud hailer and talk-through repeater interference!

In the end, we agreed reluctantly that to operate an HF station in such a sensitive environment was difficult to say the least.

We settled for a remote HF transmitting site linked with QEII by UHF. In retrospect, VHF would have been better due to the many UHF circuits.

The authorities decided: No HF on site; VHF to be extremely limited in power and use; and UHF be used with an input power of less than 0.5 watts to a directional antenna with a gain of not less than 12dB.

With these parameters, AX4QCG organisation began with less than two months to the start of the Games.

On-air appeals for volunteers were successful and the final problems were reduced to an electronic interface between QEII UHF and HF retransmission, a suitable QTH for HF and VHF, and suitable management of the thirty volunteers to man the two stations over ten days.

Design and construction of the two interface units and transceiver establishment was left to Geoff Adcock VK4AG.

Geoff, Aaron VK4AHO and Phil VK4APA, designed a "magic grey box" to allow a 433.5 MHz signal from QEII to be received at a remote transmitting site. Geoff VK4ANP volunteered his QTH at Woodridge, about 10 km away, with an excellent suburban antenna farm including a home-brew, eight element log periodic antenna covering 13 to 30 MHz, dipoles for 40 and 80, an end fed wire for 160 plus VHF and UHF.

Station operation was to be from a caravan in Geoff's front yard between 10am and 11pm and extra runs of R8B linked his antennas. Three shifts of operators were possible.

The QEII station was established in a caravan loaned by Doug Downey VK4KSP and was conveniently located close to the Games Post Office.

Depending on the days, two or three operators would man this from 10am to 5pm while two teams of two would operate at Woodridge monitoring the link and seeking further contacts on standby transceivers.

Security/accreditation requirements at QEII

meant that the Woodridge station continued to 11pm after the other station closed.

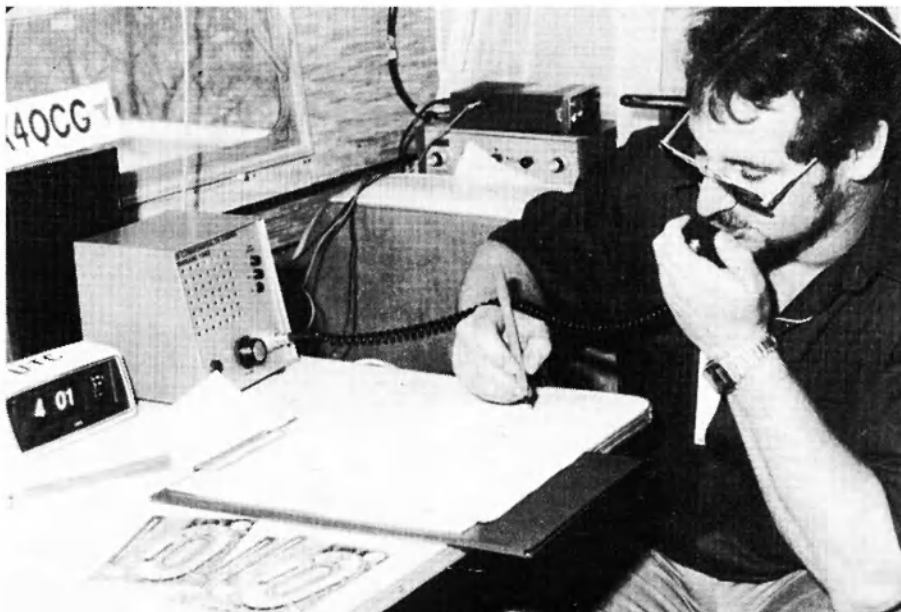
Just twelve days before the Games, DOC head office in Melbourne became concerned at the security of the UHF link because of some unfortunate incidents in VK3 and overseas.

The standard broadcast solution to the problem — a time lapse loop — was requested so any untoward transmissions could be intercepted on the UHF monitor before HF transmission!

Although a seven second delay may be admirable on repeaters, it is impractical on crowded HF bands.

We suggested a sub-audible tone be fitted to the QEII transmitter so that the UHF receiver at Woodridge would receive only that transmission.

DOC approved this and at very short notice Mike Adams VK4ZDA supplied and fitted the necessary equipment.



David VK4NLV at the mike in the caravan at QE II Stadium.

#### DETAILS OF THE "GREY BOX"

This box had three major functions. Firstly, it connected one HF set, via a UHF link to QEII. Secondly, it had to allow use of another HF (standby) transceiver, eg for SSB or CW use, and thirdly, it had to allow the roles of the two HF sets to be easily interchangeable.

Each of the two operators at the "magic grey box" had, in front of him, a headphone socket, a volume control, and three switches which enabled him to select either the main HF rig (program — from QEII), second HF rig (standby) or UHF link program.

The monitor speaker, (see photo, top left) with its associated volume control and mute switch, was for the UHF/HF link program. This enabled the monitor operator to listen to both sides of the link without headphones.

The UHF select — "A", "OFF" or "B" enabled either of the UHF frequencies to be selected, or to disable the link altogether so as to allow HF operation from the remote site when no programme was being sent from QEII.

The receiving UHF set at Woodridge, the remote HF site, was modified to act on a carrier-operated switch, (COR), with a sub-audible tone. This COR controlled the other UHF set, disabling its PTT and preventing its operation while a signal was being received, whilst simultaneously activating the transmit mode of the selected HF set. This gave full automatic control of the selected HF set from QEII.

Also incorporated in the box were:  
 (a) a VU meter which always monitored the received HF programme eg a DX station. This enabled a constant audio level to be maintained on the UHF link. This also allowed, with the push of a button, the pre-checking of received levels on the standby HF transceiver prior to its selection as the programme HF transceiver.

(b) The eight-segment LED read-out which gave visual indication of which HF Tx was in use by displaying the numbers 1 or 2.

(c) Two external TOA audio compressors of broadcast quality supplied by Del Sound Pty. Ltd., one operating on the HF programme, and

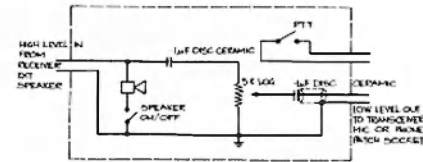


## Low Level Patching Unit

Shane Burgess VK7BX

Many members have said that they are unable to do broadcast relays because they do not have patching facilities. This simple design should overcome those problems at minimum cost.

The circuit is simply a voltage divider with the low level audio being picked off on the wiper of the pot. The speaker shown is to enable the incoming signal to be monitored. The capacitors on the input and output are for DC isolation, i.e. to prevent a DC current flow to earth and/or the other transceiver or receiver.



C2 should be soldered directly to the potentiometer and a shielded cable earthed at one end only (as shown) run to the low level output socket. The PTT switch need only be installed if your transceiver does not have a PTT switch on the front panel.

The output should be wired into a microphone plug according to the microphone plug wiring diagram in your owner's manual. The whole unit inside of the dotted line should be built in an all metal box to minimise hum and RF interference. ■

From "ORM" VK7 Div. Journal, April 1982



## COMMONWEALTH GAMES STATION — AX4QCG

This would have been one of the most successful operations undertaken by our Division. About 2800 stations around the world were contacted over the period, including many in the smaller Commonwealth countries. The operators report tremendous moral support from Australian stations in particular.

The QEII Centre attracted over 315,000 during the period and it is estimated that about half of these had to pass by the station. So you can see that the "AMATEUR RADIO COMMUNICATIONS" sign received some good exposure. As well, about 200 interstate and overseas amateurs introduced themselves and received a card.

As if this was not enough, the ABC News broadcast an evening news segment featuring the station and contrasting it with their operation. Guy VK4ZXZ, as President said the right words regarding the amateur radio aims and objectives.

I would say without hesitation that the cost of the operation to the Division (about \$1800) has been well and truly justified by the above publicity and goodwill.

David VK4DT  
A&A



Outside view of the Communications van. L to R. Rod VK4YRT/NBD, Barry VK4BIK and Guy VK4ZXZ.

*Games and be friendly always. Be proud of our operating techniques, our courtesy, and, above all, our country — VK.*

*"On behalf of the VK4 Division of the WIA, I salute AX4QCG and all who made it possible.*

*"AX4QCG is silent. Long live its spirit."*

On behalf of the WIA Queensland Division, I would like to thank all the volunteers who made AX4QCG a reality and to thank the operators listed for their courtesy and efficiency in the operation of AX4QCG.

Keith VK4ANY, Fred VK4RF, Bill VK4WO, Barry VK4BIK, Doug VK4JB, Ray VK4ACU, Doug VK4AVR, Geoff VK4AG, Geoff VK4ANP, Mike VK4AFM, Fred VK4AFJ, Rod VK4YRT/NBD, Steve VK4KSG, Roger VK4KIE, Ray VK4KWR, Des VK4KDW, Guy VK4ZXZ, Mark VK4ZJX, Ian VK4YIP, Val VK4ZVR, Xavier Roca, Anne VK4NRA and David VK4NLV, and of course Aaron, VK4AHO, Phil VK4APA, for their design work and help with the "grey box".

A&A



Matilda, the first YL of the Games.

the other operating on the UHF received audio. These units maintained constant levels on all transceivers.

The standby and programme microphones were automatically connected to the appropriate transceiver by internal switching. The programme monitor operator was also able to talk back up the link, or to interrupt the HF programme. Whenever this occurred, the UHF link was automatically disconnected, and this put the programme monitor operator to air on HF or UHF, whichever he selected. To restore the link, he simply pressed the "Reset" button.

Various coloured LED's were used to indicate the mode selected for any of the functions.

One week to go and AZ4QCG was ready technically but we still had the Games security system to overcome.

Our caravan and ancillary equipment could not be set up until one day before the opening, but this problem was overcome. A 40 knot westerly on opening day did not help when making final antenna adjustments.

But where were the contacts? When AX4QCG went to air, our normally active HF bands were quieter than any mouse!

Could it be that all interested amateurs had joined the five hundred million or so people glued to "The Box"?

However, days of active amateur radio activity followed. About three thousand special QSL cards were written and about one hundred and fifty "eyeball" QSL cards collected personally.

The Games were called "The Friendly Games" and this was certainly true of all our contacts despite contests in progress.

After 10 days, our president said:

*"AX4QCG is dead. The official amateur radio station of the XII Commonwealth Games held in Brisbane, Australia, has now joined the ranks of the silent keys.*

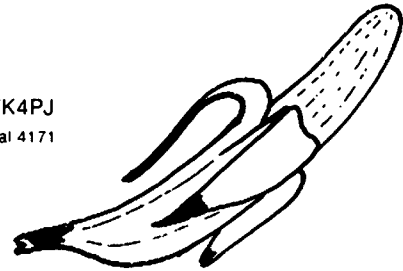
*"However, before AX4QCG is forever silenced, let us remember what it stood for. Like the Commonwealth Games, amateur radio is friendly.*

*"We help to spread goodwill and understanding between nations continually. The Games do it very well once every four years.*

*"However, the Games have made Australia as a nation walk tall! Let us learn from the*

# A BANANABENDER IN BAVARIA

Peter Brown VK4PJ/DL-VK4PJ  
16 Bede Street, Balmoral 4171



Experts have told, and will continue to tell, of the beauty of the Franconian countryside. Amateur Radio also flourishes here and the visitor who is an amateur will find his hobby an added advantage as it, in my case anyhow, provides a passport to the people, so often not available to the tourist.

I spent nearly four months at Erlangen, north of Nurnberg and my first experience was a "Flohmarkt" or flea market at Nurnberg, solely for amateur radio, signposted many kilometres ahead so that no visitor would miss his way in the big city.

Here was a huge hall almost filled with stands, or blocks of tables, upon and behind which were displayed dealers, new and second hand equipment, and amateurs surplus equipment from clubs or individuals. You could buy new, you could buy second hand, you could buy and bargain for almost anything likely to be needed by an amateur. Yes, at some of the prices I would have liked to have invested, especially VHF/UHF fittings.

This one day gathering was the biggest amateur event that I had witnessed until Friedrichafen. Some 4000 amateurs would have passed among the stands. I was fortunate that I was introduced to the "VK specialist", who is also an eye specialist, Harro DJ6RB/VK2DKD, and his XYL Yvonne DLINAY/VK5AYK, who made me most welcome in the best traditions, and helped me make regular communication with Australia. I also met Klaus DJ6LB/ex VK4AKK, and family who helped me along the track.



Harro, DJ6RB/VK2DKD and his XYL Yvonne, DLINAY/VK5AYK.

One day I visited the Erlangen City Hall where displays of all kinds of recreational activity were taking place and included was a display by the Siemens Radio Club.

Early in my stay I was introduced to Richard, DJ5QT, of Siemens Radio Club

who offered me the key to the club station DLØZ, and took steps to obtain a guest license for me namely DL/VK4PJ. Can you imagine the pencil work when logging DL/VK4PJ operating Siemens Club station DLØZ? and the repeats. The VK4PJ part appealed but the DL disappointed. A VK contact is popular in Europe. Erlangen is the HQ of the big Siemens Group of Companies and the club has been provided with excellent clubrooms and modern HF equipment, including a linear, two metre and 70 cm equipment, RTTY and SSTV. Also in Erlangen is the very active Uttenreuth Radio Club, DKØJR, with whom I was able to spend a few hours at one of their field days, held over a four day weekend. (Summer time is holiday time in Germany and there are plenty of holidays.) This field day was held on a wonderful site, the ridge overlooking the beautiful countryside was good enough to holiday upon and indeed that was what many did.

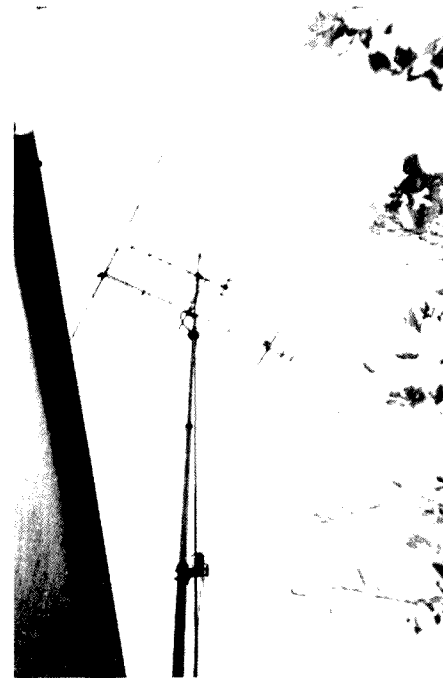
Dominating the scene was a vertical antenna complete with ground plane and fenced off with ribbon. Nearby was a large tent around which were the various HF and VHF beams, and housing the usual HF, VHF and UHF equipment as well as a couple of electric stoves, refrigerators, larders, etc. Out of earshot were a couple of alternators. Along the perimeter were the cars and tents of members. A great way to spend a weekend. Harmonics playing nearby and gave a festive air to the scene.

Another interesting and enjoyable Uttenreuth Radio Club outing was a visit to Moritzberg where Nurnberg members demonstrated the workings of the two metre and 70 cm repeaters which serve from the mountain site to the Erlangen/Nurnberg areas. This site is shared by other services and the equipment is housed in a very old but sound tower once used by an ancient religious order. The old monastery adjacent has been converted to an Inn and here members repaired for a typical Bavarian country repast. To add tone to the dinner came an elderly musician, complete with zither, who before too long was accompanied by guests singing. Repeaters seemed to be put to good use but because of language difficulties I did not use VHF/UHF.

A lot of Germans have learned and can speak good English but are lacking in any practice and thus lack confidence in carrying on a conversation in English but once started many prove their ability quite well. I have noted, ever since obtaining my license,

and working DX, that most Australians speak to foreigners too rapidly. How many foreigners have had as much practice in English as English speakers? As most of us are aware, European amateurs have many more problems to contend with than we have.

As such a high proportion of the population live in apartments, how do you get agreement to mount an antenna and feed-lines?, and how do you cope with TVI, and European QRM?



The only free-standing tower Peter saw on his trip to West Germany.

I can only remember seeing one free-standing beam tower but I did see a few beams on apartment houses and masts through the steep rooves. The German amateurs that I met seem to have taken all these problems in their stride and enjoy their hobby as much as we in Australia do. I must remark on the festive spirit evident so often and due, no doubt, to the many festivals that are held. One could probably find two festivals, with much music, food and beer, taking place any weekend and within an easy car drive from the QTH.

My association with German amateurs was an experience that I enjoyed immensely.

AR



# EQUIPMENT REVIEW

Ron Fisher VK3OM

3 Fairview Avenue, Glen Waverley 3150

## THE DRAKE TR-5 HF SSB/CW TRANSCEIVER

Although not as well known as some of the Japanese brands, the Drake Company of Miamisburg, Ohio has been in the amateur radio business for close to thirty years. They produced one of the first all band SSB transceivers, the TR-4, in 1963. Their amateur band receivers were considered next in line to a Collins and if you were fortunate enough to own a 2B in the late fifties you were someone to look up to. The '2' series receivers gave way to the 4 series which concluded with the superb 'C' model. Drake have always concentrated on superior receiver performance particularly in the area of strong signal handling, cross modulation and sensitivity, but as receiver designers know, these desirable features don't go hand in hand. The TR-4 transceiver was developed and improved through to the 'CW' series of the mid-seventies. However by this time the writing was on the wall for tube type equipment. Transistors were here to stay and design techniques had changed. The Drake TR-7 emerged as the world's first general coverage transceiver, fully solid state, digital readout, band pass tuning, the lot. The Japanese of course soon found out they were behind the times, but then as I have pointed out before in these reviews, many of our new developments come from the USA first.

A year or so ago, it must have become apparent to the Drake Company that the TR-7 was a little out of reach of many amateurs and so the lower priced TR-5 appeared with amateur band coverage only and basic features required by the average operator.

### THE TR-5 TECHNICAL FEATURES

At a distance, the TR-5 and the TR-7 look like twin brothers, however the looks are only skin deep and the TR-5 is a very different piece of electronic equipment.

In this day of increasing complexity in amateur equipment, it is nice to see a move away from this. While it could not be said that the TR-5 is simple in any way, it is nevertheless a transceiver with basic features packaged in a relatively large box with a 'get-at-ability' that is just not seen these days. If you have been complaining that the present crop of amateur gear is too complicated, too hard to operate and has more features than you would ever need, then the TR-5 might be just what you have been looking for. You might even have a chance of fixing it if anything goes wrong.

Frequency coverage is amateur band only from 160 to 10 metres including the three new WARC bands at 10, 18 and 24MHz, in 500kHz segments. As supplied in standard form, the heterodyne crystals for 160 metres, the 18 and 24MHz bands and 28-28.5, 29-29.5MHz are optional extras and were not included in our review transceiver.



TR5 with matching microphone



As mentioned earlier, the TR-5 is housed in the same cabinet as the more elaborate TR-7. It measures 31.75cm deep, 34.6cm wide and 11.7cm high. The weight at 6.35kg is a little less than the TR-7's 7.75kg.

The front panel has a similar layout to the TR-7 but has fewer control functions. The digital frequency readout is a six figure red LED display which indicates down to 100Hz. The analog dial has been simplified somewhat from the TR-7's twin rotating translucent scales showing the 100kHz and 5kHz segments with one kHz divisions on the tuning knob down to the calibrated skirt on the tuning knob only. Clearly the digital display is intended as the primary and only frequency indicator.

Receiver selectivity is taken care of with a 2.3kHz filter for SSB with several other filters offered as optional extras. However only one extra filter can be installed in the TR-5 at any one time and a front panel NORMAL/AUX BW switch allows selection of the optionally installed filter of your choice. There is no other band width or IF shift control included. The optional filters have 6dB band widths of .3, .5, 1.0, 1.8, 4.0 and 6.0kHz, the latter two being for AM, however no AM mode is provided for in the TR-5 transceiver.

The transmitter section of the TR-5 features a broad band final which requires no tuning. When a 50 ohm load is presented to the output, the transmitter will deliver its rated output. It is designed for continuous operation on SSB or CW or for continuous SSTV or RTTY operation provided the optional cooling fan is installed. Automatic high SWR protection is included.

The transceiver is designed to operate from a 12 to 16 volt supply such as a car battery for mobile operation or a 15/20 amp regulated supply for home station use. The optional Drake PS75 model 1570 regulated supply is recommended. If however you decide to use your own power supply, you will need to purchase the optional mobile mounting kit as no power supply connectors or cables are supplied with the transceiver.

The keen CW operator has been provided with full break in keying and of course the excellent selection of filters mentioned above.

The noise blanker for the TR-5 is another optional extra. Drake claim that it is useful in eliminating or reducing impulse noise and also over the horizon radar (woodpecker) interference. We will comment on the effectiveness of this later as the blanker was included in our review transceiver.

Drake engineers must be congratulated on finding yet another way of wiring up the standard Japanese four pin microphone connector. However the agents kindly supplied the delightful DRAKE/ASTATIC 7077 desk microphone which saved a rewiring job on one of my spare microphones. A microphone is not included with the TR-5 as standard.

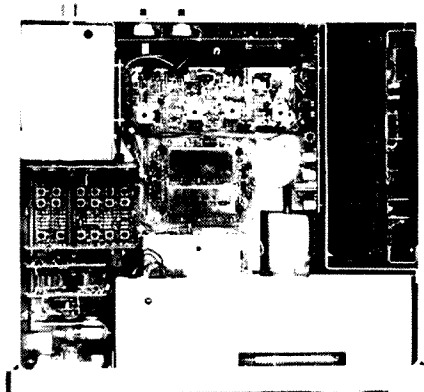
A multi pin connector on the rear panel provides connection for the optional external synthesized VFO. This is described as offering 10Hz resolution and automatic variable tuning rate.

Connecting a VHF transverter could prove difficult as no low level RF output is provided.

Where the TR-7 used an up convert system with a 48MHz first IF, the TR-5 has a conventional single conversion setup with an IF frequency of 5.6MHz. The PTO, or VFO if you prefer, operates from 10.6 to 11.1MHz and mixes with heterodyne crystal oscillator output to produce the required mixer injection to convert the incoming frequency to the 5.6MHz IF.

#### THE DRAKE TR-5 ON THE AIR

With its fully solid state broad band final, the TR-5 requires no tuning up for transmission or peaking for receive. As an external 13.8 volt regulated power supply is required, the Drake agents kindly supplied a heavy duty PS-7 for



TR5 with cover removed — note final amp. heatsink running from front to rear.

our use. They also supplied a model 7077 desk microphone which would have to be one of the most elegant microphones I have seen for some time.

First impressions are good, the meter is brightly illuminated and the digital display clear and spot on frequency but the tuning knob feels too small for comfortable handling and the finger recess is worse than useless. Tuning rate is 25kHz per turn. The built in speaker is in the bottom of the cabinet and has very poor quality unless the front of the transceiver is raised about 5cm higher than the optional extra feet allow. This extra height is also required to present the front panel at the right angle for easy operation. Perhaps Drake might consider fitting a tilt bale as is often seen on communications equipment these days. A few minutes use brought out another small problem. I had trouble tuning the transceiver in the desired direction. It was most infuriating. The TR-5 tunes higher in frequency with an anti-clockwise rotation of the tuning knob. All of the equipment that I currently use tunes in the opposite direction. No doubt familiarity would overcome the problem.

The next funny thing encountered was that the audio gain control would not reduce the audio level to zero. In fact, at times, it was annoyingly loud at minimum gain. However worse was to come. With headphones in use it was very much too loud and as a single circuit jack is fitted you will not be able to plug in your stereo headphones. Stereo type headphone jacks have been common on Japanese equipment for some years now.

Having dispensed with the problems, let's look at some of the better features.

With a good quality external speaker plugged in, the recovered quality was excellent. Three AGC decay times are selectable plus AGC off. The slow setting is really slow, just right for those strong SSB signals on 80 metres in the evening. If you are hunting weak DX signals on 20 metres then the medium AGC decay is just right, allowing the receiver to recover quickly after tuning through a strong local. For break in CW the fast position is fine with almost instantaneous recovery.

Control knobs are somewhat larger than is common these days and being well spread out are easy to use. Only one concentric pair is used, the audio and RF gains, and these are grouped on the right side of the front panel close to the tuning knob.

Reports on the transmitted audio were most complimentary, perhaps due to the microphone supplied. The instruction book suggested that the microphone gain be set to give an 'S' meter reading of 'S2' to 4. Strangely there is no actual ALC scale on the meter. Anyhow the ALC certainly worked well and the setting of the micro-

phone gain seemed to be very non-critical. Rear panel facilities are reasonably good. Speaker and CW key connections are via standard 1/4-inch phone jacks, while phono connectors are used for phone patch in and out, external receiver antenna connection, a separate receive antenna input and an external mute to operate a linear amplifier. Two preset controls are situated on the rear panel, the anti VOX level and the sidetone level controls.

#### ACCESSORIES

Several of the optional accessories have already been mentioned. One other however will be the subject of a separate review in the near future. This is the MN-75 Antenna Matching Network. Drake have for many years produced excellent antenna tuners to match their equipment and this one is no exception.

#### THE TR-5 ON TEST

The following test equipment was used to produce the figures that are quoted. Drake W4 watt meter, Kenwood SM-220 monitor scope, Heath Antenna dummy load, Daven audio power output meter, AWA F242A noise and distortion meter, AWA G230A low distortion audio oscillator.

#### FREQUENCY STABILITY

The VNG frequency standard on 7.5MHz was used. From a cold start at 20°C the transceiver drifted 200Hz over the first hour and then stayed to within 50Hz over the next two hours. This is a very acceptable result. It should be noted that as the TR-5 uses separate heterodyne crystals for each band, the drift results obtained above might not be exactly reproduced on each band. However spot checks on other bands suggested similar results would be obtained.

#### POWER OUTPUT

Firstly power output was measured with full drive under CW conditions. (As mentioned earlier, not all bands are operative.)

|                  |                  |
|------------------|------------------|
| 1.8MHz n.a.      | 18.0MHz n.a.     |
| 3.5MHz 90 watts  | 21.0MHz 60 watts |
| 7.0MHz 85 watts  | 24.5MHz n.a.     |
| 10.1MHz 82 watts | 28.0MHz 50 watts |
| 14.0MHz 80 watts |                  |

PEP output as checked on the monitor scope was about the same with a copy book pattern. Even when driving the ALC much higher than the recommended level the pattern remained clean with no sign of flat topping. On air tests also indicated that the transmitted signal was cleaner than usual. A test on ten metres with an 'S9' signal, only produced 'S1' distortion products (relative readings).

#### RECEIVER TESTS

Receiver residual audio noise level -67dBm. An excellent figure which perhaps shows the good design of the Drake PS-7 power supply. The receiver output was terminated in the recommended 4 ohms. Maximum audio output was 2 watts at a very low 1.6% distortion. Measured again at a normal listening level of .2 watts the distortion had dropped to 1%. The audio for this test was a 1kHz tone produced by feeding a crystal oscillator into the receiver antenna socket.

Receiver frequency response was checked by tuning across the same signal. The -6dB points were 400Hz and 2.9kHz with the -3dB points at 500Hz and 2.5kHz. Less than 1dB variation occurred over the rest of the curve. The narrow filter fitted to our review transceiver produced -6dB points at 900Hz and 1.8kHz.

The RIT control is usable on receive only and has a range of +3.6kHz and -2.6kHz.

Terminating the receiver input with a 50 ohm load and then tuning across the various bands produced a surprising number of spurious responses. Most would be lost in noise with the antenna connected but several were able to push the 'S' meter to 7 or 8. These were on 21.165, 21.064, 29.101 and 28.927MKz.

## SPECIFICATIONS

### GENERAL

Frequency Coverage: 1.8-2.0\*, 3.5-4.0, 7.0-7.5, 10.0-10.5, 14.0-14.5, 18.0-18.5\*, 21.0-21.5, 24.5-25.0\*, 28.0-28.5\*, 28.5-29.0, 29.0-29.7\* MHz. (\*With accessory range crystal.)

Modes of Operation: USB, LSB, CW.

Frequency Stability: Less than 1kHz drift first hour. Less than 150Hz per hour drift after first hour. Less than 100Hz change for a  $\pm 10\%$  line voltage change.

Readout Accuracy:  $\pm 10\text{ppm} \pm 100\text{Hz}$ .

Power Requirements: 13.6 VDC regulated, 2 A. 12-16 VDC unregulated, 0.8 V rms maximum ripple, 15 A.

Dimensions — Depth: 12.5in. (31.75cm), excluding knobs and connectors; Width: 13.6in. (34.6cm); Height: 4.6in. (11.7cm), excluding feet.

Weight: 14 lb. (6.35kg).

### RECEIVER

Sensitivity: Less than 0.5  $\mu\text{V}$  for 10dB S + N/N except less than 1.0  $\mu\text{V}$ , 1.8-2.0MHz.

Selectivity: 2.3kHz minimum at -6dB; 4.1kHz maximum at -60dB; (1.8:1 shape factor).

Ultimate Selectivity: Greater than 95dB.

AGC: Less than 5dB output variation for 100dB input signal change, referenced to AGC threshold.

Intermodulation (20kHz or greater spacing) — Intercept Point: Greater than 0dBm;

Two-Tone Dynamic Range: Greater than 85dB.

IF Frequency: 5.645MHz.

IF Rejection: 50dB, minimum.

Image Rejection: 60dB, minimum below 14MHz; 50dB, minimum above 14MHz.

Audio Output: 2 watts, minimum @ less than 10% THD (4 ohm load).

Spurious Response: Greater than 60dB down.

### TRANSMITTER

Power Input (Nominal): 150 watts, PEP or CW.

Load Impedance: 50 ohms.

Spurious and Harmonic Output: Greater than 40dB down.

Intermodulation Distortion: Greater than 30dB below PEP.

Carrier Suppression: Greater than 50dB.

Undesired Sideband Suppression: Greater than 60dB at 1kHz.

Duty Cycle — SSB, CW: 100%; Key Down (w/o FA7 Fan): 30%, 5 minutes maximum transmit; Key Down (w/FA7 Fan): 100%.

Microphone Input: High Impedance.

CW Keying: Instantaneous full break-in, adjustable delay.

Others on 21 and 28MHz could prove troublesome near very weak signals.

As I do not possess a signal generator of suitable quality, sensitivity checks must be subjective and comparative with my normal station equipment. Sensitivity appeared to be excellent and quite up with other current model equipment. Strong signal handling was excellent with no trace of overload even on transmitted signals in the same shack. No front end attenuator is provided.

AGC action was checked by measuring receiver audio output with the crystal calibrator coupled to the receiver to produce an 'S'4 signal and then connected to produce an 'S'9 + 30dB signal. There was no variation in audio output level for this change of input signal.

### INSTRUCTION BOOK

Having looked at many Japanese instruction

books over the years it is certainly interesting to look at an American book with their rather different approach. First impression is the excellent quality of the printing and general production. Spiral binding is used so the book can be opened at any point and will then stay open.

Subjects covered include: power supply connections, microphone connections, front panel controls, rear panel controls, CW side tone adjustment, accessory filter installation, CW and SSB operation.

An excellent chapter describes the theory of operation while another has basic service information. A full circuit and block diagram are included.

### CONCLUSION

As a basic transceiver, the TR-5 does a commendable job. It is however surprising that a firm with the experience of Drake would spoil the otherwise excellent performance with a few

blunders that in most cases could be put right at minimal cost. However I am sure that the TR-5 will appeal to many amateurs who prefer straightforward gear that will probably be operating satisfactorily years after some of its contemporaries have passed the point of economical repair.

The TR-5 used in this review was supplied by ELMEASCO Instruments Pty. Ltd. Offices are listed below:

SYDNEY

PO Box 30, Concord, NSW 2137. Phone (02) 736 2888.

MELBOURNE

PO Box 107, Mt Waverley, Vic. 3149 Phone (03) 233 4044.

Elmeasco also have offices in Brisbane, Adelaide and Perth — all enquiries regarding price and delivery should be directed to them at their nearest office.

AR

# The Adventures of Bill Blitheringtwit

Ted Holmes VK3DEH  
20 Edmond Street, Parkdale 3195



These adventures have been appearing each month in the Moorabbin and District Radio Club magazine "APC" under the pen name of "Segue". This is a musical expression meaning "press on" and could be said to be appropriate to most amateurs. Bill Blitheringtwit is entirely a figment of the imagination and is not intended to be representative of any particular person. If anyone reads himself into any of the stories, that is his own choice. . . .

### BILL AND THE PCB

Bill Blitheringtwit signed heavily and reached for his Scope soldering iron. He realised that life wasn't meant to be easy, but this was going too far. He had spent nearly four hours trying to put this small circuit board together and this must be about the fifth time he'd tried to insert this idiotic transistor. Each time he'd tried, something happened. He had got it in the wrong way round at least three times and had had to desolder it and remove it from the board. The thin little legs of the device looked a bit wobbly by this time.

He tried again. One of the legs broke off and he reached for the solder sucker. It was blocked. He tried to clear it and the teflon nozzle broke off. Not deterred, he placed the board on end and gripped the remains of the transistor firmly, whilst pull-

ing, and applied the hot iron to the other side of the board.

There was a sizzling sound and a strong smell of something burning. The transistor grew very hot and Bill let go. The Scope then destroyed the copper track and the board was rendered useless.

Bill cursed and immediately set about trying to repair the remnants of the copper track. He threw the transistor away and then spent thirty minutes trying to find it, as he didn't have a note of the type number and wanted to buy a replacement.

Eventually he ran a stream of hot solder on to the blackened circuit board and was satisfied that he had created a track of sorts. Only he had blocked up some holes, so he needed a drill. After rummaging around, he found one buried under his

workbench. It was pretty ancient and the power cord was frayed. Bill plugged it in and switched on. There was a loud bang and the fuse in the power box blew. All the lights in the garage — and, in fact, the entire house — went out.

Bill tried to walk towards his car to fetch a torch but tripped over the power cord of the antique drill he was carrying. The implement flew out of his hand and went straight through the windscreen of his wife's car.

By the time Bill had finished sorting himself out and making explanations to his irate wife, who demanded to know what he was playing at, Bill had forgotten what it was he had been trying to make and the ruins of the circuit board joined many others in his capacious junk box.

# EVALUATION AND ON AIR TEST OF THE DRAKE TR-5 TRANSCEIVER

Serial No. 001330

| CATEGORY                           | RATING          | COMMENTS                                                                                                               |
|------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------|
| <b>APPEARANCE</b>                  |                 |                                                                                                                        |
| Packaging                          | ***             | Transceiver plastic wrapped, foam inserts, strong carton.                                                              |
| Size                               | **              | Larger than most competitors.                                                                                          |
| Weight                             | **              | Fairly light for size.                                                                                                 |
| External finish                    | **              | Neat but very basic styling and finish.                                                                                |
| Construction quality               | ***             | Good quality circuit boards and neat internal wiring.                                                                  |
| <b>FRONT PANEL</b>                 |                 |                                                                                                                        |
| Location of controls               | ***             | Controls are well spaced and easy to operate.                                                                          |
| Size of knobs                      | ***             | Normally used controls are large.                                                                                      |
| Labelling                          | ***             | Very clearly labelled.                                                                                                 |
| Meter                              | ***             | Brightly illuminated.                                                                                                  |
| VFO knob action                    | **              | No backlash. But knob too small. Finger hole too small. Knob turns anti-clockwise for increase in frequency.           |
| Dial readout:                      |                 |                                                                                                                        |
| Digital                            | ***             | Bright red LED readout to 100Hz.                                                                                       |
| Analogue                           | *               | Might be better if it was removed altogether.                                                                          |
| Status indicators                  | *               | Only one provided (RIT).                                                                                               |
| <b>REAR PANEL</b>                  |                 |                                                                                                                        |
|                                    | **              | Easy accessibility but limited facilities.                                                                             |
| <b>RECEIVER OPERATION</b>          |                 |                                                                                                                        |
| VFO stability                      | ***             | See test section for results.                                                                                          |
| Digital dial                       | ***             | Within $\pm 50\text{Hz}$ at all times.                                                                                 |
| Analogue dial                      | *               | One kHz division on knob skirt only tracked over a few kHz.                                                            |
| Memories                           | NA              |                                                                                                                        |
| Sensitivity                        | ***             | In comparative tests very good.                                                                                        |
| RF attenuator                      | NA              |                                                                                                                        |
| RF gain                            | ***             | Smooth and progressive action.                                                                                         |
| Selectivity                        | **              | A good filter, no other aids.                                                                                          |
| Passband tuning                    | NA              |                                                                                                                        |
| IF shift                           | NA              |                                                                                                                        |
| Notch/peak filter                  | NA              |                                                                                                                        |
| Optional filters                   | ***             | Several available.                                                                                                     |
| Spurious responses                 | *               | Many evident. See test section.                                                                                        |
| 'S' meter                          | **              | Smooth action.                                                                                                         |
| AGC performance                    | ***             | Four positions (off, fast, medium & slow) also see test section.                                                       |
| Signal handling                    | ****            | No overloading found.                                                                                                  |
| RIT operation                      | **              | Receive only. Digital dial follows.                                                                                    |
| <b>NOISE BLANKER</b>               |                 |                                                                                                                        |
| Line noise                         | **              | Some reduction in some types of noise.                                                                                 |
| Auto ignition                      | ***             | Quite effective.                                                                                                       |
| Woodpecker                         | *               | No effect at all.                                                                                                      |
| Effect on signal                   | ****            | No noticeable effect on signal.                                                                                        |
| <b>QUALITY OF RECEIVED SIGNAL</b>  |                 |                                                                                                                        |
| Internal speaker                   | **              | Only if front of receiver is lifted higher than optional feet allow.                                                   |
| External speaker                   | NA              | Available as option.                                                                                                   |
| Headphone output                   | *               | Stereo phones only work on one side. Speaker has to be manually switched off. Audio gain cannot be reduced far enough. |
| Cooling fan noise                  | NA              | Fan available as option, not provided on review transceiver.                                                           |
| <b>TRANSMIT OPERATION</b>          |                 |                                                                                                                        |
| CW and PEP output                  | **              | See test section.                                                                                                      |
| Audio response                     | ****            | Excellent quality reports.                                                                                             |
| Audio sensitivity                  | ***             | Plenty of mic gain.                                                                                                    |
| ALC action                         | ***             | No flat topping even with high mic gain.                                                                               |
| Speech processor                   | NA              | Available as optional extra.                                                                                           |
| Metering                           | *               | ALC and relative output, but no meter scale provided for either.                                                       |
| Relay noise                        | ***             | Very quiet.                                                                                                            |
| VOX operation                      | ***             | Smooth operation combined with quiet relays.                                                                           |
| QSK operation                      | ***             | Full break in CW operation.                                                                                            |
| Cooling                            | ***             | No overheating noted.                                                                                                  |
| <b>MANUAL (OWNER'S HANDBOOK)</b>   |                 |                                                                                                                        |
|                                    | ***             | See comments in text.                                                                                                  |
| <b>ACCESSIBILITY FOR SERVICING</b> |                 |                                                                                                                        |
|                                    | ****            | Plenty of space to get to everything.                                                                                  |
| <b>RATING CODE</b>                 |                 |                                                                                                                        |
| Poor *                             | Satisfactory ** | Very Good ***                                                                                                          |
|                                    |                 | Excellent ****                                                                                                         |

# The G5RV\*

by "the Man Himself"

Loius Varney G5RV

\* Reprinted from "Ohm" Magazine with corrections submitted by the author

The G5RV aerial is a multi-band dipole specifically designed with dimensions which allow it to be installed in most normal-sized back gardens, permitting effective operation from 1.8 to 30 MHz.

As the G5RV aerial does not make use of traps or ferrite beads, the "dipole" portion becomes progressively longer in electrical length with increasing frequency. This effect confers certain advantages over a normal or trap dipole because, with increasing electrical length, the major lobes of the vertical radiation patterns tend to be lowered as the frequency is increased.

Thus, from 7 MHz up, most of the energy radiated in the vertical plane is at an angle suitable for DX working. Furthermore, the horizontal polar diagram changes with increase of frequency from a more or less typical half wave horizontal dipole diagram to that of a typical "long wire" aerial at 14, 21 and 28 MHz.

Although the impedance matching of a suitable (non-critical) length of 75 ohm twin feeder (preferred) or 75 to 80 ohm co-axial feeder from the base of the matching stub to the transmitter or preferably, to a suitable aerial tuning unit, is approximate only for most brands, a very good match indeed is obtained on 14 MHz. It so happens also that the polar diagram on this band is that of a three-half-wave-length long-wire which is particularly suitable for all-round DX working and gives an estimated gain of about 3 dB over a simple dipole in the directions of the four major lobes.

The above reasoning does not apply to its use on 1.8 MHz where it functions as a Marconi or T-aerial with most of the effective radiation taking place from the vertical or near-vertical portions of the system, the "flat top" acting as a top-capacity loading element. However, with the transmitter end of the feeder strapped and with the system tuned to resonance with a suitable series inductance and capacitor circuit connected to a good earth, or a counterpoise, very effective radiation on this band is obtainable even when the flat top is as low as 25 feet above ground.

## CONSTRUCTION

The dimensions of the aerial and matching stub are as shown in Fig. 1. It should be noted that it is quite in order to "bend" the lower half of the matching stub if desired owing to relatively low height above ground of the flat top. The writer has used this aerial for many years at a height of only 25 feet with excellent results on all bands from 1.8 to 28 MHz.

A word about the matching stub is in order. If this is of open wire feeder construction (preferred because of lower

losses, especially at 21 and 28 MHz) its length should be 34 feet (17 feet for the half-size version), but if 300 ohm ribbon is used allowance must be made for the velocity factor of this type of twin-lead. Since this is approximately 0.88, the actual physical length of the 300 ohm ribbon stub should be 29 feet 6 inches. It should be borne in mind that this matching stub is intended to resonate as a half-wave impedance transformer at 14 MHz, which was chosen as the design centre frequency for the G5RV aerial, thus giving a very good impedance match for a 75 to 100 ohm twin-lead or co-axial cable connected to the base of the stub.

If desired, due to lack of sufficient space to accommodate the 102 feet long flat top, the ends of the aerial may be dropped vertically (or semi-vertically) for up to 10 feet at each end, thus reducing the overall length to 82 feet.

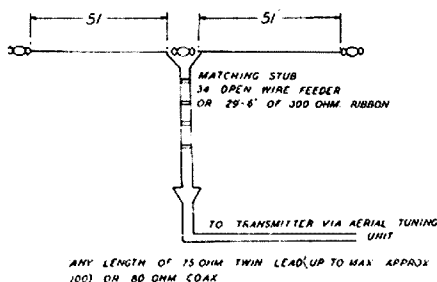


FIG. 1: Dimensions of the full-size G5RV Aerial. For the half-size version, the dimensions of the flat-top and matching stub are scaled proportionately.

An alternative arrangement to that of the matching stub and twin-lead or co-axial cable feeder is to use an 83 feet length of open-wire feeder measured from the centre of the flat top to the terminals of the ATU. This arrangement permits parallel tuning of the ATU on all bands from 3.5 to 28 MHz with very low feeder losses.

The spacing of either the open-wire stub or the 83 ft. long open-wire feeder is not critical and may conveniently be anything from 2 to 6 inches, using either 14 or 16 SWG copper wire. Although the use of 14 SWG is recommended for the flat top, 16 SWG is adequate for the matching stub or tuned feeder and is easier to "hang" neatly.

It is recommended that attention be paid to making a sound mechanical job of the construction of the aerial. In particular, if 300 ohm ribbon is used for the matching stub, the ribbon should be looped over the centre insulator of the flat top and secured with nylon thread or plastic tape, leaving "flying" ends about 9 inches long

forming two loops for connection to each half of the aerial. This type of construction avoids breaking of the ribbon due to swinging and vibration in high winds. Alternatively, a suitable triangular shaped ceramic or plastic dipole centre insulator which is designed to secure the 300 ohm ribbon may be used.

Although it may be very convenient to use a length of, say, up to 100 ft. of co-ax. direct from the transmitter to the base of the matching stub, it must be remembered that such an arrangement will tend to produce currents which will flow in the outer conductor of the co-ax., causing unwanted radiation from the co-axial feeder. This may be avoided by the use of either 75 ohm twin-lead and a suitable ATU or the open-wire feeder and ATU as already mentioned.

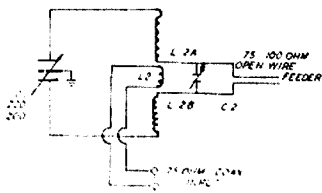
Nevertheless, in practice very satisfactory operation can be achieved by the simple use of co-ax. direct from the transmitter to the base of the matching stub even though the VSWR may reach 10 to 1 or more on 3.5 MHz. This figure may be reduced to about 5 to 1 on 3.5 MHz by "pruning" the co-ax. On the higher frequency bands the VSWR on the co-ax. lies between 5 to 1 and 1.5 to 1, the latter figure applying to 14 MHz, where, as explained above, the matching is very good.

Contrary to general belief, a VSWR of up to 5 to 1 on a length of co-ax. up to about 100 feet, at the frequencies considered here, results in negligible loss of power. However, this is not to say that it is not better to keep the VSWR figure as low as possible, especially where a low-pass TVI filter is to be used. It is mainly for this reason that the writer prefers to use a convenient length of 80 ohm co-ax. from the transmitter to an ATU and then 75 ohm twin-lead to the base of the stub. In this way, using a low-pass filter and a VSWR meter in the length of co-ax., a perfect, or near perfect, match can be obtained for the transmitter and filter on all bands.

## THE AERIAL TUNING UNIT

As stated above, the writer prefers to use an ATU for the reasons given. There are various satisfactory forms of ATU but one which the writer has used for many years and which is extremely flexible electrically and yet does not require the coils to be tapped for optimum feeder loading, is shown in Fig. 2.

In any case, whatever form of ATU is used a suitable VSWR meter should be inserted in the co-ax. feeder from the transmitter output to the ATU. Optimum loading and maximum harmonic suppression will be achieved by watching the reverse current in the VSWR meter and adjusting both ATU tuning and loading capacitors for minimum reverse current.



**FIG. 2:** A suggested aerial tuning unit for use with the G5RV aerial. C1 is a 200/200 pF split-stator transmitter capacitor, the plate spacing being determined by the power it will have to handle. The coupling capacitor C2 consists of three 500 pF broadcast receiver variable capacitors connected in parallel. If necessary, this combination may be supplemented by a bank of switched high-voltage mica capacitors.

If the link-coupling coil is common for all bands (using plug-in ATU coils) it is preferable that it be of the "swinging" type, i.e. adjustable coupling. It will be found that, starting with the link coil fully coupled, normally, after the ATU tuning and loading capacitors have been adjusted to give the lowest possible reverse current, adjustment of the link-coil coupling will, in nearly all cases, permit a VSWR of virtually 1:1 to be obtained on the co-ax. cable to the transmitter.

However, if ATU coils having individual link-coils are used, the number of turns on each link should be adjusted to suit the actual conditions applying to a particular installation for each of the bands.

For a common, swinging, link-coil three turns is about as good a compromise as may easily be obtained.

Table 1 gives coil winding details for each band.

**TABLE 1**

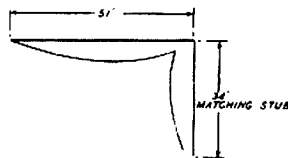
| Band (MHz) | Turns   | Turn Spacing (in.) | SWG | Coil I.D. (in.)     | Fixed Link Coil* (turns) |
|------------|---------|--------------------|-----|---------------------|--------------------------|
| 3.5        | 17 + 17 | close wound        | 14  | 2.5 (former)        | 4 or 5                   |
| 7          | 9 + 9   | close wound        | 14  | 2.5 (former)        | 3                        |
| 14         | 5 + 5   | 1/10               | 10  | 2.25 (self support) | 2                        |
| 21, 28     | 4 + 4   | 1/2                | 10  | 1.75 (self support) | 1                        |

\* Alternatively, a common three-turn swinging link coil 1 7/8 inch i.d., 14 SWG close wound; centre portion of coil formers cut away suitably to permit entry of swinging link coil.

### THEORY OF OPERATION

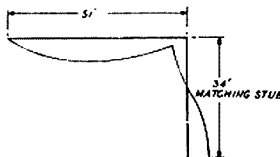
The general theory of operation has been explained in the Introduction. The theory of operation on each band from 3.5 to 28 MHz will now be given in turn.

**3.5 MHz**—On this band, each half of the flat-top plus about 16 ft. of each leg of the stub forms a fore-shortened or slightly folded-up dipole. The remainder of the stub acts as an unwanted but unavoidable reactance between the centre of the dipole and the feeder to the transmitter or ATU. The polar diagram is similar to that of a horizontal dipole. See Fig. 3.

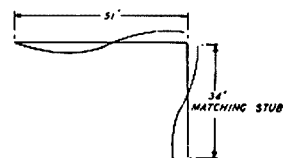


**FIG. 3:** The current distribution of the G5RV aerial at 3.5 MHz. Only one half is shown. The aerial functions as a half-wave dipole partially folded up at the centre. Some reactive mismatch occurs at the base of the matching stub, but performance is very good despite a rather high VSWR on 75 ohm co-ax. or 75 ohm twin feeder to the transmitter or ATU.

**7 MHz**—A similar arrangement exists at this frequency except that the flat top plus 16 ft. of the matching stub now functions as a partially folded-up "two half waves in phase" aerial, giving a polar diagram somewhat sharper than a conventional  $1/2\lambda$  dipole and low angle vertical plane radiation. Again, the matching at the base of the stub is degraded somewhat by the unwanted reactance of the stub, but despite this the system loads well. See Fig. 4.

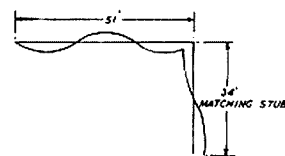


**FIG. 4:** Current distribution at 7 MHz. The aerial now functions as two half-waves in phase (partially folded at centre). Some reactive mismatch still occurs at the base of the stub, but operation is very effective.



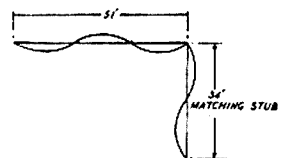
**FIG. 5:** Current distribution at 14 MHz. In this case, the aerial functions as a  $3/2$  wavelength long wire. A centre impedance of about 90 ohms is transferred to the base of the matching stub (this acts as a 1:1 impedance transformer) and results in a good match to either 75 ohm co-ax. or 75 ohm twin feeder.

**21 MHz**—Here the aerial works as a five half-wave long-wire giving a very effective polar diagram and good low-angle radiation. Although a bad mismatch occurs at the base of the stub, the aerial loads well and performs very satisfactorily. See Fig. 6.



**FIG. 6:** Current distribution at 21 MHz. The aerial functions as a  $5/2$  wavelength long wire. Mismatch at the base of the stub when coupled to 75 ohm co-ax. or 75 ohm twin feeder results in a high VSWR, but operation remains effective.

**28 MHz**—On this band the aerial functions as two  $3/2\lambda$  long wires fed in phase. The polar diagram is similar to that of a typical  $3/2\lambda$  long-wire with slightly sharpened lobes and the radiation is at a low angle, good for DX working. Again, the mismatch at the base of the stub is considerable but, in practice, the aerial loads well and works very effectively. See Fig. 7.



**FIG. 7:** Current distribution at 28 MHz. The aerial is effectively two  $3/2$  wavelength long wires fed in phase. Mismatch to 75 ohm co-ax. or 75 ohm twin feeder at the base of the stub causes a high VSWR, but operation is effective especially if an ATU is used.

**14 MHz**—At this frequency the conditions are ideal. The flat-top forms a three half-wave long-wire centre-fed aerial having six lobes of radiation, four major and two minor. As the centre impedance of a wire of this length at about 30 to 35 ft. above ground is approximately 90 to 100 ohms and the 34 ft. stub acts as a 1:1 impedance transformer, the match to an 80 or even 75 ohm feeder is quite acceptable. Most of the radiation in the vertical plane is at an angle of about 14 which is very effective for DX working. See Fig. 5.

In connection with the above descriptions, reference should be made to the Amateur Radio Handbook or the ARRL or "CQ" Amateur Handbooks where the polar diagrams of typical long-wire aerials may be found.

### THE HALF-SIZE VERSION

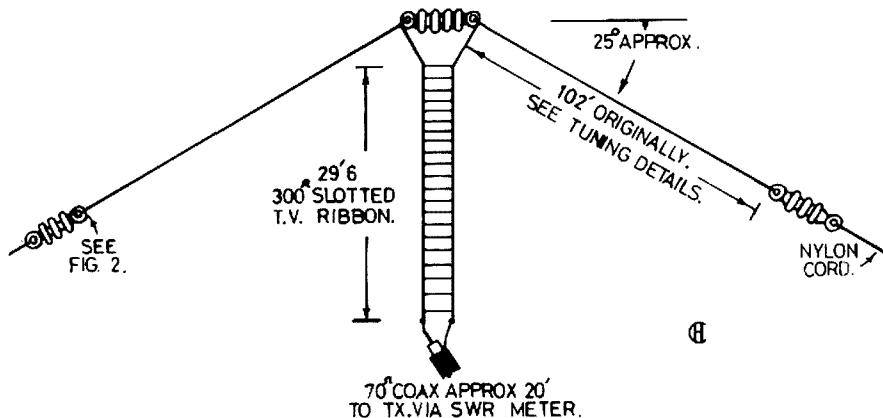
Many requests have been received for information on the half-size version of the G5RV aerial for use in very restricted spaces. It is quite possible to scale all wire length dimensions (including that of the

stub) down to exactly half-size and the resulting aerial will work from 7 to 28 MHz. Optimum performance and impedance matching will occur on 28 MHz, where the operating conditions will be as for the full size version at 14 MHz.

### OTHER CONFIGURATIONS

The G5RV works excellently in the form of an "inverted V" antenna. I used one with great success for six months while in Belgium as ON8RV in 1970.

Two G5RV antennas stacked, one 24 ft. above the other, preferably with the lower one a quarter wave (17.5 ft.) above ground, with the 34 ft. matching stub TRANPOSED and the "slack" suitably taken up by folding or suitably pulling out to one side or other of the array by means of a nylon cord, will act as a multi-band version of the "Lazy-H". This arrangement has given excellent results and has been used for many years by Pete Broome G5DQ.



(c) Often amateurs are heard to say that the G5RV is a compromise antenna and so must perform poorly in some respects. (No reasons are ever given, just the statement!) This is not so in practice. After all, the G5RV is no more a compromise than any other multi-band antenna (even the mighty TH6I).

### TUNING

This is probably the greatest bugbear in the use of the G5RV and the reason why many operators give it away as a bad job. They are faced initially with an SWR that is considered too high or a transmitter that will not load satisfactorily, and therefore assume that the only answer is in the use of an antenna tuning unit or the use of another type of antenna. I would not recommend the use of a tuning unit or the scrapping of the G5RV in these circumstances, and suggest the method used to tune my particular antenna when it was first erected.

The antenna is tuned simply by shortening (but not by cutting) until an acceptable combination of SWR and satisfactory transmitter loading is achieved. This is done by pulling wire through each terminal insulator in turn and folding it back on the main wire (see Fig. 2).

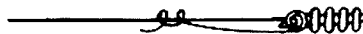


FIG. 2: Tuning adjustment (tape securely when finalised).

Do this in steps of about six inches at a time and test after each adjustment. Concentrate first on the 20 metre band (say at 14,180-14,300 kHz) and when it is satisfactory, test on the other HF bands. These will usually be found satisfactory but some further adjustments may be necessary for the best compromise on all bands. If you have a favourite band other than 20 metres adjust for the best SWR and loading on that band.

I obtained the following results:—

| BAND      | SWR       |
|-----------|-----------|
| 60 metres | 1.3       |
| 40 metres | 1.6       |
| 20 metres | 1.0 - 1.1 |
| 15 metres | 1.6       |
| 10 metres | 4.0       |

With this method of tuning the full original length of wire is left in case the antenna configuration is changed, or in case you change QTH. Both could require checking and probable readjustment.

### USE ON 160 METRES AS A LOADED VERTICAL

I was able to load the G5RV satisfactorily on 160 metres by simply joining the two conductors of the coax feeder and then running a single wire to the pi-output of a small 10 watt AM transmitter (see Fig. 3). A buried earth wire was run to the nearest water pipe.

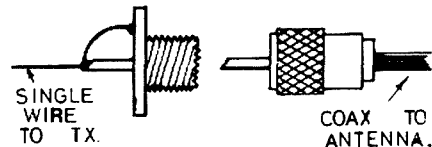


FIG. 3: Female and male coax connectors (any convenient type).

With this combination lots of local and interstate contacts were made. Strangely, in this case the addition of series inductance or capacitance had very little effect on performance. Nevertheless, some operators find it worthwhile to feed the antenna on this band via a series tuned circuit or to use a tapped inductor (see Fig. 4).

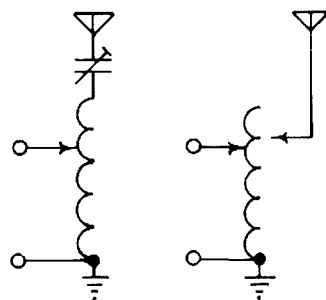


FIG. 4

Needless to say the better the earth system used the better any such vertical antenna will perform.

An elementary yet often overlooked point in resonating such an antenna was brought to my notice by Lin VK3ARL, who suggested first peaking whatever tuning arrangement is used by listening to a strong (but not overpowering) signal and

## Some Thoughts on the G5RV\*

Maurie Evered VK3AVO  
13 Sage Street, Oakleigh 3166  
\*Reprinted from AR, April 1974

The theory of the G5RV antenna has been discussed in detail by "The Man Himself". This article, based on the author's experience, deals with some practical aspects of its use.

A G5RV has been used at this QTH for over ten years for both local and DX work on all bands from 160 metres to 2 metres. What follows is intended to help anyone who wishes to use this antenna. Much of the information given is not found in the usual texts but has been learned the hard way by many amateurs. Most of the methods used are not original but the result of helpful advice from many other VKs, particularly Vin VK3AOV who suggested I try a G5RV after a coax fed multi-dipole had proved disappointing on the higher HF bands. I will present the information under four headings.

### CORRECTING THE POPULAR MISCONCEPTIONS

(a) The G5RV does not have to be used with its 102 ft. length perfectly horizontal. It can be used in a sloping configuration, as it is at this QTH (see Fig. 1) with no loss of efficiency (although some cancellation may occur if the angle of depression from the horizontal becomes too large).

(b) The length of coax cable used does seem to be important. Most operators who successfully use the G5RV have been able to confine the length of coax to less than 30 ft. Conversely, greater lengths (more than 50 ft.) may lead to poorer performance despite the fact that if good quality coax is used losses should not be severe, at least on the lower frequencies. This is an empirical finding arrived at after questioning many satisfied and dissatisfied users over a four year period.

watching the receive S meter. Though the tuning position may not always coincide with that for best transmission it will be close enough to assist greatly in preliminary adjustments.

Opinions vary as to the best way of getting optimum results on transmission. Antenna current measurements are fine provided that any tuning changes do not alter the impedance at the point of meter insertion. I used a simple field strength meter but any changes are best supported by a local amateur with a reliable S meter. Don VK3ADP and Ron VK3OM obliged on many occasions.

#### USE AT VHF

Although it is generally not considered a VHF antenna interesting effects can be obtained because the G5RV is several wavelengths long at these frequencies (particularly at two metres) and is bi-directional

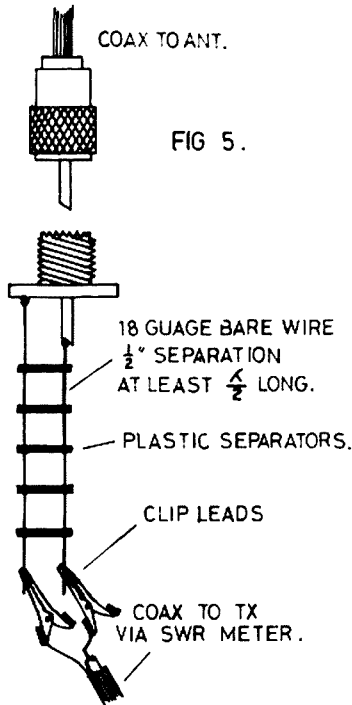


FIG. 5

off its ends. The antenna was fed as in Fig. 5. Clip leads are slid up and down the parallel wires until a low impedance point is found. This gives a low SWR on the coax line to the transmitter. A tuning unit could of course be used but the method shown is very simple, very cheap, and most important, very effective.

Six metre testing was rather restricted but extensive tests were performed on two metres on channel B using an FT 2F-B. Very satisfactory results were obtained, stations being worked across the city when using the one watt output position.

Well, there it is. I would never claim that on 20, 15 or 10 metres a G5RV would equal or even approach the performance of a well adjusted quad or yagi, but I have tried quite a few wire antennas and, of these, I think the G5RV is out on its own for overall performance, size and ease of erection and adjustment. ■

## Further Ideas on the Ubiquitous G5RV\*

Phil Williams VK5NN  
40 Hyland Terrace, Rosslyn Park, SA 5072  
\*Reprinted from AR, June 1974

The article by the originator of this famous antenna was extremely interesting, but there are a few further points which have resulted from re-locating my station from a quiet semi-rural QTH to an urban situation which is much more noisy. These modifications concern the low impedance feeder from the Z match to the bottom of the 300 ohm feed-line, and a method of feeding and matching the antenna as a top-loaded vertical for 160 metre operation.

The usual form of the G5RV is a 102 ft. centre-fed flat-top antenna, which works best when at least 30 ft. high. Even the G5R-inverted-V works well on a single central pole. The central feeder is usually a 20 metre half-wave resonant piece of 300 ohm or open wire line which it pays to grid-dip before erection by shorting both ends, stretching out full length and grid-dipping to, say, 14,150 kHz. From the bottom of this to the transmitter or Z match (which should always be used with a multi-band aerial) it has been usual to employ coaxial cable of 50, 70 or 100 ohms impedance.

This is fine for transmitting but the outside of the coax cable picks up more noise than I wanted to hear, and much of this is transferred capacitively to the Z match tuned circuits from the link. The 80 and 40 metre bands were worst affected in this regard.

Remedies for this were firstly to replace the coax cable with balanced feeder such as lamp flex, Telcon 72 ohm twin-lead, or a low Z balanced quad line, and secondly to earth the centre tap on the low frequency link on the Z match. A third remedy, after the implementation of the former, was the fitting of a cylindrical Faraday shield between the coils. However, this provided only marginal, though measurable, improvement.

In his original article Louis Varney mentions the use of 70 ohm twin lead or the use of 83 ft. of 300 ohm line directly to the ATU. However, I had fears about

operating the former at 350 watts and high SWR, and the open wire line is sometimes unsightly in the house.

The twin lead used was twisted polythene coated copper wire from discarded multi-core telephone cable. The wire was designated 20 lbs. per mile or about 20 SWG. A balanced quad was also tried connecting diagonally opposite wires together, but little improvement was noticed. About 30 ft. of the twisted line showed no sign of distress within 350 watts PEP SSB. Black PVC tubing was pulled over the twisted pair as a weather and ultra-violet light shield where the feeder is in the open.

Noise varies with time and weather but, typically, the above measures reduced S6 or 7 levels to less than S3. The Faraday shield resulted in a further reduction of about 6 dB or 1S point, but did not make any great difference to readability of signals on 80 metres.

Fig. 1 shows the general arrangement of the G5RV and Z-match. The additional switches shown are well worthwhile. S1 enables the antenna to be switched to L2 for 10, 15 and 20 metres, or to L4 for 20, 40 and 80 metres, and saves having to jump up to unplug or operate on terminals. The other switch, S2, enables the antenna to be fed against ground for 160 metre operation. A good earthing scheme is needed, such as stakes, radials, etc., but this will not be elaborated on here.

The centre point of the link L4 is a convenient point for feeding, and both 160 metres on a receiver and another band

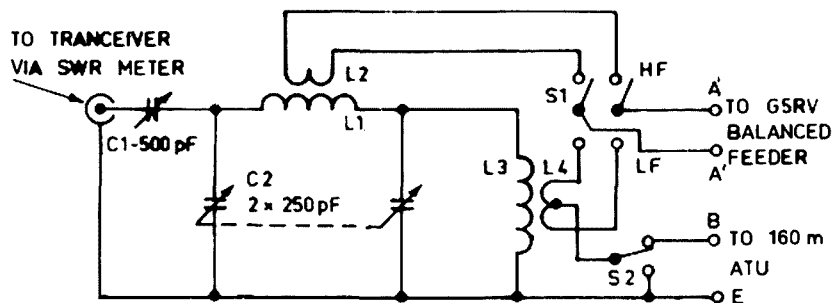


FIG. 1: Modified "Z" match — original from Radio Communication Handbook, RSGB, p.13-37, Fig. 13-60.

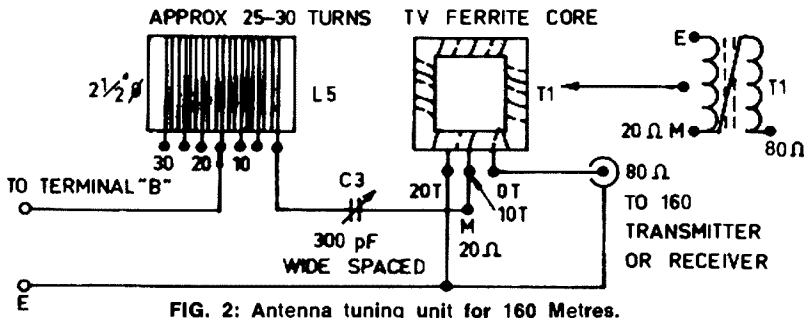


FIG. 2: Antenna tuning unit for 160 Metres.

on the transceiver may be monitored at the same time, but it is inadvisable to energise two transmitters into one aerial.

The suggested method of feeding and matching at 160 metres is shown in Fig. 2. Looking into the resonant antenna via L5 and C3 at point M with a noise bridge, for a typical G5RV at about 30 feet height, a radiation resistance of about 20 ohms is measured. The transformer T1 consists of a TV timebase ferrite core (2 sections forming a square loop) with 20 plus 10 turns (bifilar wound) to give a 4 times impedance step-up to 80 ohms, into which the transmitter pi-network loads happily.

Select a tap on L5 which permits C3 to tune 1815 kHz when near maximum

capacitance. C3 may be calibrated for 1875 kHz for receiving ZL CW stations and up to 2000 kHz for other DX as required. This tuning is useful for reducing BC station overloading of the receiver front end and the resulting beats and harmonics. L5 is a coil of about 25 turns 2½ inches diameter tapped every 5 turns or so. C3 is a transmitting type capacitor of about 300 pF, with widespread plates mounted on insulators well clear of the chassis or box and with an insulated drive coupling.

I trust these notes may be of value to those 6-bands-on-one-antenna men, whose band-changing must all be done in the shack, and whose homes must not look like a Communications Unit. ■

## Clancy of the Airwaves

From "Smoke Signals" January-February 1982

There are fools of every kind and most of them are blind to the folly of the game that they pursue. And they each and all declare that their own particular fare is the finest in the world "if you only knew".

The football fiend loves mud has the fever in his blood and the punter to the bookies gives his cash.

While the cricketer runs up and down beneath the fiery midday sun and the pugilists each other love to bash.

There's the chap in dancing shoes and the musician with the blues while the golfer hits a ball with many whams.

But the maddest of the crowd are the ones who talk aloud — when there's no one there — but them, they call them 'ams!

They hover over a steel box waffle on with VOX. Rave about frequencies, voltages and bands and they never go to bed for they're funny in the head with the knowledge this sort of thing demands.

If you ask them — which is greater VFO or crystal oscillator they will tell you "you're widely off the beam".

That your finals and transformer are away to some place warmer and DX running barefoot is just a dream.

They have wires everywhere strung from skyhooks in the air and their hobby is the best of all by far. The shack is their home as they're hardly known to roam and their wives — unlike Clancy — can watch the TVI and know where he are! ■

## Installing the G5RV\* in only 80 feet

A CONCLUDING WORD BY "THE MAN HIMSELF"

Louis Varney G5RV

The G5RV antenna may be installed in a space of only 80 feet (24.4m) and will work very well indeed. The recommended arrangement, as shown in Fig. 1, is better than folding the ends back.

Note that many fellows have been using the wrong length for the matching stub when using ordinary 300 ohm TV line. It should be only 29 feet long. However, when using the OPEN WIRE stub (which I prefer for its lower losses, especially on 21 and

28 MHz) the correct length is 34 feet.

The most efficient arrangement is to use open wire line from the centre of the antenna right back to the ATU. If you can arrange to use a total length of 83 feet you can use a parallel-tuned ATU on all bands. It doesn't matter if the feeder has to be bent due to lack of antenna height. This is illustrated in Fig. 2.

(The length in feet can be converted to metres by multiplying by 0.3048.—Tech. Ed.) ■

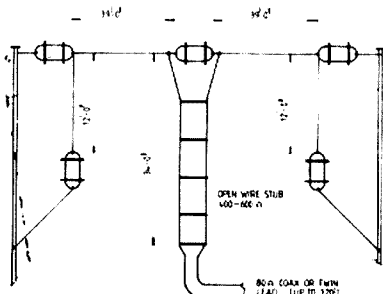


FIG. 1

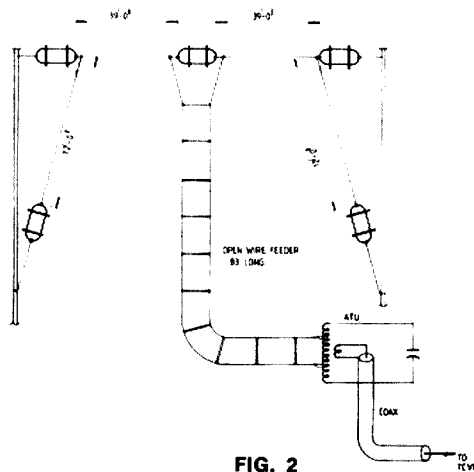


FIG. 2



DX-ing Dolpham



# "TIRED OF BEING AN APPLIANCE OPERATOR?"

Lou Iaquinto VK3DFI  
Box 90, Beaufort, Vic., 3373

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Having obtained a novice licence in May 1979 and after finally getting on the air with the help of Eric, VK3KF, I started to hear the expression "appliance operator" bandied about the air waves. I had no technical background and being something of a desk jockey at work, I decided to try my hand at building some gear. This seems quite funny to me now since at that time I didn't even know how to solder on a coax connector.

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I started by checking out the local "hobby" electronics supply shop, armed with a parts list from a project in the ARRL Handbook that I thought would be simple enough for a hopeless beginner like myself. Trying to sift through the unfamiliar maze of electronic components and attempting an explanation to a shop assistant that knew as much about electronics as I did turned out to be a nightmare. I gave up on what seemed like a hopeless idea and cringed everytime I heard that dreaded name of "appliance operator".

Finally, I read an article in AR about QRP CW and the Heathkit HW-8 was pictured. I talked to other amateurs about Heath gear and read as many articles on their equipment as I could find in the amateur publications. I was really enjoying CW and was almost QRP since all my operating was accomplished with a TS-120V and its low power. I decided that for me, an all solid state CW only transceiver for 80 to 15 metres in kit form would be my salvation.

## KIT

The first two hours of construction time were spent on making sure all the parts were there. They were! This was very helpful for the beginner because one learns how to identify common components. Sure, it's easy to read about capacitors when you're studying for your novice call but when a parts list calls for silver mica, green caps and disc ceramic, it gets scary. The Heathkit solved this problem for me. The instruction manual includes sketches of each and



It is extremely important to be well organised.

every component making them easier to recognise. The kit includes everything you need right down to the last nut and bolt.

The step by step instruction manual is superb. Each part is listed separately along one side of the page and there is a sketch of the circuit board showing the exact position of every component. The circuit board itself is a beauty. The shape and value of each component is printed on the component side of the board and all the wiring connections are lettered. There are also excellent easy to read diagrams for connecting the various controls and wiring. You simply follow the instruction manual step by step and check off each component as you go. Nothing could be simpler than that. If you know how to solder and follow directions, you cannot fail. The learning takes place in reading the circuit description and following the circuit diagram.



Component place is uncomplicated.

Total construction time was about thirty hours. The experienced builder could probably cut this time in half. Also, I am color blind. I had to double check every resistor on an ohm-meter before mounting. After building this kit I don't have any more problems with the color code!

## ALIGNMENT

Aligning the VFO was a tricky process but you don't need any fancy test equipment to accomplish this. A VTVM with an RF probe, a calibrated receiver and a signal generator are all that's required. My TS-120V filled the bill for the receiver and signal generator.

Every amateur should own or have access to a VTVM or multi-meter and the RF probe is a useful tool that is possible to build very easily. The Heathkit instruction manual includes a circuit for an RF probe.



The completed Circuit Board.

The only problems encountered were during the alignment procedures which I followed incorrectly. After reading the instructions a couple of times I discovered my mistake and the rig worked fine. That first QSO with a rig you've built yourself is a great feeling. So far, DX worked with this rig includes FK8, W's, G's, OK and of course JA and ZL. The HW-8 runs a DC input of 2.5 to 3.5 watts.

## EXPERIENCE

One thing about operating a rig that you've built yourself is that you know every component that went into it. If it breaks down you should be able to find and repair the problem.

I suppose it's important to mention that I am in no way connected with the Heath Company or their Australian Distributor. I do believe the kit is overpriced but the knowledge and experience gained from completing such a project is priceless.

Once you start operating some "home-buil" gear you'll be surprised to learn how many people who complain about "appliance operators" are just that themselves!

Now let's see, some modifications would be nice, how about an RIT control.....

AR

# 29MHz AMATEUR BEACON HITCHES A RIDE whilst EOSCOR 3 LOOKS FOR SOLAR NEUTRONS

Authors:  
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29 Woodcrest Road, Vermont, 3133  
Brian Denehy,  
Physics Department, RAAF Academy

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Early in December the Physics Department, RAAF Academy, in collaboration with Case Western Reserve University, Cleveland, Ohio, will launch a 15 million cubic foot helium filled balloon from Alice Springs Airport in Central Australia. On board the payload attached to the balloon will be a high energy neutron detector — and a beacon on the 29 MHz Amateur band. The beacon, built by Mr Les Jenkins VK3ZBJ and Ash Nallawalla VK3CIT may be used to locate the payload if it happens to be released from the balloon in a reasonably accessible location.

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It is planned to allow the balloon to circle the earth as many times as possible. Each rotation will take about 250 hours.

The main aim of the experiment is to observe neutrons created by energetic processes in solar flares. To date, no scientists have been successful in having a large neutron sensitive detector at altitude during an energetic flare to detect the neutrons thought to be produced in such a flare. The detection of solar neutrons would establish a new observational channel for the study of the large solar flares which affect the solar-terrestrial environment in many ways.

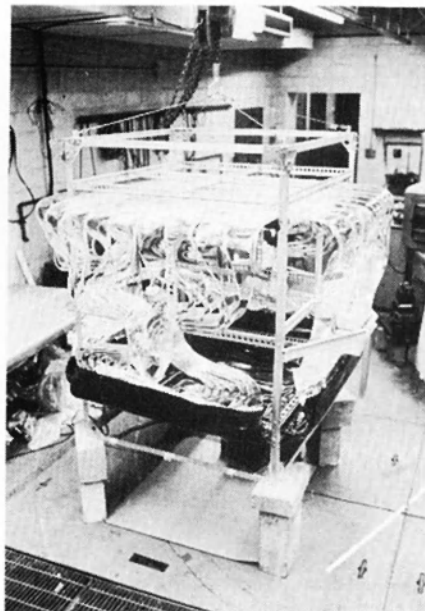
Events which could cause significant neutron fluxes at the earth are rare, even at solar maximum, but it is hoped to observe at least one such flare over the duration of the experiment.

In this experiment, the balloon will rise above the tropopause and will oscillate in height due to diurnal heating effects, with an average height of about 35 km.

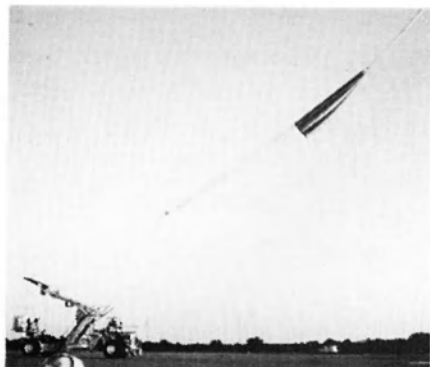
The EOSCOR (Extended Observation of Solar and Cosmic Radiation) detector consists of two one metre square plastic scintillator elements separated by one metre for time of flight measurements, with anticoincidence scintillators above and below the main detector. Neutrons incident on the detector produce a proton via n-p scattering or a reaction in the upper target scintillator, and the proton's velocity is determined by the time of flight between the elements.

Isochronous adiabatic light guides on all sides of the scintillator elements are used to help correct the time of flight measurement for inclined particle trajectories, and to improve the uniformity of pulse height measurement.

With this system, a solar neutron event will be identified by an increase in the neutron counting rate over the atmosphere neutron flux caused by cosmic rays, correlated in time with the solar flare.



Overall view of the payload



Early stages of the balloon flight



A typical balloon launch

## "TWO METRE EME

IN

## THE SOVIET"

VHF/UHF activity in many Region III countries receives publicity in the various national journals but, in general, little is known of such activity in those Soviet countries that neighbour Region III

The journal "RADIO" is published regularly by REF in Moscow and from time to time information about ultra shortwave (as VHF/UHF work is known in Soviet Union) activity is published.

The following piece appeared in "RADIO No. 5 — 1982" and we are indebted to Dex Anderson for the translation into English from the original Russian.

D. H. RANKIN  
9V1RH/VK3QV

UB5JIN, with assistance from UB5JFR and UB5JMR, erected a new F9FT antenna of 8 x 9 elements. Its span is 6.6 x 2.6m, the width of the main lobe of its gain is 20 to 21 dB, and its SWR is 1.2. The result was not slow in showing up. On 6 December the first EME-QSO within the USSR took place between UB5JIN and UA3TCF. For about 45 minutes the partners literally "fished out" signals one from the other, but the necessary exchanges of information nevertheless took place. That day both operators heard a rare station — VK5MC, the lone representative of the Australian continent for EME contacts. For communication he uses an antenna with gigantic (by amateur standards) measurements — a horizontal rhombic 20 by 200 metres! Obviously, such an antenna can't rotate, so favourable conditions for communications with him only appear for UA3TCF and UB5JIN not more than twice a month for around 20 minutes.

The regular "window" to the USA of December enabled EME stations to log one more Soviet call. UD6DFD worked K1WHS. He used a 2 x 13-element antenna of the F9FT type and a converter with a noise factor of 11 kTo. UA3TCF added to his count of moon contacts. He worked WA4LYS, WD5CRK, KB8RQ, VE7SL. UG6AD had his second EME contact with K1MNS.

QSLs to VK3CIT

Acknowledgments and thanks for their help with this article to:

Professor John Thomas,  
Owen Mace,  
Glen Frye,  
Alan Owens,  
John Paniettieri.



Isochronous adiabatic light guides which are used to help correct time of flight measurement and improve uniformity of pulse height measurement.

Processing and transmission of data is of great importance with an airborne experiment. Telemetry is via an uplink to the GOES geostationary satellite with a very low bit rate — effectively 60 bits per second, and so considerable inflight data processing and reduction must be performed, given the maximum 20 kilobit per second data rate. The experiment uses a Motorola 6800 microprocessor, in conjunction with an AMD9511 arithmetic unit to execute data reduction, control formatting of the compressed data transmission, record data on two onboard cartridge recorders, and control its live time.

Power for the experiment electronics is provided by 22 silver cadmium cells in series

giving a capacity of 40 Ampere-hours. The batteries are charged by lightweight solar panels, each of 40 Watt peak power, with 12 of these panels being suspended across the top of the payload package.

If you come across a signal on about 29.300 MHz, call sign VK3CDT/AM, don't be alarmed, it will be EOSCOR 3 circling the globe.



## THE ICOM IC-740 HF TRANSCEIVER



# EQUIPMENT REVIEW

Ron Fisher VK30M  
3 Fairview Avenue,  
Glen Waverley, Vic., 3150

Perhaps the best way to start this review would be to turn to the April 1982 issue of Amateur Radio and read the review of the IC-730. The new IC-740 has a lot in common with the earlier model and certainly overcomes many of the criticisms that I made in that review.

With this in mind, I feel that the best way to start, is to compare the 740 to the 730. After all, many prospective purchasers will be doing just this. In other words, is it worth spending the extra dollars?

Getting hold of an IC-740 was not an easy task to start off with. It seems that they are unavailable in Melbourne, at least at the time this review was written (late October) but as luck would have it, Andrews Communications Systems of Maroubra Junction, Sydney had plenty in stock when our advertising man John Hill VK3DKK called on them recently. They kindly offered one for review which John brought back to Melbourne.

Well lets look at the 740 and see where it differs and where it compares with the 730.

In appearance the two are similar. It is quite easy to pick the family resemblance of the two transceivers. Band coverage now includes 160 metres plus of course all the amateur bands from there up to ten metres including the new WARC bands. As with the 730, the 740 is an amateur band only transceiver, it does not have general coverage receive capability. Its nice to see 160 metres included, but you just cannot win. In my review of the 730 which did not have

160 but had a very good AM facility, I said it would be good to have 160 to make use of the AM. Guess what — the 740 does not have AM.

The 740 is larger and heavier than the 730. The dimensions are: 111mm high, 286mm wide and 374mm deep which represents an increase of 17mm, 45mm and 99mm over the 730. Even so, the 740 does not look over large and when it is considered that it is possible to fit an AC power supply inside the cabinet, then the 740 would be by far the most compact complete transceiver available at the present time.

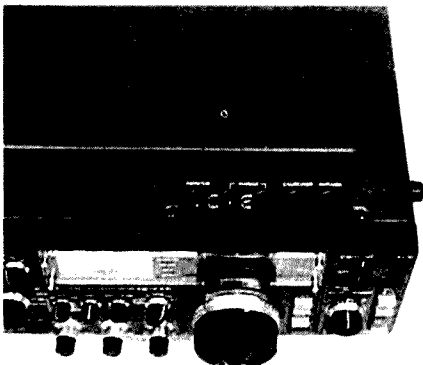
Our review transceiver was not supplied with a power supply and all tests were carried out using the recommended ICOM IC-PS15 external supply. It seems that the internal supplies are not available at the moment and there is no information about them, even in the 740 instruction manual.

The height increase to 111mm now brings it up to the same height as the IC-720 and all the matching ICOM accessories such as the power

supplies, antenna coupler and linear amplifier. This overcomes the problem of non-matching ancillary equipment, but, the cabinet of the 740 is finished in a different colour to all the existing ICOM gear. The front panels match OK but the 740 cabinet is now a mid grey, several shades lighter than older equipment. However lets put the cosmetic issues to one side and look at the electronics of the 740.

Some of the new features incorporated in the 740 include: Selectable IF shift or band pass tuning, a notch filter, normal or wide noise blanker, selection with separate level control now all on the front panel, continuously variable AGC decay time from off through fast to slow, a squelch control usable on all modes, an audio tone control and an RIT usable on both transmit and receive. Coupled to all of this is the proven ICOM tuning system as used in the IC-730, which includes variable rate tuning with 10Hz, 100Hz and 1kHz switchable options. Dual independent VFO's with a

memory for each band provide a very flexible tuning system. The present controls of the 730, that were hidden under the top hatch, are now either repositioned to the front panel or on a very neat control panel on the top front of the transceiver just above the digital display. Additional status indicators have been included for receive, split VFO operation and memory as well as a transmit indicator. These are all positioned vertically between the 'S' meter and the digital frequency display. As an option it is now possible to fit an electronic keyer with the speed control doubling with the VOX gain control. Another option is FM which could be useful in conjunction with a VHF converter or perhaps on the FM portion of 10 metres.



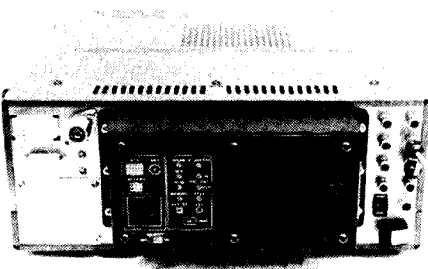
Top panel controls inc. calibrator on/off, calibrator level output, transceiver calibrator and anti-VOX.

Interconnection facilities have been greatly increased on the rear panel, with the most obvious improvement being a separate T/R control for linear operation and the memory backup terminal. These were combined with internal selection on the 730. Other additional rear panel connectors include, ALC output, transverter output, receiver input and output, RTTY keying input and even a spare connector. Perhaps the only things missing are an IF output for connection to a monitor scope, but no doubt this could be connected to the spare terminal and a phone patch in and out, which is available via the rather inconvenient 24 pin socket. Metering has been improved with a six position selector on the front panel giving readings for IC, ALC, Compression, relative RF output, SWR set and SWR read.

A preamp in/out switch allows the RF amplifier to be switched out to improve strong signal handling. As we shall later see, this works better than on the IC-730.

#### THE IC-740 ON THE AIR

Like most modern transceivers, the IC-740 requires no tuning up. Just connect an antenna



Rear view shows various connectors and facilities — note cooling fan.

with a matched 50 ohm feed line or present a 50 ohm load in any other way and you are under way. The tuning is very smooth, but lacks the spin of the earlier ICOM transceivers. For most requirements, the 100Hz tuning rate is excellent. The 1kHz rate really gets you to the other end of the band in a hurry.

In terms of tuning knob rotation, the 100Hz rate is equal to 1kHz per revolution, the 100Hz, 10kHz per rev and the 1kHz equals 100kHz per revolution.

Received audio quality was generally very good with plenty of audio output. The continuously variable AGC did not come up to expectations. Even when set to the full slow position, the decay time was too fast, particularly on strong signals. With a variable system why not make the slow setting too slow, then everyone should be happy. The IF shift / pass band tuning did not come up to expectations. When used, each produces a similar effect and of course to achieve the best results we need to have both operating together. With the IC-740 only one can be used at a time. They are certainly useful in removing interference but of course when the selectivity is reduced in one direction only, there is a limit to how far one can go and still retain intelligibility. With both systems in use it is possible to narrow the band pass from both ends and so retain a balanced response. Perhaps ICOM might rethink this with future models.

The IC-740 also has a filter switch (just below the IF/PBT switch) which apparently allows the selection of an additional filter in the 455kHz IF. Unfortunately the English handbook makes no mention of just what is available to go here. The Japanese handbook seems to cover this in some detail but my Japanese is not up to translating it.

In fact, the selectivity appeared to be very good and with a touch of either IF shift or band pass tuning it was amazing just what could be pulled through the QRM.

The dual VFO's allow one to leave one set up on your normal operating frequency and to tune around the band with the other. In addition to this the memory facility can be set up on another frequency for instant selection. A completely separate frequency can be selected for each band with the exception of 160 metres which shares the memory with 80 metres. On transmit, the 740 operates very smoothly. Output power can be set to any level from about 10 watts to maximum with the variable drive control. Quite handy if you enjoy a bit of QRP operation. Setting the microphone gain control seemed to be non-critical but reports on air were not all that complimentary. However, using the compressor improved things to a marked extent. The audio level came up and also the high frequency content of the signal came up. Reports also indicated that the slight edginess that was apparent before had disappeared.

Back to the receiver side: it seems that the noise blanker on our review transceiver was completely inoperative. Just as soon as I can get to another IC-740 to check out the blanker I will report on this important aspect. However, one plus for the blanker is that all controls are now located on the front panel. The blanker and AGC controls are rather small and closely spaced for my clumsy fingers but certainly a vast improvement on the miniature hidden controls on the 730.

Metering is very good with most required functions available. It is certainly a great idea to have a built in SWR meter. The forward set for this is actually the RF power control. Other meter functions include RF out (preset), compression, ALC and final amplifier current. The 'S' meter function is automatically selected on receive.

Now to the pre amplifier. The action of the

preamp on the 740 is very different to the 730. Receiver sensitivity seemed to be excellent with the preamp switched out with the gain coming up noticeably when the preamp is switched in. I would say that, in most instances, you will be happy to leave the preamp out. Strong signals certainly sound better without it, and I could not actually find a case where I could copy a signal with it in that could not be copied with it out.

#### THE IC-740 on TEST

The following equipment was used to produce our figures on the IC-740. Drake W4 watt meter. Yaesu YP-150 watt meter 50 ohm load. Kenwood SM 220 monitor scope. Daven audio power output meter. AWA F242A noise and distortion meter. AWA G230. Low distortion audio oscillator. 100kHz crystal calibrator.

#### FREQUENCY STABILITY

Stability was checked against VNG on 7.5MHz and it proved to be of a high order. Over a one hour period, drift did not exceed 100Hz. It was noted that tuning over a strong signal from my external crystal calibrator, that with each 100Hz tuning step, the beat note would vary about 50Hz over a two or three second period, and then would stabilize. In normal use this would not be noticed.

#### POWER OUTPUT

Power output was measured with full drive under CW conditions and checked for PEP output using the monitor scope. While doing this, it was noted that there was no output on the 18 and 24 MHz bands. It is assumed that operation on these bands has been inhibited in some way, but no mention is made of this in the instruction book.

|                   |                   |
|-------------------|-------------------|
| 1.8 MHz 95 watts  | 18.0 MHz NA       |
| 3.5 MHz 90 watts  | 21.0 MHz 75 watts |
| 7.0 MHz 85 watts  | 24.5 MHz NA       |
| 10.1 MHz 85 watts | 28.0 MHz 40 watts |
| 14.0 MHz 80 watts |                   |

The low output on 28MHz is a surprise. As the IC was also low on this frequency, it would appear that the drive to the final was down. PEP output on all bands appeared to be slightly higher than the above figures, perhaps by around 5%. The scope pattern was very clean at all times.

#### RECEIVER TESTS

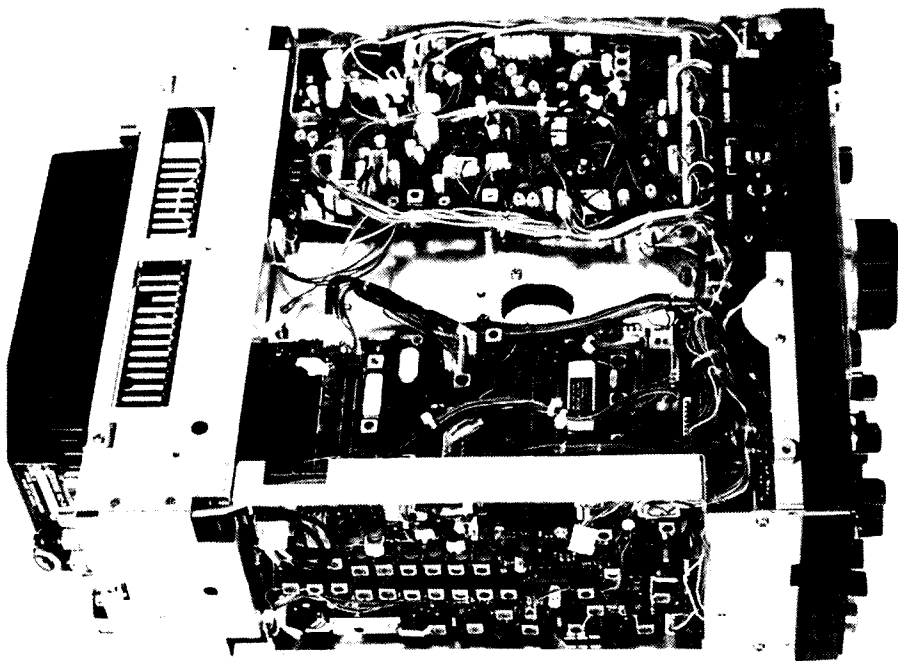
The receiver output was terminated with an 8 ohm load and connected to the noise and distortion meter and the power output meter. Residual noise with the audio gain at zero was -49 dBm unweighted and -42 dBm weighted. This is a marginal result and accounts for the noticeable hiss when headphones are used.

Maximum audio power output is 4 watts but at 32% distortion. If nothing else, this proves that the transceiver has loads of gain to drive the audio output well beyond its normal output capability.

At 2 watts output, distortion had dropped to 1.8% where it remained constant as the power output was dropped. This is quite acceptable. Received audio response was checked by tuning across a signal produced by an external crystal calibrator. The -6 dB points were at 350Hz and at 3kHz. The curve was very smooth between these points with no peaks or dips.

The action of the tone control was next tested. At 2.5kHz it was possible to reduce the output by 20dB. At the same setting it was down 15dB at 1.5kHz, 11dB at 1.0kHz and 8dB at 700Hz. This shows why the overall level of the received signal dropped when the tone control is used. A sharper top cut is required that does not effect the response around the 1kHz mark.

The notch filter was checked at several points across the response of the receiver. It was able to produce a consistent notch of -24 dB at any frequency. In terms of 'S' points, it



IC 740 with cover removed.

could reduce an 'S'9 beat note down to about 'S'2. This is very satisfactory.

Receiver AGC action was checked by feeding the crystal calibrator in to produce signal strength readings of S2, S8 and S9 + 20dB, the relative audio output level at each point was then measured. Using 'S' 2 as the reference, the output increased by 2dB at S6, another 1 dB at S8 and 7dB at S9 + 20dB. Above this signal level, the increase flattened off. This is not considered a particularly good result.

The IF shift and band pass tuning were checked by measuring audio frequency response with the slider control set well to one side and then switching from one function to the other.

With the IF shift selected, the band pass remained the same but was shifted in relation to the signal. The pass band tuning on the other hand increased the selectivity but in one direction only. Both systems were able to produce a - 10dB reading at 1.3kHz at the

same setting of the slide control. Of course with the IF shift selected, the response continued out into the opposite sideband where the band pass tuning cut this off at the normal low frequency cut off point. However in use, there did not appear to be much difference in interference rejection, due no doubt, to the fact that the most annoying interference occurs on the high side of the wanted signal.

As a final test, the audio output was measured with an S2 signal. An output of 2 watts produced, which certainly confirms my earlier comments that the IC-740 has plenty of overall gain.

Sensitivity checks have to be subjective as I do not have access to a suitable signal generator. On ten metres, the 740 heard exactly the same signals and in the same way as my comparative receiver. In other words, it's a good receiver but ten metre sensitivity hasn't improved over the last few years.

#### INSTRUCTION BOOK

Our review transceiver was supplied with two instruction books, one in Japanese and a photo copy of an English edition. The Japanese edition appeared to be very complete while the English one very incomplete. I can only assume, that in time, all owners will receive the proper book. In the meantime, the photo copy will be adequate for normal operational procedures. If I am able to inspect the normal manual in the future, I will comment on it in these pages.

#### CONCLUSIONS

As we have seen the IC-740 shows many improvements over the 730 but it also shows that in most ways you get what you pay for. For a certain amount of money you cannot have everything. However, that said, it must also be said that the 740 does give a lot for the money spent. Many of the features are not available on other transceivers in the same price bracket. Such things as the dual VFO's, memory system, three speed tuning and the possibility of a built in AC power supply all in an extremely compact unit. The IC-740 would have to be highly recommended. All enquiries regarding the ICOM IC-740 should be directed to ANDREWS COMMUNICATIONS SYSTEMS, Shop 7, Garden Street, Maroubra Junction, SYDNEY, N.S.W.

## SERVICE BULLETIN

### FT-230R REPEATER MODIFICATION

The FT-230R, as purchased, is set to operate in Simplex Mode, Repeater Mode and Reverse or "Anti-Repeat" Mode. In Reverse Repeater Mode the memory system is not functional, and the FT-230R operates + 600 kHz as if it were a 600 Repeater.

This modification converts the FT-230R for "+/Simplex/—" Split ( $\pm 600$  kHz). The memory system operates in all three modes.

Remove the 4 screws at the rear of the set and 2 screws on each side which hold on the covers. Remove both covers and unplug speaker leads. Remove the 4 cheese head screws near the front of the unit, 2 per side (not the countersunk screws). Remove the 2 screws holding in the control unit PC board; also the stand offs and screw holding in the switch unit. Carefully move these circuit boards to expose the back of the "RPT" switch. Remove knob,

nut, and washer from the "RPT" switch, and remove from the case. Cut the green wire from the switch and resolder to the contact near the black wire of the switch (see Fig. 1). Replace the switch, knob, both PC boards and screws.

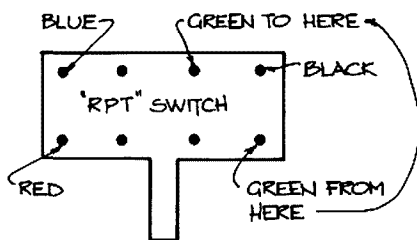


FIG. 1

Locate the CPU IC on the control unit (large square IC on second vertical PCB in front of unit) and the circuit board glued on top of the CPU. Remove green wire and

resolder on to the pad next to the anode end of the diode which connects to the same board (see Fig. 2).

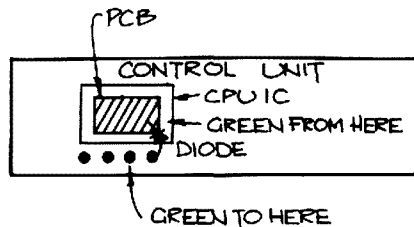


FIG. 2

Re-assemble the radio and remove "REV" sticker on "RPT" switch on front panel ("RPT" switch now reads "+/Simp/+").

This information has been kindly supplied by Dick Smith Electronics, Technical Bulletin No. 74.

# EVALUATION AND ON AIR TEST OF ICOM IC-740

Serial No. 01141

| CATEGORY                                                                         | RATING | COMMENTS                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>APPEARANCE</b>                                                                |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Packaging                                                                        | **     | Foam inserts. Strong carton. But not quite as good as previous Icom.                                                                                                                                                                                                                                                                                                                                   |
| Size                                                                             | ****   | Considering power supply can be built in, very compact.                                                                                                                                                                                                                                                                                                                                                |
| Weight                                                                           | ***    | Only 8Kg. (Less power supply).                                                                                                                                                                                                                                                                                                                                                                         |
| External Finish                                                                  | ***    | Very well finished. Clean appearance.                                                                                                                                                                                                                                                                                                                                                                  |
| Construction quality                                                             | ****   | Typical ICOM quality.                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>FRONT PANEL</b>                                                               |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Location of controls                                                             | ***    | Some controls rather small but reasonably placed.                                                                                                                                                                                                                                                                                                                                                      |
| Size of knobs                                                                    | ***    | See above.                                                                                                                                                                                                                                                                                                                                                                                             |
| Labelling                                                                        | ***    | Clearly labelled.                                                                                                                                                                                                                                                                                                                                                                                      |
| Meter                                                                            | ***    | Clearly calibrated and well illuminated.                                                                                                                                                                                                                                                                                                                                                               |
| VFO knob action                                                                  | ***    | Smooth. Three tuning rates.                                                                                                                                                                                                                                                                                                                                                                            |
| Dial readout                                                                     |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Analogue                                                                         | Na.    |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Digital                                                                          | ***    | Bright. Accuracy reasonable. Does not slow RIT frequency shift.                                                                                                                                                                                                                                                                                                                                        |
| Status Indicators                                                                | ***    | Five indicators. Better than previous model.                                                                                                                                                                                                                                                                                                                                                           |
| REAR PANEL                                                                       | ***    | Most required facilities available.                                                                                                                                                                                                                                                                                                                                                                    |
| <b>RECEIVER OPERATION</b>                                                        |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| VFO Stability                                                                    | ****   | Very stable. See test section.                                                                                                                                                                                                                                                                                                                                                                         |
| Digital dial accuracy                                                            | **     | Needs to be calibrated but good accuracy after that.                                                                                                                                                                                                                                                                                                                                                   |
| Analogue dial accuracy                                                           | Na     |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Memories                                                                         | ***    | One memory for each band except 160 (same as 80 metres)                                                                                                                                                                                                                                                                                                                                                |
| Shift/width                                                                      | **     | Both provided but only one usable at a time.                                                                                                                                                                                                                                                                                                                                                           |
| Notch filter                                                                     | ***    | Produces good null                                                                                                                                                                                                                                                                                                                                                                                     |
| Peak filter                                                                      | Na.    | See test section of text.                                                                                                                                                                                                                                                                                                                                                                              |
| Spurious responses                                                               | ****   | A few very weak beats. Not audible with antenna connected.                                                                                                                                                                                                                                                                                                                                             |
| 'S' Meter                                                                        | ***    | Smooth and realistic response.                                                                                                                                                                                                                                                                                                                                                                         |
| AGC performance                                                                  | **     | Although continuously variable, not sufficient decay range. Also see test action of text.                                                                                                                                                                                                                                                                                                              |
| Signal handling                                                                  | ***    | Very good, but extra decay would help strong signals.                                                                                                                                                                                                                                                                                                                                                  |
| Clarifier                                                                        | ***    | Selectable for transmit, receive or both.                                                                                                                                                                                                                                                                                                                                                              |
| Sensitivity                                                                      | ***    | On a par with other current models.                                                                                                                                                                                                                                                                                                                                                                    |
| RF attenuator                                                                    | ***    | Preamp in/out. Works better than most.                                                                                                                                                                                                                                                                                                                                                                 |
| RF gain                                                                          | ***    | Progressive action.                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>NOISE BLANKER</b>                                                             |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| The noise blanker in our review transceiver did not appear to be working at all. |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>QUALITY OF RECEIVED AUDIO</b>                                                 |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Internal speaker                                                                 | **     | Reasonable quality.                                                                                                                                                                                                                                                                                                                                                                                    |
| External speaker                                                                 | Na.    | External unit available as option.                                                                                                                                                                                                                                                                                                                                                                     |
| Headphone output                                                                 | **     | Quite a bit of hiss audible at low volume setting.                                                                                                                                                                                                                                                                                                                                                     |
| Cooling fan noise                                                                | **     | Fan only operates on transmit, but fairly noisy.                                                                                                                                                                                                                                                                                                                                                       |
| Tone control                                                                     | **     | HF cut not sharp enough. Drops overall audio level. See test section of text.                                                                                                                                                                                                                                                                                                                          |
| <b>TRANSMIT OPERATION</b>                                                        |        |                                                                                                                                                                                                                                                                                                                                                                                                        |
| CW & PEP output                                                                  | ***    | See test section of text.                                                                                                                                                                                                                                                                                                                                                                              |
| Audio response                                                                   | **     | Rather harsh quality. Not judged on air as first class.                                                                                                                                                                                                                                                                                                                                                |
| Audio sensitivity                                                                | **     | Essential to close talk microphone for full output.                                                                                                                                                                                                                                                                                                                                                    |
| Monitor                                                                          | ***    | Worked well, but level not compatible with received audio.                                                                                                                                                                                                                                                                                                                                             |
| ALC action                                                                       | ***    | No flat topping noted on scope.                                                                                                                                                                                                                                                                                                                                                                        |
| Compressor                                                                       | ***    | Most effective. Reports indicated improved quality when used.                                                                                                                                                                                                                                                                                                                                          |
| Metering                                                                         | ***    | Several functions selectable.                                                                                                                                                                                                                                                                                                                                                                          |
| Relay noise                                                                      | ***    | Quite low.                                                                                                                                                                                                                                                                                                                                                                                             |
| VOX Operation                                                                    | ***    | Good range of adjustment on gain, delay and anti-trip.                                                                                                                                                                                                                                                                                                                                                 |
| Cooling                                                                          | ***    | Final runs cool under normal temperatures.                                                                                                                                                                                                                                                                                                                                                             |
| MANUAL (Owners handbook)                                                         | *      |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Further comments:                                                                |        | <p>Only photocopy of English handbook supplied. Did not seem complete.</p> <ol style="list-style-type: none"> <li>1. Not selectable sideband. Necessary to retune 3kHz when changing to rev. sideband.</li> <li>2. If VFO knob is spun fast on 10kHz position will jump to 1kHz steps.</li> <li>3. I like the SSB NOR/REV switching which obviates switching sidebands when changing bands.</li> </ol> |

Rating Code: Poor \* Satisfactory \*\* Very Good \*\*\* Excellent \*\*\*\*

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## GENERAL TOPICS

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## OLD TIME RADIO

# THE SUPER DEFIANT HALLICRAFTERS SX-25

(A pre-WWII General Purpose and Amateur Band Receiver)

Allan Shaws Smith, VK4SS

35 Whynot Street, West End  
Brisbane, 4101

*The USA is often referred to as the home of private enterprise, where every market has a caterer. This was certainly true for the early wireless experimenter; as long ago as pre-WWI, component manufacturers saw to it that the homebrewer could purchase readily all the bits and pieces that his expanding hobby required. Then, after the first World War, complete kit sets and units began to appear, viz. 2, 3 or 4 tube transmitters and receivers etc., and many of these were sold — but, even so, a large body of experimenters preferred the challenge of building their own.*

It was not until the late twenties or early thirties, when the superheterodyne circuit had been developed and proved itself vastly superior, that the amateur began buying the receiving section of his rig off the shelf. In those days, to assemble this type of set required a fair degree of constructional skill, many hours of labour and extra test gear, if the end product was to perform anywhere near its optimum. No doubt all this, plus the attractive appearance of the commercial equipment coming onto the market influenced the amateur to dip into his hip pocket for an 'instant ready-to-go plug-in unit'. One of the most popular of these during the late thirties was the SUPER DEFIANT SX-25, a general purpose and amateur band receiver, produced by HALLICRAFTERS. Earlier reviewers saw fit to describe it thus:

*"The engineers of the Hallicrafters Co. have embodied in the Super Defiant Model SX-25 Receiver every worthwhile advancement that has been made in the communications field . . . the user should find in this receiver the complete answer to his reception requirements."*

### FREQUENCY RANGE

The Super Defiant tunes from 540 kilohertz to 42 megahertz in four bands. The frequencies covered per band are as follows:

| BAND | COVERAGE            |
|------|---------------------|
| 1    | 540 kHz to 1.7 MHz  |
| 2    | 1.7 MHz to 5.1 MHz  |
| 3    | 5.0 MHz to 15.7 MHz |
| 4    | 15.2 MHz to 42 MHz  |

The MAIN TUNING DIAL which appears behind the large escutcheon is accurately calibrated in kilohertz on Band No 1 and in megahertz on the remaining three bands.

**Note:** The accuracy of the main dial calibration will hold only if the band spread condenser is set at minimum capacity, or the position indicated by 100 on the band spread dial, which has been approached by turning the band spread knob in a clockwise direction, or to the right, as far as it will go.

### FREQUENCY METER TUNING

The BAND SPREAD DIAL of the SX-25 Model is calibrated so that the operator may determine quite closely the frequency of the signal to which he is listening, on the 10 to 80 metre amateur bands inclusive. The outer edge of this dial is marked off in 100 divisions for additional ease in logging and locating stations.

### AMATEUR BAND

160 metre  
80 metre  
40 metre  
20 metre  
15 metre (not calibrated  
in kHz)  
10 metre

### SET BAND SWITCH AT

Band 2  
Band 2  
Band 3B  
Band 3  
Band 3  
and 4  
Band 4

### TUBE LINE-UP

6SK7 1st RF Amplifier  
6SK7 2nd RF Amplifier  
6K8 1st Detector-Mixer HF Oscillator  
6SK7 1st IF Amplifier  
6SK7 2nd IF Amplifier  
6SQ7 2nd Detector, AVC  
1st stage of Audio  
6SQ7 Phase Inverter

PP-6F6s 2nd Audio output stage  
6H6 Automatic Noise Limiter  
6J5GT Beat Frequency Oscillator  
80 Rectifier  
(a total of 12 tubes)

### CONTROLS AND OPERATION

Reading from left to right, the functions of the various identified controls will be described:

The RF GAIN control adjusts sensitivity by varying the cathode bias on the 'RF and IF amplifiers (normal method).

The BAND SWITCH allows selection of the frequency ranges. As previously shown, Band 3B is to be used when band spreading the amateur 40 metre band.

The SELECTIVITY - AVC SWITCH provides

a means of bringing the signal through varying conditions of interference.

The PHONE-XTAL positions are an intermediate step in selectivity between CW crystal and IF sharp. Phone signals must necessarily be accurately resonated when operating in the Phone Xtal position or Side Band attenuation will seemingly reduce the strength of the signal.

The MAIN TUNING control is calibrated as described earlier.

The TONE-HIGH LOW switch directly below the above control in the 'High' position gives natural reproduction. In the 'Low' position, the highs are cut off, a condition that will be helpful in receiving signals during certain types of interference.

The CRYSTAL PHASING is used in its association with the CW Xtal selectivity position.

The BAND SPREAD knob allows smooth back-lash-free operation of the separate band spreader condenser and dial.

The ANL or AUTOMATIC NOISE LIMITER switch will effectively minimize ignition and similar types of interference. Best results are obtained with the AF Gain control set near the minimum end — or lowest output.

The AF GAIN control turns the receiver 'off' and 'on', as well as controlling the audio output volume of the receiver.

The PITCH CONTROL and its associated BFO OFF-ON switch provide a beat note for the reception of CW signals. The Pitch Control, when the BFO switch is in the 'on' position allows variation of the frequency of the resultant beat note to a pitch most pleasing to the listener. For optimum reception of SSB, a PRODUCT DETECTOR should be added in place of the 2nd Detector circuit.

The SEND-RECEIVE switch momentarily removes plate voltage from the tubes in the receiver, so that the set can be made inoperative during stand-by periods.





# A 20 METRE VERTICAL

LEO WELLER VK3YX  
46 Peperell Ave., Syndal 3150

This antenna experiment started with a simple telephone call from Holland. Some of my old friends; PAOSQ and PAOCH asked could we make contact on twenty metres, by joining a group of VKs and PAs who were making contact on 14.100 MHz daily.

## PRELIMINARY EXPERIMENTS

A dipole was constructed from aluminium tubing, tuned, matched and set in the correct direction. Despite the good conditions not a whisper came across.

Little effort and material was involved in modifying the dipole to a ground-plane. Tuning was achieved by adjusting the length; matching by bending down the radials. With this antenna we had some results. We received good reports but unfortunately, more often than not, we had to spell our name 'LEO' and QTH; 'MELBOURNE' three times to receive a 'Roger'. While this is sufficient to be awarded a QSL card an improvement is needed for a pleasant contact.

## SOME HISTORY

An antenna, popular in the 1950's when most amateurs used open feeders, was the 'J' antenna or the vertical zep (Fig. 1). The vertical radiation pattern from this antenna with the base one half wave length above ground shows only one main lobe at 15° above the horizon. Yet excellent DX can be expected with the base down to one quarter wave above ground.

We had good results at that time with one constructed from electrical conduit with a steel tank aerial on the top.

Who remembers those days? 'Snowy' Millbourn (Silent Key) must have sold hundreds of tank aerials from his old Ham Radio shop at that time in Melville Street, Hawthorn.

## CONTINUING THE EXPERIMENT

This time construction was from aluminium tubing in imperial sizes. This is an excellent telescopic fitting material. First attempt on receive only, using an antenna tuner, was a remarkable improvement to the ground plane. This was mainly because the local stations were way down due to the difference in polarization. A disadvantage was,

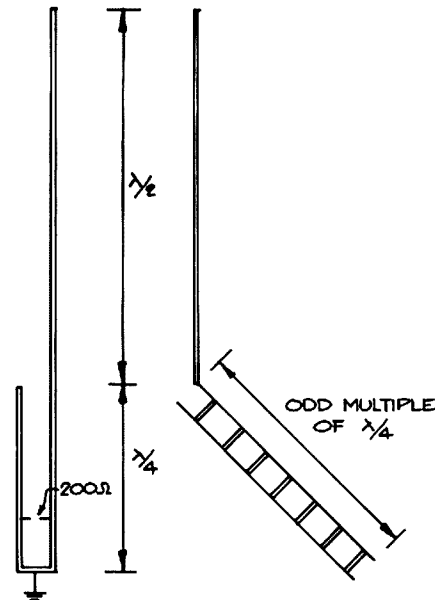


Fig 1: J Antenna. Vertical Zep

we could not copy the local stations. This created problems in a round-table-local-DX-QSO.

Over the next few days, between daily contacts, the antenna was tuned and matched until the tuner could be omitted. The results were very pleasing. While the other VK's with three element cubical quads, received a 20 dB over S9 report from Holland, we received 5X7 or 5X8 but readability was really 5, no repeating and a normal conversation.

## CONSTRUCTION DETAILS

All joints overlap 30 cm and are secured with two zinc plated binding head self tappers 4G x 6mm. 30 mm from the end of the tubes all screws are in line on one side. Use a 2mm drill, heavy screw driver and a tapping action. Flatten top and remove corners.

Two 32 x 25 PVC reducing couplings make excellent insulators. Remove inside ridge and make a saw cut along the length. Clamp the tube in the insulator with a hose clip. A BB bolted clamp is suitable for the final mounting. All this material is available from your local plumbing supplier.

Just to be on the safe side, a 3mm hole was drilled in the top, a nylon washing line threaded through the centre and secured at the top and bottom as a safety line.

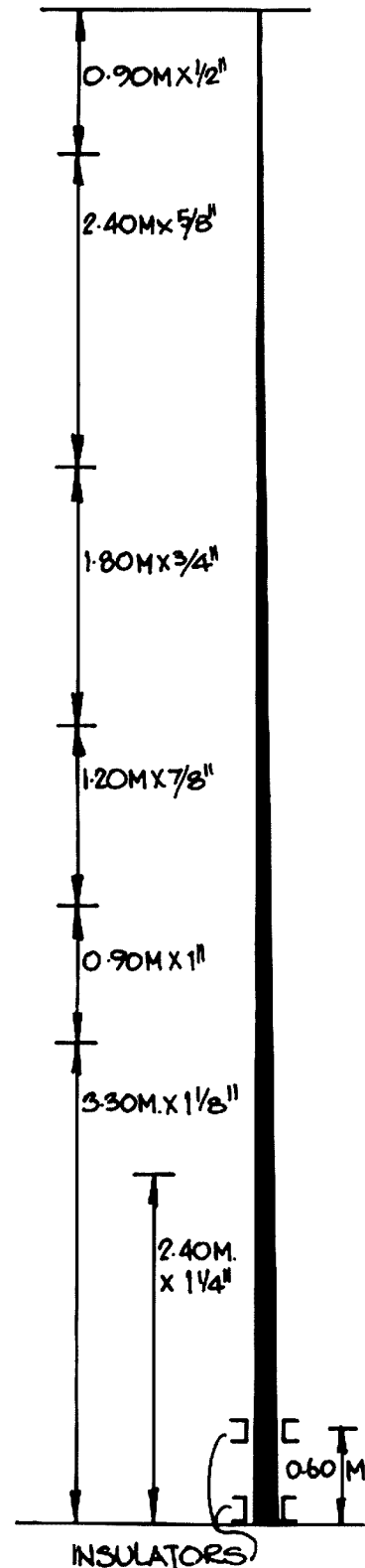


Fig. 2.

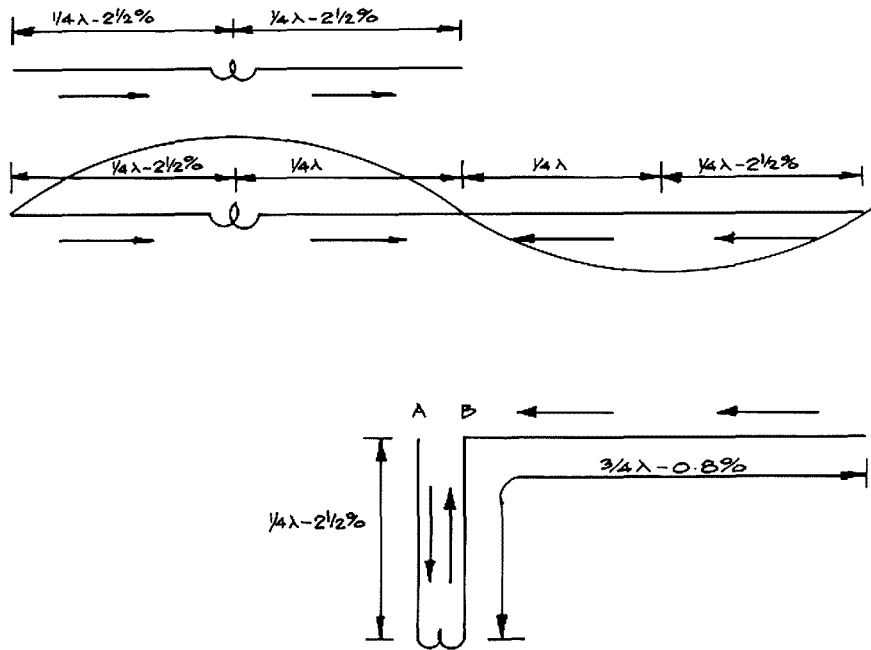


Fig 3: Evolution of the Zepp

All measurements for the 10 metre high, small diameter, light weight, free-standing vertical are in figure 2. The top section is shorter than the second section because the recovery to the straight-up position after a gust of wind was otherwise too slow.

#### TUNING THE EASY WAY

The first attempt using open feeders having half the length of the antenna, a 1:1 balun and two metres of coax connecting the balun to antenna tuner achieved quick results, free of problems. As a matter of fact all tuning afterwards did not improve communications.

#### TUNING THE HARD WAY

Operation without an antenna tuner is attractive. Low SWR can only be expected if the feed-point (balun) is exactly on the current loop of the whole system. This can be realised by trimming the dead end feeder A in figure 3. This is critical. Tuning to a specific frequency must be done at both feeders, at B three times the length as A. There are three quarters involved. The length of the vertical is not critical but the total, vertical + active-feeder is important. Figure 3 also indicates current direction to show the cancelling affect of the open feeders. Also shown in figure 3, the indicated 2.5% length reduction is a consequence of end-effect.

#### OPEN FEEDERS

Information on the construction of open feeders can be found in most handbooks and will depend on the material available. Here it was aluminium tubing and perspex spacers. Without a tuning capacitor the SWR is below 1.5 over the entire band.

#### NEW INFORMATION

Two items not found in text books might be of interest to other experimenters:

Firstly, tuning and matching of an antenna system can be done with an antenna tuner. With a 50 ohm dummy load one calibrates the tuner for 50 ohm in and out at the desired frequency. Note the tuning capacitor position replace load with antenna, and adjust the antenna until the same condition is achieved. The tuner can now be removed to eliminate its losses.

Secondly, with an antenna system accurately tuned and matched close to the high frequency end of the band, a capacitor parallel with the coax will do all the tuning needed.

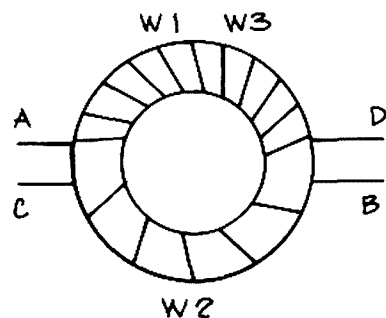
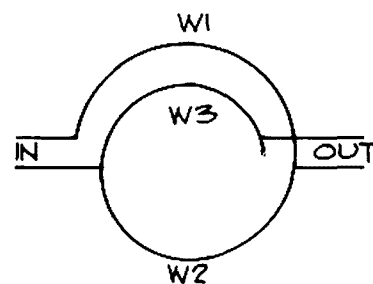
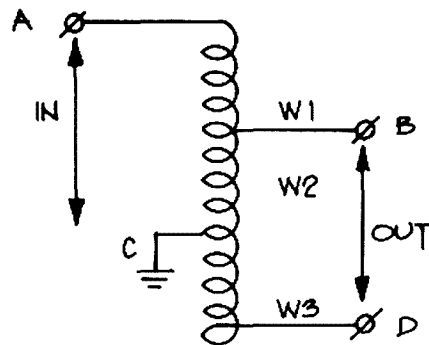
#### BALUN

If desired, a ferrite-core balun may be made. First wind 5 turns on one half of the core's circumference. Make a tap and then 5 turns on the other half. Make another tap. Continue winding another 5 turns in between the first set. See figure 4. This will give a 1 to 1 balanced to unbalanced transformation.

#### CONCLUSION

The half wave vertical is the simplest antenna to fulfil the writer's needs at the time. It survived all storms in 1981. Yes, even the one that ripped the roofs off houses and uprooted the trees in the streets.

This is not an antenna to win the GRANDSLAM MARATHON WORLD-WIDE DX CONTEST. Neither is it much use for calling in a pile-up. However, it will contact any station with a signal strength of S7 or more, and that is a lot of stations in a lot of countries.



WINDING 1, 2, 3, : 5 TURNS

Fig 4: Balun Winding



# QSP

#### HOW MANY TRANSISTORS IN A COMPUTER?

Have you ever stopped to figure out how many transistors might be used in a home computer? Most home computers have 48K of storage. Now in computerese 48K means almost 50,000. This is bytes, and each byte is 4 bits, each of which is 2 transistors for a minimum of 8 transistors. This means that there are about 400,000 transistors for the memory alone. These memory bits are useless unless there is an input and an output circuit which may consist of 2 for each bit. This brings the number up to 800,000 transistors. Then there is the ROM, the circuits to control the disks, printers, serial devices, tape recorders, etc. This may well bring the total number of transistors up to one million on that 48K personal computer you have in the shack.

Reprinted from: ARNS Bulletin - 8 '82  
AR

# THE KOOKABURRA COEFFICIENT

Max Eff VK2PMF

A new approach to the measurement of ERP (the author apologises should any feathers be ruffled).

Due to a shortage of trees, the writer erected a series of antennae for the birds to perch on. Subsequently, an interesting phenomenon was observed, which lends itself to RF measurement, and promises also to be an amusing past-time.

Taking as a stratified random sample a TRF (see below) of nine kookaburras, which had alighted on the driven element of a Yagi-Uda array, the author applied RF and observed the birds' behaviour. A series of controlled tests was then undertaken with a variety of TRFs, resulting in the data tabulated. The amateur need only observe the conditions outlined, consult the tables, and rest assured that output power is responsibly monitored.

### THE MEASUREMENT TECHNIQUE

When a group of birds (TRF: transient roosting flock) perches on the driven element of a parasitic array, the operator ascertains their number (counts them). The resulting value is  $i$ , the TRF index. RF is then applied (CW mode recommended). The operator must then count the number of birds which have fallen to the ground, and subtract this number from the TRF index.

$$\text{Now } S = (i_{\text{trf}} - n_{\text{bog}}) \times \frac{100}{i}$$

Where S = Stun rate

$i_{\text{trf}}$  = no. birds on antenna (TRF index)

$n_{\text{bog}}$  = no. birds on ground (RF applied)

Consultation of the curves shown in Figure 1 will give a reasonably accurate reading of ERP.

### NOTES

- (1) The use of native species of birds as at present not approved by the Frequency Management Division of the National Parks and Wildlife Service. (Table 1)
- (2) Care should be taken that the rates dissipation for a given species of bird is not exceeded. (See Table 2)
- (3) To avoid crowding the bands with unnecessary QRM, the use of a White Wyandotte as a dummy load is recommended.

DC input to pa stage (VSWR 1:1) (watts)

### Notes:

- Values under area z are of uncertain validity, as they were measured with an air-rifle.
- Values beyond point  $\beta$  result in the outright death of the bird, which indicates that the operator is exceeding the terms of her/his licence.

### KEY:

- A: Eagle
- B: Booby
- C: Grackle
- D: Wren (..... = current profile)
- E: Linnet

|                 | Sparrow | Mynah | Starling | Chook |
|-----------------|---------|-------|----------|-------|
| Sulphur-crested |         |       |          |       |
| Cockatoo        | 67      | 62    | 669      | 18    |
| Galah           | 48      | 4     | 77       | 19    |
| Black-faced     |         |       |          |       |
| cuckoo-shrike   | 2,398   | 66    | 5.09     | 8     |
| Eastern         |         |       |          |       |
| Pratincole      | 388     | 12    | 33       | 690   |
| Cape Barren     |         |       |          |       |
| Goose           | 0       | 0     | 0        | 0     |

(1: The Cape Barren Goose cannot grip a driven element. It keeps falling off. Webbed feet. (Our thanks to Duck Smith Pty Ltd for supplying the test unit.)

Table 1: Conversion factors, native to introduced species

|          | Dissipation (w)    | Inter-wingtip Capacitance (pF) | Claw Resistivity (oh) |
|----------|--------------------|--------------------------------|-----------------------|
| Budgie   | 23 <sup>1</sup>    | 2400                           | 780k                  |
| Noisy    |                    |                                |                       |
| Friar    | 350 <sup>3</sup>   | 3300                           | 15k                   |
| Bird     |                    |                                |                       |
| Boobook  | 66 <sup>2</sup>    | 12                             | 47                    |
| Owl      |                    |                                |                       |
| Rufus    |                    |                                |                       |
| Whistler | 17 <sup>1</sup>    | 17                             | 17                    |
| Turkey   | 400 <sup>2</sup>   | .01                            | 1k                    |
| Dodo     | 0 <sup>4</sup>     | 0                              | 0                     |
| Roc      | 1,000 <sup>1</sup> | 75                             | 76M                   |

(1: Class A 2: Not Class C 3: Key down 4: Cut-off)

Table 2: Dissipation Ratings for Several Species of Bird (plus associated data)

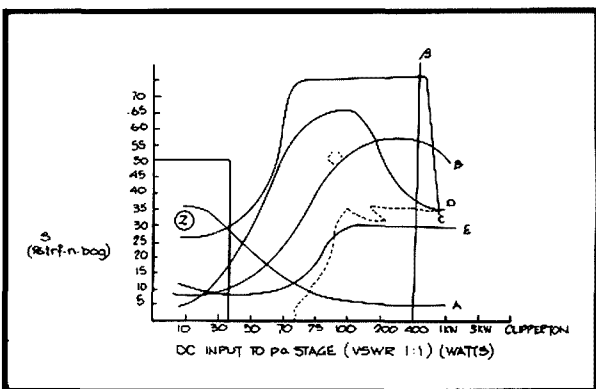


Figure 1: Power curves of five common species of bird

## HF-VHF-UHF ANTENNAS

The ATN range of HF, VHF and UHF Yagi, Log Periodic and dipole Antennas are ruggedly constructed for long life. High grade tapered, swaged and seamless aluminium is used throughout. The precision made injection moulded insulators use tough Lexan.

AH HF antennas include a 2 KW PEP balun, while the VHF and UHF range are supplied complete with a 200 W PEP balun. Also they may have up to 4 driven elements which provides both high gain and good broadband performance. The UHF range use "N" type connectors on their baluns.

| MODEL                                             | DESCRIPTION | GAIN (dBi) | BOOM (M) | PRICE \$ |
|---------------------------------------------------|-------------|------------|----------|----------|
| <b>(Showing bandwidth and number of elements)</b> |             |            |          |          |

### HF MONO BAND YAGI'S

|           |                                                               |      |     |        |
|-----------|---------------------------------------------------------------|------|-----|--------|
| 27-28-3B  | 11 metre 3 element yagi                                       | 10.0 | 3.5 | 77.00  |
| 28-29-3B  | 10 metre 3 element yagi                                       | 10.0 | 3.5 | 77.00  |
| 27-30-3B  | 10/11 metre 3 element yagi                                    | 10.0 | 3.5 | 92.00  |
| 20-30-1   | Rotary 15/11/10 dipole                                        | 2.2  | —   | —      |
| 20-30-11V | C.B. Base Dipole as above. Suit horiz. or vert. polarization. | —    | —   | —      |
| 14-14.4-1 | 20 metre heavy duty rotary dipole                             | —    | —   | —      |
| 14-14.4-3 | 20 metre 3 element yagi                                       | 9.2  | 6.0 | 183.00 |
| 14-14.4-4 | 20 metre 4 element yagi                                       | 10.0 | 7.0 | 276.00 |
| 21-21.5-3 | 15 metre 3 element yagi                                       | 9.2  | 4.5 | 122.00 |
| 21-21.5-4 | 15 metre 4 element yagi                                       | 9.9  | 6.0 | 204.00 |
| 21-21.5-5 | 15 metre 5 element yagi                                       | 11.2 | 8.0 | 296.00 |

### VHF MONO BAND YAGI'S

|            |                         |      |     |        |
|------------|-------------------------|------|-----|--------|
| 50-52.5-5  | 6 metre 5 element yagi  | 11.9 | 3.5 | 97.00  |
| 50-53-8    | 6 metre 8 element yagi  | 14.2 | 5.5 | 153.00 |
| 50-53-11   | 6 metre 11 element yagi | 16.2 | 9.0 | 194.00 |
| 144-148-8  | 2 metre 8 element yagi  | 12.7 | 2.2 | 60.00  |
| 144-148-11 | 2 metre 11 element yagi | 14.6 | 3.8 | 71.00  |
| 144-148-16 | 2 metre 16 element yagi | 17.0 | 6.3 | 91.00  |
| 144-148-13 | 2 metre 13 element yagi | 17.3 | 6.6 | 91.00  |

| MODEL | DESCRIPTION | GAIN (dBi) | BOOM (M) | PRICE \$ |
|-------|-------------|------------|----------|----------|
|-------|-------------|------------|----------|----------|

### UHF MONO BAND YAGI'S

|            |                           |      |      |        |
|------------|---------------------------|------|------|--------|
| 420-470-6  | 70 cm wideband 6 el.      | 10.2 | 0.6  | 46.00  |
| 420-470-14 | 70 cm wideband 14 el.     | 14.2 | 1.5  | 67.00  |
| 420-440-11 | 70 cm special 11 el.      | 15.7 | 1.85 | 71.00  |
| 420-440-15 | 70 cm special 15 el.      | 16.2 | 2.85 | 81.00  |
| 420-450-27 | 70 cm wideband 27 el.     | 16.7 | 3.05 | 101.00 |
| 432-16 LB  | 70 cm Narrow band 16 el.  | 17.2 | 3.7  | 87.00  |
| 47-5       | UHFCB 5 element yagi      | 9.2  | 0.65 | 46.00  |
| 47-11      | UHFCB 11 element yagi     | 17.2 | 1.7  | 67.00  |
| 47-15      | UHFCB 15 element yagi     | 18.0 | 2.8  | 77.00  |
| 580-14     | 50 cm ATV repeater 14 el. | 17.5 | 2.0  | —      |

10/30/9 (uses linearly loaded longest element for maximum efficiency O.A. 11.0 Mx) on 10m. boom available.

### HF BROADBAND LOG PERIODICS

|          |                           |      |     |        |
|----------|---------------------------|------|-----|--------|
| 13-30-6  | 13-30 MHz 6 el. Log       | 7.5  | 6.0 | 327.00 |
| 13-30-8  | 13-30 MHz 8 el. Log       | 9.0  | 8.5 | 409.00 |
| 20-30-6S | 20-30 MHz 6 el. Shortboom | 7.5  | 4.0 | 204.00 |
| 20-30-6L | 20-30 MHz 6 el. Longboom  | 8.5  | 6.0 | 235.00 |
| 20-30-8  | 20-30 MHz 8 el. Log       | 10.2 | 8.5 | 306.00 |

### RF POWER DIVIDERS

All power dividers are fitted with "N" connectors.

140-150-2 (Couples 2 x 50 OHm ants. to 50 OHm feeder at 140-150 MHz) \$49.00.

400-470-2, 450-500-2 and 470-520-2 UHF dividers, 2 port. \$46.00.

140-150-4 (Couples 4 x 50 OHm ants to 50 OHm feeder at 140-150 MHz. \$62.00.

400-470-4, 450-500-4 and 470-520-4 UHF dividers, 4 port. \$57.00.

## FERRITE BALUNS

| MODEL            | RATIO | CONNECTOR | FREQUENCY   | PRICE \$ |
|------------------|-------|-----------|-------------|----------|
| 3-150-1:1 200W   | 1:1   | SO 239    | 3-150 MHz   | 14.00    |
| 100-600 1:1 200W | 1:1   | "N"       | 100-600 MHz | 18.00    |
| 3-150-4:1 200W   | 4:1   | SO 239    | 3-150 MHz   | 18.00    |
| 3-100-1:1 1KW    | 1:1   | SO 239    | 3-100 MHz   | 26.00    |
| 3-100 4:1 1KW    | 4:1   | SO 239    | 3-100 MHz   | 29.00    |

## QUARTER WAVE SLEEVE BALLUNS

|                 |     |        |             |       |
|-----------------|-----|--------|-------------|-------|
| 144-148-50U 2KW | 1:1 | SO 239 | 144-148 MHz | 34.00 |
| 144-148-50N 2KW | 1:1 | "N"    | 144-148 MHz | 37.00 |
| 420-470-50N 2KW | 1:1 | "N"    | 420-470 MHz | 36.00 |

## INSULATORS

ATN Insulators are made available for those who wish to make their own antennas. They are manufactured from tough non-brittle ABS injection moulded plastic.

No. 1 for 1/2" or 3/4" elements on 2" boom, \$5.20.

No. 2 for 3/8" on a 1" boom (large size for VHF split dipole), \$1.65.

No. 3 for 1/4" on a 1" boom (small for VHF/UHF), \$1.35.

No. 4 for 1/2" elements on a 2" boom with 5" positive rake, \$5.20.

## TV ANTENNAS

Designed for extra high gain in poor signal situation on both VHF and UHF.

## COMMERCIAL ANTENNAS

A wide variety of commercial antennas can be supplied on request. For example the model 480-512-14 UHF commercial trigger link antenna.

## CUSTOM BUILT ANTENNAS

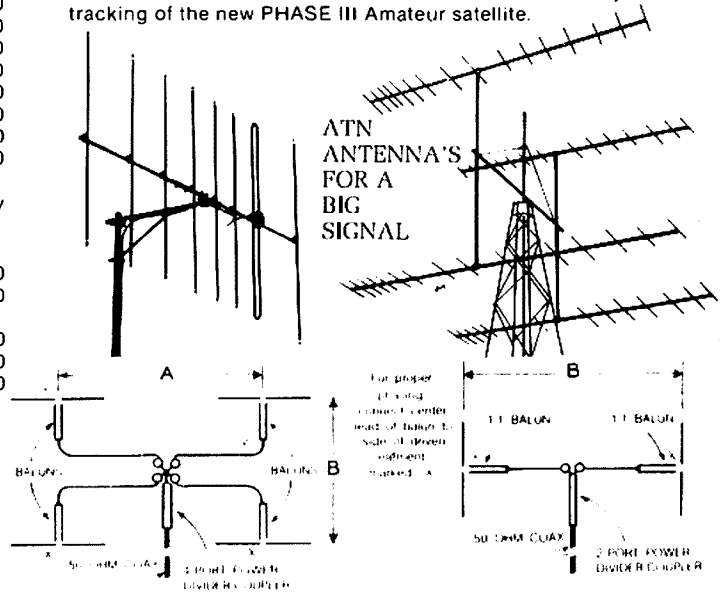
If you have an application but no antenna ATN antennas can probably help you. Contact us with your requirements.

## SHORTENED BOOM HF AMATEUR ANTENNAS

On special order ATN can supply a range of shortened boom HF yagi's for those with space problems.

## PHASE III SATELLITE PACKAGE

This new antenna system due to be available soon has both 144 and 430 MHz antennas mounted on the one sub-assembly to allow tracking of the new PHASE III Amateur satellite.



Also available power dividers/couplers, quarter wave sleeve baluns and matching harnesses for stacks of two or more arrays; also 1:1 and 4:1 baluns in 200W or 1 kW and insulators for homebrew. Write for free catalogue.

# ATN ANTENNAS

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Dealer requests invited VIC. (03) 570 1698

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QLD. (07) 397 0808  
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# VICOM'S CHRISTMAS STOCKING SALE.

At Vicom we plan to make this Christmas very special. We're offering very special deals on most of our top-selling Amateur radio names.

We've got special prices that will put cheer back into this Christmas.

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equipment sourced from around the world.

And naturally everything we sell at Vicom is backed by our 12-month warranty and top-line after sales service facility.

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John Lewis Electr...al 31 3322  
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Hamilton Electronics 72 3333

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Willis Electronics 21 7609  
Netronics 46 3232  
Kalgoorlie:  
Hocks TV 21 1906  
Derby:  
Hydra Electronics Services  
91 1307



| Base Stations                                    |                                                                                                   | Normally | Now            |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------|----------|----------------|
| IC720A                                           | Icom HF Deluxe Transceiver                                                                        | \$1,531  | <b>\$1,199</b> |
| IC551                                            | Icom 6M SSB/CW/AM Transceiver 10 Watts (in-built power supply)                                    | \$633    | <b>\$533</b>   |
| IC551D                                           | Icom 6M PBT/VOX Transceiver 80 Watts                                                              | \$919    | <b>\$759</b>   |
| IC251A                                           | Icom 2M Multi-Mode Transceiver AC/DC (in-built power supply)                                      | \$881    | <b>\$750</b>   |
| IC451                                            | Icom 70CM Multi-Mode Transceiver AC/DC (in-built power supply)                                    | \$1,113  | <b>\$890</b>   |
| IC560                                            | Icom Mobile Transceiver, 6M, SSB/FM, 10W                                                          | \$643    | <b>\$487</b>   |
| IC2KL                                            | Icom Solid-State 1K Linear Amp for IC701, IC720A and IC730                                        | \$1,793  | <b>\$1,590</b> |
| Mobile Systems                                   |                                                                                                   | Normally | Now            |
| IC730                                            | Icom HF Multi-Mode Transceiver                                                                    | \$1,021  | <b>\$850</b>   |
| IC490A                                           | Icom UHF SSB/FM Mobile Transceiver                                                                | \$726    | <b>\$660</b>   |
| IC560                                            | Icom Mobile Transceiver, 6M, SSB/FM, 10W                                                          | \$643    | <b>\$493</b>   |
| IC25A                                            | Icom 2M FM Mobile Transceiver, 25 Watts                                                           | \$456    | <b>\$343</b>   |
| IC290                                            | Icom 2M Transceiver FM/SSB/CW Mobile                                                              | \$674    | <b>\$590</b>   |
| Accessories for Mobile Systems and Base Stations |                                                                                                   |          | Now            |
| IC-AT100                                         | Icom Auto HF Antenna Tuner 200W PEP                                                               |          | <b>\$415</b>   |
| IC-AT500                                         | Icom Auto HF Antenna Tuner 1KW PEP                                                                |          | <b>\$570</b>   |
| IC-PS15                                          | Icom Power Supply (15 Amps) for IC720, IC720A, IC730                                              |          | <b>\$189</b>   |
| IC-HP1                                           | Icom Matching Headphones                                                                          |          | <b>\$40</b>    |
| ICHM10                                           | Icom Up/Down Scan Mic for IC730, IC451                                                            |          | <b>\$51</b>    |
| ICSM5                                            | Icom Desk Microphone for all 8-pin Icom Rigs                                                      |          | <b>\$58</b>    |
| FL32                                             | Icom CW Filter IC720A                                                                             |          | <b>\$57</b>    |
| IC-EX205                                         | Icom Transverter Adapter Unit for IC730                                                           |          | <b>\$23</b>    |
| IC-FL44                                          | Icom SSB 455KHz Filter IC730/740A                                                                 |          | <b>\$109</b>   |
| IC-FL45                                          | Icom CW (M) Filter 9MHz IC730/740A                                                                |          | <b>\$67</b>    |
| IC-FL30                                          | Icom SSB PBT Filter IC730                                                                         |          | <b>\$48</b>    |
| ICAH1                                            | Icom Multi-Band Mobile Antenna (Requires IC-EX202)                                                |          | <b>\$322</b>   |
| IC-EX202                                         | Icom LDA Unit for IC730                                                                           |          | <b>\$23</b>    |
| IC-FL30                                          | Icom SSB PBT Crystal Filter for IC730                                                             |          |                |
| IC-MB5                                           | Icom Mobile Mount for IC720A/730/551                                                              |          | <b>\$24</b>    |
| IC-EX182                                         | LDA Unit for IC720                                                                                |          | <b>\$28</b>    |
| ICPS20                                           | Icom Power Supply (20 Amps) for IC551D With PS20/Cable can also be used with IC720, IC730, IC740A |          | <b>\$255</b>   |
| Portable Systems                                 |                                                                                                   | Normally | Now            |
| IC2A                                             | Icom 2M FM Handheld Transceiver                                                                   | \$326    | <b>\$270</b>   |
| IC4E                                             | Icom 70CM FM Handheld Transceiver                                                                 | \$349    | <b>\$295</b>   |
| IC502A                                           | Icom 6M 3W SSB/CW Portable Transceiver (2 only)                                                   | \$294    | <b>\$223</b>   |
| Accessories for Portable Systems                 |                                                                                                   |          | Now            |
| ICBP3                                            | Icom IC2A Standard Nicad Pack                                                                     |          | <b>\$35</b>    |
| ICBP4                                            | Icom Battery Case (Dry Cells)                                                                     |          | <b>\$14</b>    |
| ICBP5                                            | Icom Nicad Pack for 2-3 Watts Output                                                              |          | <b>\$66</b>    |
| ICCP1                                            | Icom Vehicle Charging Lead                                                                        |          | <b>\$8.50</b>  |
| ICDC1                                            | Icom DC Converter                                                                                 |          | <b>\$17</b>    |
| ICHM9                                            | Icom Speaker/Mic                                                                                  |          | <b>\$28</b>    |
| ICLC3                                            | Icom Case Cover                                                                                   |          | <b>\$10</b>    |
| ICBC30                                           | Icom Quick Charge Unit                                                                            |          | <b>\$77</b>    |
| ICML1                                            | Icom 2M Linear Amp 2W 1W 10W Output (IC2A only)                                                   |          | <b>\$112</b>   |
| ICFA2                                            | Rubber Antenna (IC2A only)                                                                        |          | <b>\$15</b>    |

| Jostykit - 50% off!!           |                                                   | Normally | Now             |
|--------------------------------|---------------------------------------------------|----------|-----------------|
| AT320                          | Jostykit AC/DC Relay Amplifier                    | \$47     | <b>\$23.50</b>  |
| AT347                          | Jostykit Electronic Roulette Kit                  | \$62     | <b>\$31</b>     |
| AT357                          | Touch Dimmer                                      | \$35     | <b>\$17.50</b>  |
| JK08                           | Jostykit Light Relay for 240V AC                  | \$24     | <b>\$12</b>     |
| HF385                          | Jostykit VHF/UHF Preamp                           | \$34     | <b>\$17</b>     |
| JK01                           | Jostykit General purpose Amp. 0.5W                | \$22     | <b>\$11</b>     |
| AT468                          | Jostykit 4-Channel Light Show                     | \$85     | <b>\$42.50</b>  |
| AT465                          | Jostykit 3-Channel Light Show 02                  | \$76     | <b>\$32</b>     |
| JK02                           | Jostykit Microphone Amplifier                     | \$20     | <b>\$10</b>     |
| AT356                          | Jostykit 6 Amp AC Regulator                       | \$31     | <b>\$15.50</b>  |
| SWR/PWR Meters                 |                                                   |          | Now             |
| CN510                          | Daiwa SWR/PWR Met. 1.8-60MHz 20/200W              |          | <b>\$71</b>     |
| CN520                          | Daiwa X-needle SWR/PWR Met. 1.9-60MHz             |          | <b>\$71</b>     |
| CN540                          | Daiwa X-needle SWR/PWR Met. 50-150MHz             |          | <b>\$81</b>     |
| CN550                          | Daiwa X-needle SWR/PWR Met. 144-250MHz            |          | <b>\$101.50</b> |
| CN620A                         | Daiwa X-needle SWR/PWR Met. 1.8-150MHz            |          | <b>\$102</b>    |
| CN630                          | Daiwa X-needle SWR/PWR Met. 140-450MHz            |          | <b>\$153</b>    |
| CN630N                         | Daiwa X-needle SWR/PWR Meter 140-450MHz "N" Conn. |          | <b>\$173</b>    |
| CN650                          | Daiwa X-needle SWR/PWR Met. 1.2-2.5MHz            |          | <b>\$200</b>    |
| CN720                          | Daiwa X-needle SWR/PWR Met. 1.8-150MHz            |          | <b>\$175</b>    |
| CNA1001                        | Daiwa Automatic Antenna Tuner 200W                |          | <b>\$298</b>    |
| CNA2002                        | Daiwa Auto Antenna Tuner 2.5Kw                    |          | <b>\$424</b>    |
| CNW218                         | Daiwa Antenna Tuner incl. SWR/PWR Meter           |          | <b>\$177</b>    |
| CNW418                         | Daiwa Antenna Tuner - HF Bands                    |          | <b>\$215</b>    |
| CNW518                         | Daiwa Antenna Tuner 2.5Kw PEP                     |          | <b>\$348</b>    |
| Rotators                       |                                                   |          | Now             |
| DR7500R                        | Daiwa Ant. Rotator, Medium Duty                   |          | <b>\$234</b>    |
| DR7500X                        | Daiwa Ant. Rotator, Medium Duty, Pre-set          |          | <b>\$224</b>    |
| DR7600R                        | Daiwa Ant. Rotator, Heavy Duty                    |          | <b>\$326</b>    |
| DR7600X                        | Daiwa Ant. Rotator, Heavy Duty, Pre-set           |          | <b>\$306</b>    |
| PS-300                         | Daiwa Power Supply 22A, 9-15V X-needle            |          | <b>\$326</b>    |
| PS-106A                        | Daiwa Power Supply 13.8V 10 Amps                  |          | <b>\$230</b>    |
| Cable/Rot                      | Daiwa Rotator Cable, 6 core, 200M reels           |          | <b>\$1.35</b>   |
| Cable/Rot1                     | Daiwa Rotator Cable, 6 core, 100M reels           |          | <b>\$1.35</b>   |
| Linear Amplifiers              |                                                   |          | Now             |
| LA2030A                        | Daiwa Linear Amp. .3/30W 146MHz                   |          | <b>\$101.50</b> |
| LA2035                         | Daiwa Linear Amp. 2M FWSB/CW 3/30W                |          | <b>\$81</b>     |
| LA4015A                        | Daiwa Linear Amp. .15/15W 430-450MHz FM           |          | <b>\$32</b>     |
| Leader Equipment               |                                                   | Normally | Now             |
| LSG16                          | Leader Signal Generator 100KHz-100MHz             | \$173    | <b>\$89</b>     |
| LAG26                          | Leader Audio Generator 20Hz-200KHz                | \$207    | <b>\$132</b>    |
| Coming soon                    |                                                   |          |                 |
| IC45A                          | Icom 25W UHF FM Mobile Transceiver                |          |                 |
| Super specials on new products |                                                   | Normally | Now             |
| ICR70                          | Icom General Coverage Receiver                    | \$999    | <b>\$795</b>    |
| IC740A                         | Icom HF Transceiver                               | \$1277   | <b>\$999</b>    |



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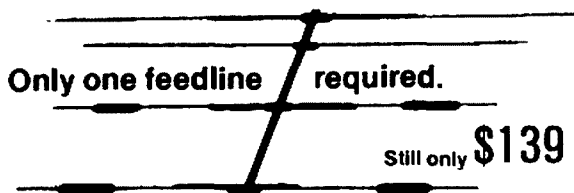
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Prices subject to change without notice and are recommended retail prices only. In some locations a charge may be made to cover freight costs. All stock available at date of compilation.

# CHIRNSIDE ANTENNAS

Why not step up to a high performance Duo-band Yagi, the CE-42, 10-15M.

Solid construction. 8.5 DB gain, 25 DB F/B ratio. Electric band switching means only 1 run of coax is required! This alone could save you up to \$50 (not to mention the cost of an additional coax switch) . . . The use of traps combined with independant reflectors provide top DX performance for the DX enthusiast . . . Excellent value for only \$139.



Still only **\$139**

The CE-52 is also available, which is the same as the CE-42 but on a longer boom and an extra director on 10-15M. Gain 9.5 DB . . . Very good value at only \$189.

### Electrical Specifications

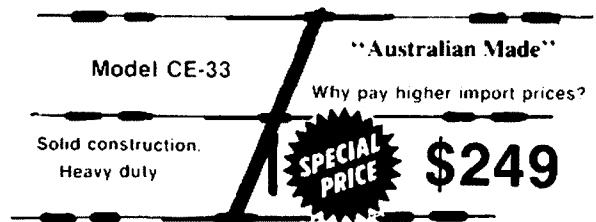
|                        |         |                                 |      |
|------------------------|---------|---------------------------------|------|
| Gain . . . . .         | 8.5DB   | F/B ratio . . . . .             | 25DB |
| Power handling . . .   | 1kW PEP | Impedance 50 ohm (at resonance) |      |
| Element Configuration. |         | Longest element . . . . .       | 7.4M |
| 3 elements on 15M.     |         | Boom length . . . . .           | 4M   |
| 3 elements on 10M.     |         |                                 |      |

Chirnside Antennas are available from various interstate dealers

**Chirnside Electronics Pty Ltd.**

26 Edwards Road, Chirnside Park, Lilydale 3116 Phone (03) 726 7353

For that **BIG** signal  
step up to a  
**CHIRNSIDE ANTENNA**



For maximum performance in a compact tri-band beam step up to a CE-33. Three elements on a 4.5 metre boom. Operates 3 elements on 20M, 15M, 10M.

### Specifications:

|               |                     |
|---------------|---------------------|
| Gain          | up to 8DB           |
| F.B. ratio    | up to 25DB          |
| Max power     | up to 2 KW PEP      |
| SWR           | 1.5 1 or less       |
| Impedance     | 50 ohm at resonance |
| Weight packed | 20 Kg.              |

Available direct from our Mail Order Department  
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# ★ BRIGHT STAR CRYSTALS

*Specifications, Dimensions and data sheets available on request*

**BULK ORDERS:** In addition to our normal range we can supply quantity orders (100 up) at very competitive prices. All we ask is 50% of cost with order balance 30 days.

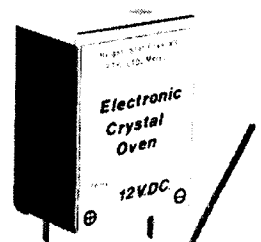
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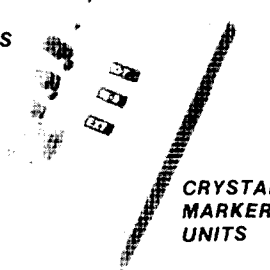
## BRIGHT STAR CRYSTALS

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CRYSTAL OVENS



WATCH CRYSTALS  
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FOR QUARTZ  
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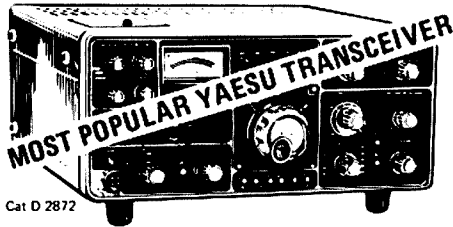
CRYSTAL MARKER UNITS



I MUST CLEAR THIS STOCK BEFORE XMAS - NEW PRODUCTS COMING - YOU REAP THE BENEFIT!



## FT101Z FM



Cat. D-2872

### SPECIFICATIONS:

Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 and 10m. Modes of operation: FM, LSB, USB, CW, AM. Input Power: 180W DC (SSB/CW) 50W DC (AM). Sensitivity: 0.25uV for 10dB S/N (SSB/CW) 0.4uV (AM). Selectivity: 2.4kHz (-6dB) 4.0kHz (-60dB). Carrier Suppression: better than 40dB. Spurious Radiation: better than 40dB below rated output. Operating Voltage: 100-240V AC (13.5V with optional conv.). Antenna output impedance: 50-75 ohms, unbalanced

~~\$885~~ **\$825**

## DC-DC INVERTER

Want to go mobile? Add this superb DC/DC inverter to your 101Z and run it from your car battery. (13.5V normal). Don't tie yourself to your shack and the 240 volts mains: get out to where the air is clean (and the DX is great!) Cat. D-2864

~~\$77~~ **\$55**

## DC POWER CABLE ONLY

**\$5.001 SD2231**

with the purchase of the above inverter (Cat. D-2864)

(Usually \$22.00!)

## DIGITAL DISPLAY (Optional)

Want a digital display but you can't afford it? Buy the FT-101Z, then later on when you can afford it, buy the digital display and fix it yourself. It's so easy! Cat. D-2861

~~\$142.50~~ **\$99**

## ABOVE DISPLAY ONLY \$10!!!

if purchased with FT101Z FM (Cat. D-2872) or FT101Z (Cat. D-2862)

## YAESU FAN

If your 'rag chews' get a little long, give your FT 101Z a break by installing a cooling fan. Comes with all fittings, 110V operated (runs from a tap on the transformer). Now reduced in price too! Cat. D-2865

**ONLY \$19<sup>95</sup>**

**FT101Z** HF - WARC - TX **\$849** **\$749**  
Cat. D-2862

**FT101ZD** HF - WARC - TX WITH DIGITAL READOUT **\$910** **\$795**  
Cat. D-2859

## 902 SERIES FT902D



Cat. D-2853

### SPECIFICATIONS

Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 & 10m. Modes of operation: LSB, USB, AM, CW, FSK, FM. Input power: 180W (SSB), 180W DC (CW), 80W DC (AM). Sensitivity: (0.25uV for 10dB S/N (SSB)) Selectivity: 2.4kHz (-6dB), 4kHz (-60dB), SSB. Carrier suppression: better than 40dB. Spurious radiation: better than 40dB below rated output. Power requirements: 240V (13.5V with optional conv.). Antenna output impedance: 50-75 ohms unbal.

~~\$1195~~ **\$950**

## ANTENNA COUPLER



Cat. D-2855

This coupler can feed anything from a random length of wire to a beam. Match the load perfectly so you can deliver more power up there where it's wanted! Suits all bands, has built-in SWR/power meter as well. 50 or 75 ohm system. 500 watt rating.

~~\$265~~ **\$195**

## MEMORY UNIT

You can get even more use and pleasure from your 902 with the optional memory unit. Instant recall of often used frequencies, repeaters, etc. Cat. D-2858

~~\$139.50~~ **\$99** ~~\$69~~ **\$49**

## FT901D

Cat. D-2854

### SPECIFICATIONS

Frequency coverage: 160, 80, 40, 20, 15, 10m. Input Power: 180W (SSB), 180W DC (CW), 80W DC (AM). Sensitivity: (0.25uV for 10dB S/N (SSB)) Power requirements: 240V

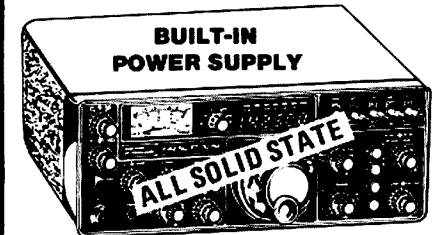
~~\$1875~~ **\$875**

## NOVICE STUDY COURSE

Complete course includes Novice theory handbook, DOC Amateur operators handbook, morse code instruction cassette tape, complete list of licensing & regulatory sections of DOC, sample of exam application form.

Cat. D-7107 **\$16<sup>95</sup>**

## FT107 SERIES



## FT107M/DMS

### SPECIFICATIONS

Frequency coverage: 160, 80, 40, 30, 20, 17, 15, 12 & 10. Modes of operation: LSB, USB, CW, AM, FSK. Input power: 240W DC (SSB), 80W DC (AM, FSK). Sensitivity: 0.25uV for 10dB S/N (SSB, CW, FSK), 1uV (AM). Selectivity: 2.4kHz (-6dB), 4kHz (-60dB) SSB cont. variable from 300 to 2400 Hz. Carrier suppressor: Better than 40dB. Spurious radiation: better than 50dB below rated output. Power requirements: 240V & 13.5V supplies are built in. Antenna output impedance: 50 ohms unbal.

\*Can be modified for novice use Cat. D-2871

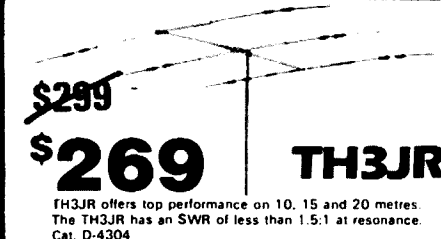
NOTHING MORE TO BUY. Remember, the FT 107 comes ALREADY EQUIPPED with memory unit, AC & DC power supplies, etc. You don't have to spend another cent!

~~\$1328~~ **\$999**



No problems with antenna mis match on your FT-107: not with this superb coupler. Designed to match the styling of the FT-107, but also just at home with any transceiver. Huge meters for power output & SWR. Cat. D-2873

~~\$205~~ **\$185**



TH3JR offers top performance on 10, 15 and 20 metres. The TH3JR has an SWR of less than 1.5:1 at resonance. Cat. D-4304

## XTAL FILTER SPECIAL

901/902 - 107 - 707 - 101Z Series **\$24 ea**  
CWN (SD0418), CW (SD0417), AM (SD0416)

**YOU WON'T BELIEVE THESE PRICES!!!**

# 2 METRE BARGAINS!

**FT-480R** Yaesu's top 2 metre rig: FM, CW & SSB!



~~\$589~~ **\$445**

Yaesu call this their 'total performance VHF computerized transceiver'. And total performance it is! As the top-of-the-line Yaesu 2 metre family, you expect a lot. You get it. FM, SSB & CW over the full 2 metre band with two VFO's which may be used for unusual repeater splits, four memory channels, scanning, 100Hz resolution on the digital frequency readout, a SAT switch to make satellite operation easy (with an external receiver), a receiver clarifier, a h/lo power switch (30W PEP max), an effective noise blanker, tone burst, priority channels, optical selector coupling... If you want the best, you want Yaesu. If you want the best 2 metre Yaesu, you want the FT-480R! As they say 'Magnifique' Cat D-2887

## MMB8

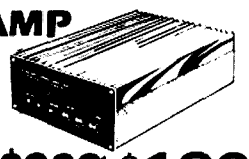
Makes mobile mounting of the FT480 a breeze. Why put up with a jury rig when you can get the correct mount at this price? SD1335

~~\$21~~ **\$10**  
SAVE \$11



## FL2050 2 metre LINEAR AMP

**SPECIFICATIONS**  
Frequency range: 143.5 MHz - 148.5 MHz  
Mode: A1, A3J, A3, F3  
Input impedance: 50 ohms unbalanced  
Output impedance: 50 ohms unbalanced  
Power output: 70 W



~~\$239~~ **\$189**

## \$358 FT-207R

with 10kHz steps  
**PRICE INCLUDES NICAD BATTERY PACK AND CHARGER (Cat. M-9517)**

~~\$358~~ **\$235**

Imagine a hand-held 2 metre transceiver with all the punch of the big guns - with digital display, 800 channels, 4-bit CPU chip for frequency control, 4 memory channels, repeater splits, auto scan up or down, weighing just 680g. You're imagining the unbelievable Yaesu FT-207R! How does it perform? How about 0.32uV sensitivity or 7.5kHz selectivity (-60dB), or a power output of 2.5W (min). If you've always wanted a 2 metre rig you can throw into a bag to take on holidays, this is it! But a word of warning - don't pick one of these up. You may never want to put it down again! Cat D-2888

## SPECIAL OFFER!

**FT-207R & PA2 FOR AN AMAZING \$246<sup>50</sup>**

## DICK SMITH NOVICE RADIO



**SS105S HF all mode transceiver**  
Frequency coverage: 80, 40, 30, 20, 17, 15, 12, 10 M  
Mode of operation: USB, LSB, CW, FM\*  
Output power: 10 watts (with L100H\*) 100 WATTS\*  
Spurious emission: better than -40dB  
Image ratio: better than -50dB  
Receiver Sensitivity: SSB-better than .25uv for 10dB S/N  
FM-better than .5uv for 10dB S/N  
Power required: 13.5 V DC 4amps(20 amps with L100H\*)  
Weight: 5KG Size: 124x178x272 mm  
\*option

~~\$549~~ **\$549**

## PA 2 MOBILE SUPPLY

Run your FT207 while mobile - includes 10 BV supply with special holding cradle.

~~\$15<sup>95</sup>~~ **\$15<sup>95</sup>**  
Cat. D-2894

## IMPORTANT NOTE!

*These prices will never be repeated and stock is limited. If you cannot obtain any item, ring Jim Powell in Sydney for help. (02) 888 3200*

## FT-720RVH



~~\$450~~ **\$345**

## FREE EXTENDER CABLE E72L

When you purchase an FT720RVH. The E72L allows you to split the 720 in two: great for compact installation! SD2120 WORTH \$22.00!!!  
**WHILE THEY LAST!**

Yaesu brings you the flexibility and performance you need in today's amateur world. The FT-720RVH not only gives you top performance, it's also the most flexible Yaesu. It comes apart - so you can locate the microprocessor-controlled works close by you, with the RF end out of the way. Or, just as easily, snap the two sections back together again for a complete transceiver. That's versatility! But nothing is spared in performance. PLL circuitry for maximum stability, scanning, five memory channels, LED P.O./S meter, 25 W output, and full 144-148MHz operation. A superb transceiver, designed specifically for today's small cars which simply don't have much room to spare! Cat D-2890

## MMB3 GREAT VALUE!

Mobile Mounting Bracket for FT 720 RVH SD2119 **\$10<sup>20</sup>**

## NEW NEW NEW Dick Smith Amateur Radio Log Program

Dick Smith has taken the tedium out of maintaining your log in Australia for System 80 and TRS-80 Mod I/III computers. This disk based program provides for up to 500 individuals, logentries to be maintained. Supplied with Users Manual. Cat X-3774 **\$36<sup>50</sup>**

## MOBILE BRACKET MMB2

Don't let your valuable 707 jump around the car. fit it in a mobile mounting bracket for safety and security. Also holds the digital VFO. A must for the serious mobile operator. Cat D-2897 **\$22<sup>95</sup>**

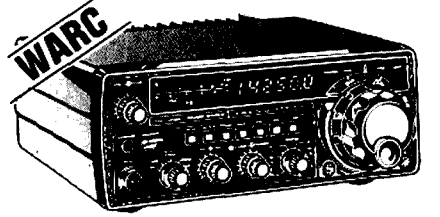
## DIGITAL VFO FV707DM

~~\$36~~ **\$22<sup>95</sup>**  
Long n Slim - intended to sit under the 707 12 memories. up/down scanning in 10Hz steps and receiver offset tuning. Powered by FT-707. Cat D-2896 **\$245**

## MR7 RACK FOR FT707

~~\$299.50~~ **\$245**  
SD1019 **\$26**

## FT707 SERIES



What a performer packed into such a tiny package! The FT707 is one of our fastest sellers, and no wonder. It's a full power all HF band (including WARC) multi mode transceiver not much bigger than an average 2 metre mobile! And you get digital display as well, LEO S/power meter, push button operation... all the things the amateur needs for safe and yet reliable mobile operation. But it's more than that: team it up with a FP-707 supply below and it's a superb base station, too. We've waited a long time for a rig like this. Yaesu brought it to you, of course! Cat D-2869

**SPECIFICATIONS**  
Frequency coverage: 80, 40, 30, 20, 17, 15, 12 & 10m  
Modes of operation: AM, USB, LSB & CW  
Power input: 240W DC SSB, 80W AM\*  
Sensitivity: 0.25uV for 10dB S/N (SSB), 1uV for 10dB (AM)  
Selectivity: 2.4kHz (16dB), 4kHz (60dB) SSB, 3.6kHz (6dB) & 3kHz (-60dB) AM  
Image rejection: 60dB (80-12m), 50dB (10m)  
Carrier suppression: better than 40dB  
Spurious emissions: at least 50dB down  
Power requirements: 13.5 V DC @ 20A (240V AC with FP 707)  
Antenna impedance: 50 ohms

~~\$795~~ **\$765**

## AMAZING SCOOP PURCHASE FP107E (Grey) BASE STATION SUPPLY (FT107 Accessory)

**NEW**  
Great for the Base Station FT107, at 20 amps Plug in connections fully regulated 13.5v PLUS an extra large speaker! Cat: D-2871 **\$139<sup>50</sup>**

## ANTENNA COUPLER



Get the most from your FT 707: use the Yaesu FC 707 antenna coupler and ensure your transceiver always delivers the power it should. Slim styling suits the FT 707 style, with all the features you need: large power/SWR meter, inbuilt dummy load, all band coverage (including WARC), less than 0.5dB insertion loss (you more than make up for that because of a better match!) Cat D-2875 **\$157.50**

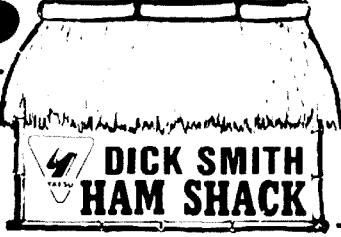
~~\$157.50~~ **\$139**



Prices correct and stock available at time of printing. Valid 1 NOV 82 to 1 JAN 83

Terms available to approved applicants through... **HFC**

The stores at right stock this complete list of Dick Smith Amateur Radio equipment. All other Dick Smith stores stock some amateur equipment, but may not be able to give you the service of 'Ham Shack' stores listed.



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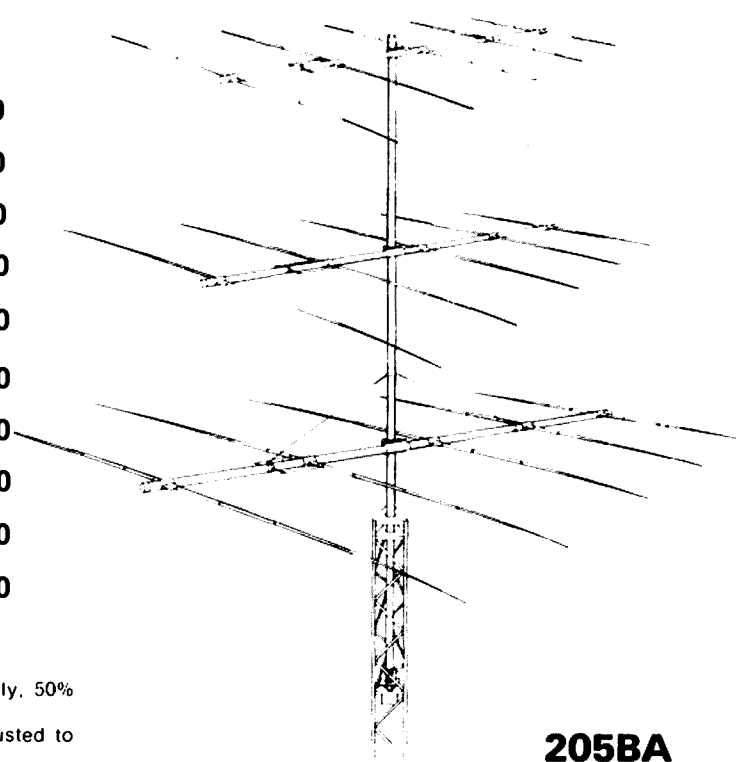
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# Andrews Communications Systems

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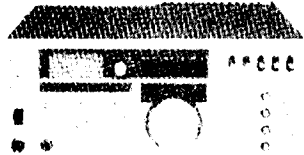
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**\$950**

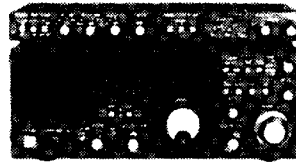
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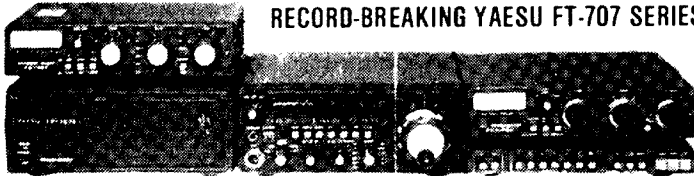


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YAESU

**FT-707**

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12 MONTHS WARRANTY

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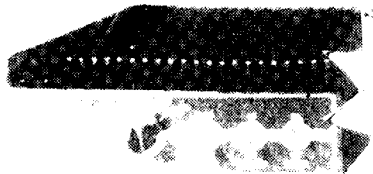
FT-707S, 10W ..... **\$595**  
\*FC-707 Tuner ..... **\$125**  
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FV-707DM D/G Vfo .. **\$269**

\* Lower rate of Customs Duty now.

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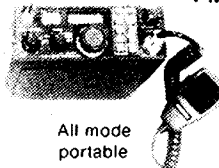
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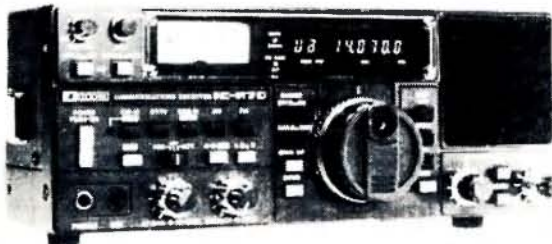
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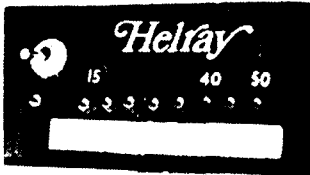
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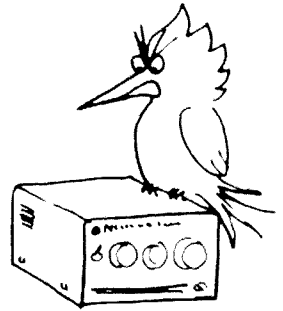
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VK3.5.6.7.8 Graeme Scott VK3ZR  
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\*\*Dealer enquiries welcome \*\*Discounts to clubs and schools \*\*Stock-up for study and 1983 club and school courses.

COUPON  
QTY.

|                          |                          |
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| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
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\$ enclosed.

NAME

ADDRESS

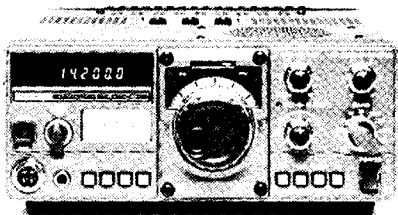
POSTCODE

\*\*\* KENWOOD SUMMER SIZZLERS \*\*\*

Now is the time to get yourself set up for Christmas and next year.

MOBILE

TS-130SE, FA-4, DFC-230, AT-130, MB-100.  
Now only \$950.00. Usually \$1,162.00.



**FA-4**

Fan Unit (for TS-130SE)  
Power Source: From TS-130SE  
Dimensions: 150.5 (6.0)W x 89.5 (3.6) mm (inch)  
Weight: 170g (0.37 lbs.)



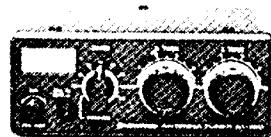
**DFC-230**

Digital Frequency Controller.



**AT-130**

Antenna Tuner.

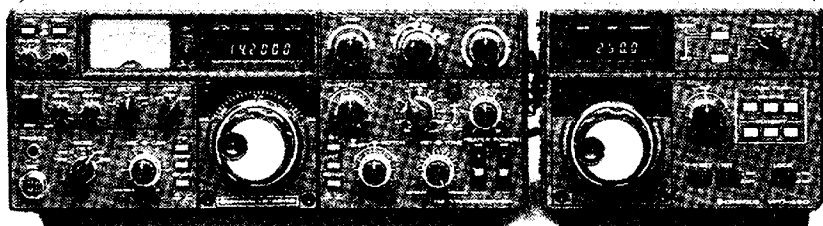


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(INCORPORATED IN N.S.W.)

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Ph. (02) 428 1455  
Inc. Authorised Dealers

TS-830S

Grab one of these hot specials. HF transceiver, all amateur bands from 160 to 10 metres. Valve finals and inbuilt power supply. Usually \$1043.00 but as a Christmas present to you, Kenwood will give you a VFO-230 remote digital frequency control for \$200.00. A total TS-830S/VFO-230 package \$1200.00. You will save \$219.00.  
Be quick for this offer — stocks are limited.



● LF-30A  
HF Low Pass Filter



\$40.00  
Save \$4.00

TS-830M AM Model

Same deal as above but AM facility for an additional \$30.00. Total price — \$1230.00. A saving of \$235.00 off market price.

## VHF BUFFS

TS-660



Including PS-20 Power Supply and SP-100 Speaker.  
Now only \$660.00. Usually priced over \$900.00.



VERTICAL ANTENNA  
(for TS-660)

**HA-3**

Frequency range 21-21.5, 24.5-25, 26-30, 50-54 MHz.  
10 Watts.

---

### TR-7730 2 Metre FM Economy PLUS +

\$129.00. Save \$20.00.

Small, compact, ideal for little spaces in little cars. But they are big on features, performance and reliability. Only \$350.00 complete with mobile 2 metre high gain aerial, base and 12 foot lead worth \$25.00. A saving of \$45.00.



---

### TR-7850 2 Metre FM

The BIG 45 Watt mobile with memories to burn — 15 of them in fact. Band scan, memory scan, etc. Unit was \$493.00. Now as a special \$420.00 complete with mobile high gain aerial, base and 12 foot lead.

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---

### TR-7800 2 Metre FM

Economical 25 watts. Draws only 8 amps. Same features as above TR-7850. Unit was \$452.00. Now only \$399.00 complete with mobile high gain aerial, base and 12 foot lead.

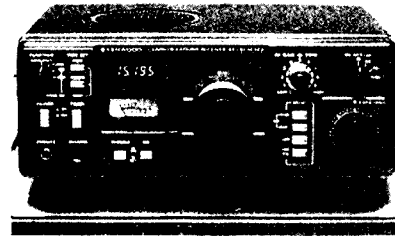
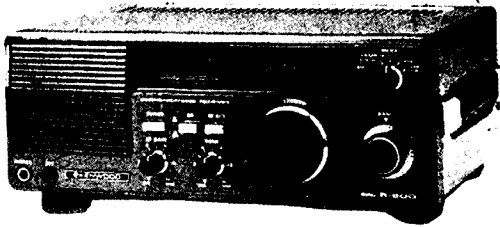
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### TS-600 6 Metre All Mode Base Transceiver

3 only at \$399.00 complete with SP-70.

## R-600

Best value general coverage communications receiver, over 21,000 Km range. Digital readout. Special offer — \$365.00 includes free set of HS-4 headphones valued at over \$27.00. Usual price — \$413.00. Now only \$365.00. Save \$48.00.

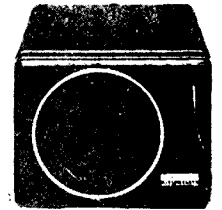


• HS-4 (8 Ω)  
Headphones)



## R-1000

Grab one of these top quality radios used by government departments and similar organisations. Limited stock. \$494.00 includes free SP-100 and HS-4 headphones. Usual price — \$594.00. Value plus at a saving of \$100.00. Hurry!! Hurry!!



## VFO-700S

Suitable for TS-700SP and TS-700A. A steal at \$70.00. Usually \$100.00.

## TR-9500 UHF Multimode

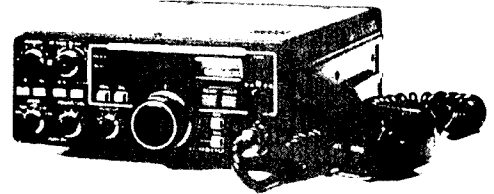
Open up the 70cm band in a big way — with KENWOOD. Save a bundle on this model at only \$650.00 complete with mobile UHF high gain aerial, base and 12 foot lead. A saving of \$87.00.

## STATION MONITOR

Based on a wide frequency range oscilloscope (up to 10 MHz), the model SM-220 station monitor features, in combination with a built-in two-tone generator, a wide variety of waveform observing capabilities. An optional feature is a unique pan-display capability.

# SM-220

\$330.00  
Save \$40.00



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WASSSELL ELECTRICAL — 10 McNAMARA STREET, ORANGE (063) 62 6249  
STOCKMAN & HIGGINS — BYRON STREET, INVERHELL (067) 22 1300  
ELECTRON 2000 — SHOP 18 HUNTER SHOPPING VILLAGE, HUNTER ST, NEWCASTLE (049) 26 2644  
MACELEC PTY LTD — 99 KENNY STREET, WOLLONGONG (042) 29 1455  
RADIO WORLD PTY LTD — 81 NEWCASTLE STREET, Fyshwick (062) 80 6550  
DX ENGINEERING — 5 JASMINE STREET, PORT MACQUARIE (065) 83 2127  
LAND LINK — MULLALEY ROAD, GUNNDAH (067) 42 2838  
LAND LINK — 61 BARNES STREET, TAMWORTH (067) 65 4622

### INTER-STATE

VIC. EASTERN COMMUNICATIONS — 126 ELEGANT ROAD, BOX HILL (03) 288 3107  
BRIAN STARES — 11 MALMSBURY STREET, BA. ARAT (053) 39 2505  
SUMNER ELECTRONICS — 78 KING STREET, BRNO (03) 354143 197  
COOLIN ELECTRONICS — MEE (051) 27 4516

TAS. HOBBY ELECTRONICS — 83 CARELLA STREET, HOWRAH, HOBART (002) 47 6574  
GELSTON ELECTRONICS — 40 LAVENDER GROVE, SUMMER HILL (03) 44 3862  
ADVANCED ELECTRONICS — 54 THE QUADRANT, LAUNCESTON (083) 41 7075  
VK ELECTRONICS — 57 WEST PARK GROVE, BURNIE (004) 31 1705

QLD. MITCHELL RADIO CO — 59 ALBION ROAD, ALBION (07) 57 6830  
S.A. & N.T. INTERNATIONAL COMMUNICATIONS SYSTEMS PTY LTD — 4 NEE ST, PORT ADELAIDE (08) 47 3688  
W.A. ARENA COMMUNICATIONS SERVICES — 642 ALBANY HWY, EAST VICTORIA PARK (09) 361 5422  
TRI-SALES — CNR NEWCASTLE & CHARLES STREETS, PERTH (09) 525 4760  
WILLIS ELECTRONICS — 73 STERLING STREET, PERTH (09) 428 9229  
GRAHAM ROGERS — 18 BANKSIA STREET, RUNBURY (097) 21 2236  
RON DENT — 115 PATON ROAD, SOUTH HEDLAND (091) 72 1112

TR-7950 2 Metre VHF FM

Brand new first shipment. Nothing is sacred. \$480.00 complete with 2 metre mobile VHF aerial, base and 12 foot lead. A genuine value with a saving of \$25.00.

**KENWOOD**



- SC-4  
Soft Case with Belt  
Hook (for TR-2500)



Microphone Adaptors  
Suit all Kenwood Models

| Equip. | Mic.  | Model |
|--------|-------|-------|
| 4 pin  | 6 pin | MJ-64 |
| 4 pin  | 8 pin | MJ-84 |
| 6 pin  | 4 pin | MJ-46 |
| 6 pin  | 8 pin | MJ-86 |
| 8 pin  | 4 pin | MJ-48 |
| 8 pin  | 6 pin | MJ-68 |

Only \$12.00 each

Either model only \$329.00 including  
SC-4 Soft Case. Incredible value —  
Usually \$382.00. A big saving of \$53.00.

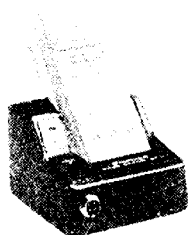


- BT-1  
AA Manganese  
Battery Case

BT-1 Battery Box  
for TR-2500.  
\$15.00.

**ST-1**

AC-DC BASE STAND  
(for TR-2400)



TR-2400 OWNERS

**ST-1**  
Base Station Chargers only \$39.00 plus \$3.00 packing and postage.

SC-3 — Soft Case \$20.00  
SMC-24 — Speaker Mics. \$25.00

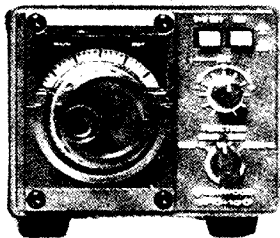
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## REMOTE VFO

VFO-120 to suit TS-120/130/530/830  
Special deal will save you \$20.00. Reduced from  
\$184.00 to \$164.00 for offer period.



VFO-180 Clearance —  
\$60.00 — Save \$100.00.

VFO-240  
Remote VFO



VFO-240 to suit TS-120/130/530/830

Same as above but larger and color styled for the TS-830/530 series. Reduced from \$159.00 to \$149.00.

---

## ROTATORS

KR-400. Complete with top and bottom mast clamps plus 16 metres of 6 wire control cable. Usually sells for \$180.00, now only \$145.00.

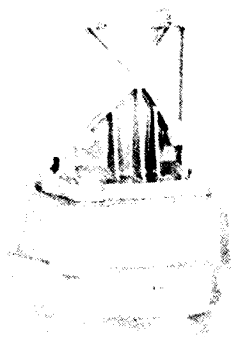
KR-600RC. Complete with above fittings and cable. Reduced to \$240.00 from \$280.00.

KR-250. Light duty for TV and FM aerials. Complete with top and bottom clamps and 16 metres of cable. Value — \$120.00, now only \$100.00.

- RD-20  
RF Dummy Load (20W  
continuous)



\$25.00



36-800

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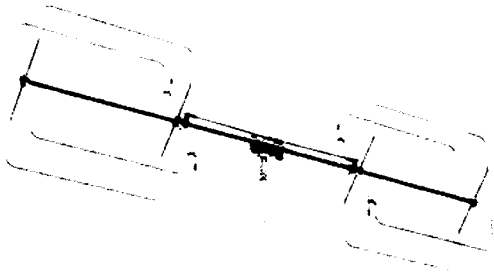


## TALKING OF ANTENNAS

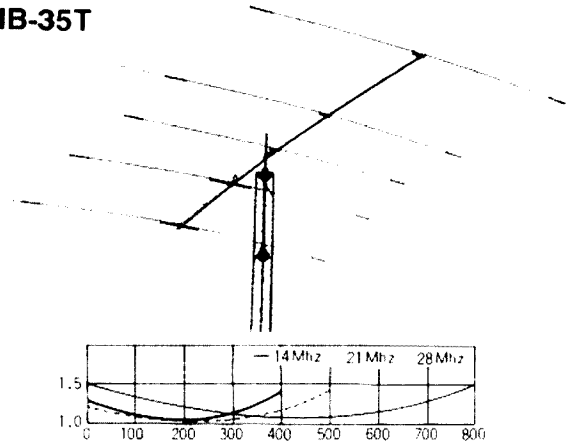
**HF Beams — Big!!** 3 elements on 20 metres, 4 elements on 15 metres, 6 metre boom — HB-35T.  
Save \$20.00 on this 12 dB gain aerial. Only \$390.00.

**HF Beam — medium** — 3 element on 20 metres, 4 element on 15 and 10, 4 metre boom — HB-34D.  
\$299.00, a saving of \$11.00.

**SQ-22**



**HB-35T**



### AERIALS

2 Metre Swiss Quads — SQ-22 — \$90.00

2 Metre DX Swiss Quads — SQ-22DX — \$180.00

## DM-81

### DIP METER

The DM-81 dip meter is intended for adjustment of radio equipment and antennas.

It is self-excited oscillator designed for external coupling to the equipment being tested.

### FEATURES

- Measurable frequency range of 700 kHz-250 MHz in seven bands
- Capacitive probe for measurements without removing coil shields
- Storage compartment for all seven dip meter coils, capacitive probe, earphone and ground clip lead
- Convenient for both indoor and outdoor measurements, all solid-state and built-in battery

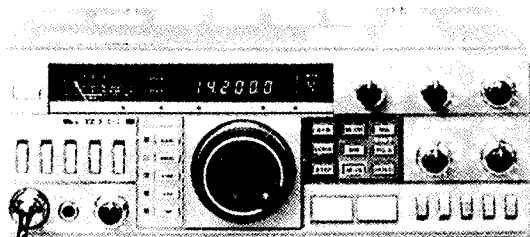
### SPECIFICATIONS

- Power requirements, battery 9V (006P)
- Power consumption 9 mA
- Dimensions: 70 (2.8)W x 180 (7.2)H x 45 (1.8)D mm (inch)
- Weight: 690g (with accessories) approx.

\$90.00 including free battery.

## KENWOOD

### TS-430S



SAVE OVER  
\$106.00 ON  
USUAL PRICES.

### ALL BAND HF TRANSCEIVER

RX — 150 kHz to 30 MHz

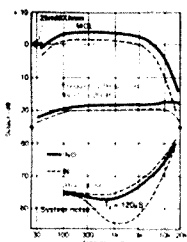
TX — 1.8 MHz to 30 MHz

8 memories, memory scan, band scan, AM-FM-CW-SSB (FM optional).

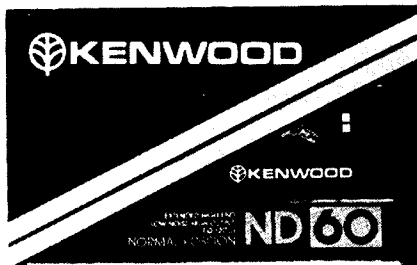
Notch, squelch (all modes), IF shift.

Introductory price \$950.00 (\$999.00 with FM module fitted).





Kenwood  
Audio Cassette  
ND-60 Tape  
\$20.60 per 10



### MAST BEARINGS

Rotate your mast from the bottom and use slip ring bearings for your guy wires.

KS-050 — \$22.00 — Save \$5.00

KS-065 — \$35.00 — Save \$5.00



KS-065



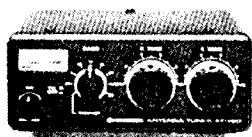
KS-050

### ANTENNA TUNERS

Don't fight with back yard home brew types!! Get the real thing — Commercially made, designed and resaleable with your Kenwood station.

#### AT-130

Antenna Tuner



AT-130 — \$99.00 — Usually \$138.00

AT-230 — \$199.00 — Usually \$217.00

#### AT-230

Antenna Tuner



### POWER SUPPLY

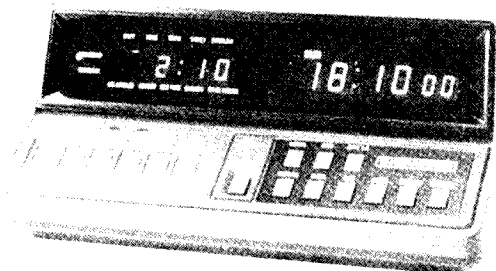
PS-10 — Designed for the TR-8400 but ideal for a bench supply.

Inbuilt speaker incorporated. Output 13.8V at 4 amps.

Usually \$113.00. Now \$99.00. Savings of \$14.00.

#### PS-10

DC power supply



The HC-10 is a highly advanced world clock with dual display which can memorize 10 major world cities and two additional regions.

This world clock incorporating a precise quartz and digital display system, as well as a built-in micro-computer, can also recall and display the starting time of OSO for logging purposes.

\$95.00  
Save \$25.00.

## RAIN CHECK POLICY

All items are available from stock at the time of preparing this catalogue. If during this offer period (10.11.82 to 31.1.83) we sell out and a firm order and deposit have been paid, the article or articles will be supplied to you at the prices shown in this catalogue. Except Models TR-7800, TR-7850, R-1000, TS-600, ST-1, SMC-24, SC-3, TR-8400 and VFO-700S.

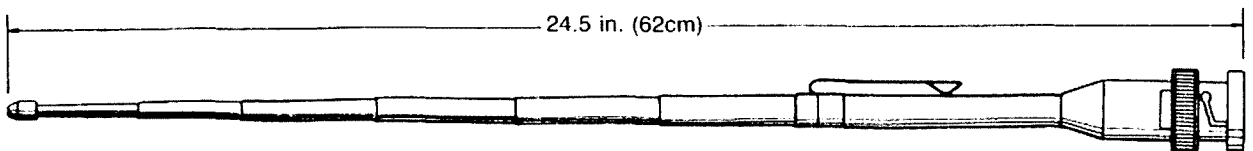
Further, all Kenwood articles imported and distributed by Kenwood Australia to the dealers listed in this catalogue are guaranteed for 12 months from date of original purchase. Beware of dealers not authorised to sell Kenwood offering dubious deals and service.

## RA-3 144 MHz BAND $3/8\lambda$ Telescoping Antenna

This antenna matches the TR-2500, TR-2400, and any other handi-talkie with  $50\Omega$  BNC-Type connector.

24.5 inch (62cm) length yields higher gain and greater efficiency than either a "rubber duck" or a  $1/4\lambda$  Telescoping Antenna.

Seven segments collapse to 5.75 in. (14.5cm) for handy shirt-pocket storage with supplied spring clip.

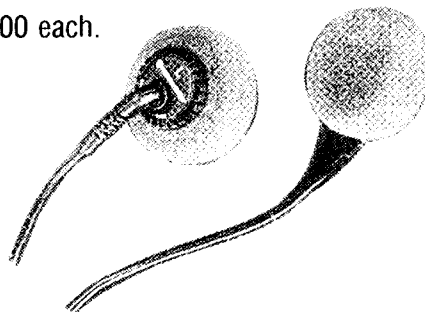


\$27.00

## KH-M5 MICRO HEADPHONES

RRP \$17.00 each.

SPECIAL PRICE TO CLUB MEMBERS \$15.00 each.



**KH-M5**  
MICRO HEADPHONES

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WASSELL ELECTRICAL — 10 MCNAMARA STREET, ORANGE (063) 62 6249  
STOCKMAN & HIGGINS — BYRON STREET, INVERELL (067) 22 1300  
ELECTRON 2000 — SHOP 18 HUNTER SHOPPING VILLAGE, HUNTER ST. NEWCASTLE (049) 26 2644  
MACELEC PTY LTD — 99 KENNY STREET, WOLLONGONG (042) 29 1455  
RADIO WORLD PTY LTD — 81 NEWCASTLE STREET, Fyshwick (062) 80 6550  
OX ENGINEERING — 5 JASMINE STREET, PORT MACQUARIE (065) 83 2127  
LAND LINK — MULLALEY ROAD, GUNNEDAH (067) 42 2838  
LAND LINK — 61 BARNES STREET, TAMWORTH (067) 65 4622

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COOLIN ELECTRONICS — MOE (051) 27 4516  
TAS: HOBBY ELECTRONICS — 83 CARELLA STREET, HOWRAH, HOBART (002) 47 6674  
GELSTON ELECTRONICS — 40 LAVENDER GROVE, SUMMER HILL (003) 44 3882  
ADVANCED ELECTRONICS — 5A THE QUADRANT, LAUNCESTON (003) 31 7075  
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WILLIS ELECTRONICS — 73 STERLING STREET, PERTH (09) 328 9229  
GRAHAM ROGERS — 18 BANKSIA STREET, BUNBURY (097) 21 2236  
RON DENT — 115 PATON ROAD, SOUTH HEDLAND (091) 72 1112

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**AMPHENOL  
17 SERIES  
DB25 PLUGS  
& SOCKETS**

Plugs \$2.45 Sockets \$1.85



as featured in

**E.T.™**

FRIEND

**\$110.00**

INCLUDES SALES TAX



**E.T. PACK INCLUDES**

- One Speak & Spell learning aid
- The new E.T. Fantasy Module
- New photo-filled activity book
- Colorful movie poster
- T-shirt decal with E.T. and Elliot

**MEMORY BARGAINS**

- HM6116P-3 (HITACHI) 2KX8 CMOSRAM \$7.50
- MB2716 (FUJITSU) 2KX8 EPROM \$3.00
- MB2764 (FUJITSU) 64K EPROM \$12.00
- MB8118 (FUJITSU) 16K DYNAMIC RAM (Intel 2118) 120ns \$4.00

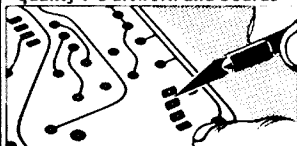
**INDUSTRY STANDARD  
BOURNS  
MODEL 3006P  
CERMET  
TRIMPOTS**

15 TURN 1.25 WATT  
ALL POPULAR VALUES

Standard Range 100 OHM-1 MEG **\$1.10 ea.**

Was \$1.60

**MAGRATH'S - THE ONLY CITY SOURCE**  
Now you can make professional quality PC artwork and boards



**E-Z CIRCUIT™**

**PRESSURE SENSITIVE DRAFTING AIDS**

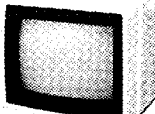
Ideal for small volume OEM users, Consultants, Breadboarders, Experimenters, Designers, Hobbyists Bishop quality in small, economical packages.

**CHRISTMAS SPECIAL  
Professional  
Video  
Monitor**

Was \$227  
**\$199**

18MHZ Video Bandwidth  
BM-12E

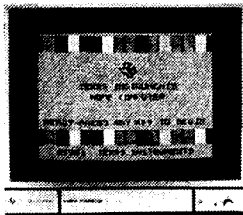
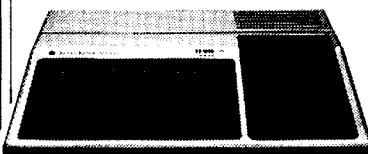
- Input Signals: Composite Video Signal Negative SYNC 1.0 P-P 75 ohm
- CRT size: 31 cm diagonal
- Green Phosphor -- P31 non glare
- Power input 230V 50Hz
- Display format: 1920 characters max. (80 characters X 24 lines)



**TI PERSONAL HOME COMPUTER**

TI-99/4A

**\$499.00** INCLUDES SALES TAX



You can buy just a video game — or you can get a full colour Home Computer

- Typewriter Keyboard
- 16K bytes RAM
- Expandable to 52K bytes RAM
- Easy to follow instructions
- Extensive range of programmes
- Educational
- Add-on expandability



**HIGH QUALITY,  
LOW COST,  
DO-IT-YOURSELF  
BOOKSHELF  
SPEAKER SYSTEM**



**AUDAX**

The Compact 200 as featured in EA, Sept 82

Speakers, Electronics Kit \$199  
Cabinets (per pair) \$99.50

**MAGRATH'S DECEMBER MONEY SAVERS SEMICONDUCTORS**

See 6 pack Specials for super prices. An asterisked products.

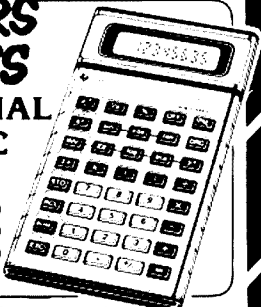
|         |     |             |        |                      |        |
|---------|-----|-------------|--------|----------------------|--------|
| 4011B   | 19c | *74LS04     | 20c    | *LM3401-5            | 51c    |
| *4016B  | 30c | *74LS14     | 40c    | *LM3401-15           | 60c    |
| 4023B   | 19c | 74LS47      | 72c    | LM386N               | 60c    |
| *4028B  | 55c | *74LS90     | 42c    | LM555                | 25c    |
| *4066B  | 44c | 74LS161     | 53c    | LM741N DIP           | 23c    |
| *4511B  | 69c | 81LS95      | 87c    | LM741 DIP            | 36c    |
| 4520B   | 74c | 81LS98      | 88c    | *74C02               | 20c    |
| 7406    | 20c | LM301A DIP  | 35c    | *74C89               | \$1.50 |
| 7414    | 33c | LM308 DIP   | 49c    | *74C103              | 30c    |
| 74164   | 48c | *LM324      | 42c    | *74A113K REG.        | \$1.20 |
| 74365   | 37c | LM339 DIP   | 42c    | *M81P 602 6A 200V BK | \$1.00 |
| *74LS00 | 20c | *LM340KC 12 | \$1.20 | *S6006L 6A 600V SCR  | 80c    |

**TI CALCULATORS FROM MAGRATH'S**

- FINANCIAL
- SCIENTIFIC
- STUDENT

TI-35 Student math kit \$27.00  
TI-54 Engineers & Science \$45.00  
TI Business Analyst II \$50.00

PRICES INCLUDE SALES TAX



Add Sales Tax if applicable  
Prices valid until stock sold.  
Prices subject to alteration

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MELBOURNE, 3000.**  
Tel (03) 347 1122



AR-7



# EMTRONICS

649 George St., Sydney, NSW. 2000. Phone: 211-0531.

## AUSTRALIA'S only full line distributor

### SPECIAL ANNOUNCEMENT:

Since our recent appointment as Sydney's only authorised ICOM & DAIWA dealer, EMTRONICS has now become the one and only Australian "FULL LINE" distributor of all amateur radio products. We now supply: ICOM, YAESU, KENWOOD, AZDEN, FOK, DAIWA, DRAKE, CUBIC, DENTRON, ROBOT, HAL, INFO-TECH, LUNAR, ETO-ALPHA, DATONG, KENPRO, WELZ, TOKYO HY-POWER, and many more. Contact us for any specialised product or technical advice. If we don't stock your special product, we will try to get it for you! **TRY OUR SPECIAL RECEIVER PRICES!**

### ICOM

|                                 |       |
|---------------------------------|-------|
| IC740 HF Transceiver            | \$*   |
| ICA720A HF Deluxe Transceiver   | \$*   |
| IC730 HF Multi Mode Transceiver | \$*   |
| IC25A 2M FM Mobile 25W          | \$446 |
| IC4A 70CM Hand Held 15W         | \$249 |
| IC2A 2M Hand Held 15W           | \$309 |
| IC290 2M FM SSB CW Mobile       | \$599 |
| IC251A 2M Multi Mode 10W        | \$849 |
| IC505 6M All Mode 3/10W         | \$*   |

\* WE WILL TRY TO MEET THE PRICE OF THE OPPOSITION!

### KENWOOD

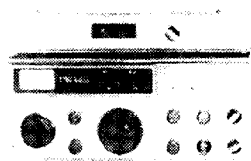
|                          |        |
|--------------------------|--------|
| TS930S W/D Ant Tuner     | \$1399 |
| IS930S & Auto Ant Tuner  | \$1595 |
| TS430 NEW Transceiver    | TBA    |
| H2000 NEW Receiver       | TBA    |
| R 1000 HF Receiver       | \$489  |
| R 600 HF Receiver        | \$380  |
| D 81 Grid Dip Oscillator | \$99   |
| HC 10 Digital Clock      | \$99   |

### YAESU

|                            |       |
|----------------------------|-------|
| FT107                      | \$*   |
| FT102                      | \$*   |
| FT107 OMS superseded model | na    |
| FRG 7700 w/o memory        | \$499 |
| FRG 7700 with memory       | \$825 |

\*We will try to meet the price of the opposition

### NEW SUPER RECEIVER NRD 515 from JRC THE INTELLIGENT RECEIVER!



NOW ONLY  
**\$1595**

★ PLL DIGITAL VFO ★ DIGITAL TUNING SYSTEM ★ 24 CHANNEL FREQUENCY MEMORY UNIT (OPTION) ★ CONTINUOUS COVERAGE ALL MODE RECEPTION ★ UP-CONVERSION TYPE DOUBLE SUPER-HETERODYNE ★ EFFECTIVE PASS BAND TUNING ★ ELECTRONIC TUNING AND ELECTRONIC SWITCHING ★ ALL SOLID STATE ★ COMPLETELY MODULAR CONSTRUCTION ★ EASY TO OPERATE. SMALL AND RUGGED ★ BUILT IN ACCESSORY CIRCUITS ★ OPERATION IN COMBINATION WITH THE NSD 505 TRANSMITTER

Write for colour brochure & specs!

#### THIS MONTH'S SPECIALS:

|                                       |        |        |
|---------------------------------------|--------|--------|
| Demtron GLA1000 1kw HF Linear         | \$540  | \$390  |
| Info Tech M500 with 12" Monitor       | \$1799 | \$1199 |
| Kenwood 430, 50w UHF Linear           | \$229  | \$139  |
| Azden PSS-2800 10M FM Transceiver     | \$360  | \$330  |
| Spoken 250 HF Transistorised 250W PEP | \$225  | \$179  |

### DATONG

|                               |       |
|-------------------------------|-------|
| D 70 Tutot (plus \$6.50 post) | \$145 |
| ASP (plus \$6.50 post)        | \$235 |
| FL2 (plus \$6.50 post)        | \$255 |
| AD 270 (plus \$6.50 post)     | \$125 |
| AO 370 (plus \$6.50 post)     | \$185 |
| VLF (plus \$4 post)           | \$99  |
| Cadillac (plus \$6.50 post)   | \$99  |
| RFA (plus \$6.50 post)        | \$99  |
| OF MODEL (plus \$6.50 post)   | \$270 |

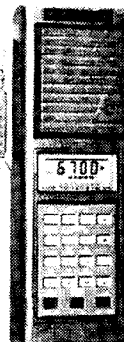
### RTTY EQUIPMENT

|                                     |        |
|-------------------------------------|--------|
| Hal OS 3100 ASR                     | \$3150 |
| Hal OS 3100 w/MSO 3100 ASR          | \$3742 |
| Hal CT 2100 10mm terminal           | \$1235 |
| Hal KB 2100 Keyboard for CT 2100    | \$255  |
| Telearader CWR 885 E Comm. Terminal | \$895  |
| Telearader CWR 670 E Receive Only   | \$447  |
| Robot 000 Communications Terminal   | \$900  |
| Info Tech M500 Comm Terminal        | \$1400 |
| C. Itoh Model 8510 Printer          | \$845  |
| KG 12N 12" Green Screen Monitor     | \$258  |

WRITE FOR COLOUR BROCHURE

**WHEN YOU ARE READY FOR A  
NEW HF, VHF OR UHF POWER  
AMPLIFIER COME TO EMTRONICS  
- THE RF POWERHOUSE.**

### AUSTRALIA'S BEST HANDHELD! AZDEN PCS-300



the standard for comparison  
the performance of this transceiver cannot be matched with any similar handheld 2M. FM transceiver on the market today.

**\$299**

WRITE FOR  
COLOUR BROCHURE

### SWR & POWER METERS

|                             |       |
|-----------------------------|-------|
| APM-1H (+ \$6.50 post)      | \$105 |
| APM-1V (+ \$6.50 post)      | \$105 |
| PM-2H (+ \$6.50 post)       | \$79  |
| PM-2V (+ \$6.50 post)       | \$79  |
| PM-3HV (+ \$6.50 post)      | \$63  |
| PM-4HV (+ \$6.50 post)      | \$38  |
| PM-5H (+ \$6.50 post)       | \$56  |
| PM-5V (+ \$6.50 post)       | \$56  |
| T-430 (+ \$6.50 post)       | \$69  |
| SP-300 (+ \$6.50 post) Welz | \$165 |
| SP-15M Welz                 | \$58  |
| SP-45 Welz                  | \$75  |

### SPECIALS FOR THIS MONTH ANTENNAS AND ROTATORS

|                                      |       |
|--------------------------------------|-------|
| TET HB 33AP<br>(3 element tribander) | \$312 |
| KR 400 Rotator                       | \$149 |
|                                      | \$461 |
| Special package deal                 | \$400 |
| TET 34D<br>(4 element tribander)     | \$348 |
| KR 400 Rotator                       | \$149 |
|                                      | \$495 |
| Special package deal                 | \$421 |
| TET 35C<br>(5 element tribander)     | \$429 |
| KR 400 Rotator                       | \$149 |
|                                      | \$578 |
| Special package deal                 | \$499 |

### ROLL YOUR OWN

|                                                                                                                                                                                                       |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| SKT-300 Antenna tuner. 300W 10-80m coax & random wire. all parts except box & wiring                                                                                                                  | \$49    |
| SKT-1200 Antenna tuner. 1.2kw. 10-160m coax & random wire. all parts except box & wiring                                                                                                              | \$99    |
| MIZUHO VFO-5 This unit can be used as local OSC. in a direct conversion receiver or as a VFO in a transmitter or transceiver together with an SG-9 above. It consists of OSC. buffer amplifier and RL | \$35    |
| MIZUHO VFO-7, VFO or ORP transmitter                                                                                                                                                                  | \$35    |
| MIZUHO QP-7, 7 MHz TX ORP kit                                                                                                                                                                         | \$26    |
| MIZUHO QP-21 21 MHz TX ORP kit                                                                                                                                                                        | \$26    |
| MIZUHO QP-50 50 MHz TX ORP kit                                                                                                                                                                        | \$29.50 |
| MIZUHO MOD 1 Modulator kit                                                                                                                                                                            | \$26    |
| Variable capacitors, coils, roller inductors, high volt inductors, torroid cores, antenna tuners and tuner kits.                                                                                      |         |
| All band etenna                                                                                                                                                                                       | \$53.00 |

TRANSMISSION LINES  
CERAMIC INSULATORS

### EXCITING NEW ANTENNA TUNER EMTRON EAT-300



MARINE - AMATEUR - COMMERCIAL APPLICATIONS  
THE BEST 300W ANTENNA TUNER ON THE MARKET. THE FINEST AMERICAN COMPONENTS GIVE YOU QUALITY PERFORMANCE AND SATISFACTION.

NOW  
**\$149**

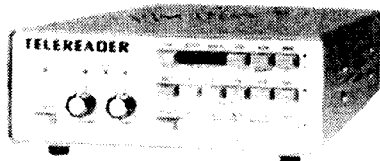
**ATTENTION SWL!** Two new code converters released by Telearader! The most sophisticated CWR 670E CW RTTY ASC11 converter at \$447, and the all new CWR 610 code master CW RTTY at only \$249. Now tune into hidden frequencies with your receiver, code converter and your TV set. Get a free "World Press Services" handbook with every purchase. Now is the time to start monitoring the hidden signals - world press, embassies, Interpol, stock market, spies, pirates etc. Write for full details



# EMTRONICS

649 George St., Sydney, NSW. 2000. Phone. 211-0531.

## "SWL-DREAM MACHINE" NEW CWR-670E TELEREADER



**ONLY \$447**

See What You've Been Missing!

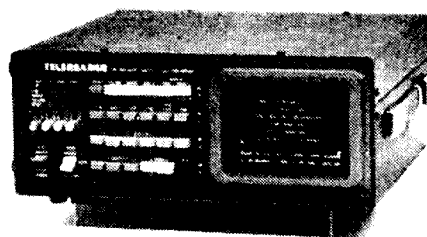
Stay in touch with world events, monitor weather, press, ship traffic, and radio amateurs. Connect to your receiver and display shortwave radio teleprinter and Morse code transmissions with the new receive-only CWR-670E Telereader

- Receive ASCII or Baudot RTTY
- Six standard RTTY speeds
- 3 RTTY shifts for low or high tones
- Adjustable specs for fine tuning
- Receive Morse code - 4 to 60 wpm
- A 16 lines by 36 or 72 character display.
- Two page video display
- Parallel ASCII printer output
- Requires + 12 VDC and external TV monitor or your home TV set
- Small size (8" x 3" x 12.78")

Write or call for more details.

## RTTY-CW-ASCII TERMINAL

**ONLY  
\$1090**



## CWR-685E TELEREADER

Yes, now you can take it with you! The new CWR-685E Telereader is the smallest RTTY and CW terminal available, complete with CRT display screen. Stay active with your RTTY and CW friends even while travelling. Some of the outstanding features of the CWR-685E are:

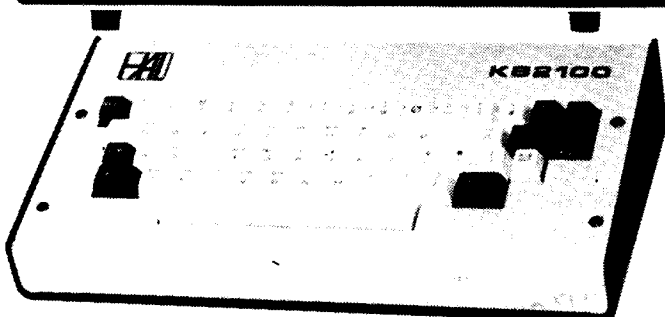
- Send and receive ASCII, Baudot, and Morse code
- RTTY and Morse demodulators are built-in
- RTTY speeds of 45, 80, 87, 74, 110, and 300 baud
- High or Low RTTY tones
- Send and receive CW at 3 to 40 wpm
- Built-in 5 inch green CRT display
- Four page video screen display
- Six programmable HERE IS messages
- Pretype up to 18 lines of text
- External keyboard included
- Runs on + 12 VDC at 1.7 Ampere.
- Small size (12.75 x 5" x 11.5")

We can provide you with all types of special communications systems available in the world today. We are distributors of: Hal, Telereader, Infotech, Robot, Tono etc.

We also stock famous "C. Itoh" and star dot Matrix printers as well as high resolution green screen monitors for communications and computer terminals. Please write for further info.



## CT2100 COMMUNICATIONS TERMINAL



Compare feature for feature; you'll find that the CT2100 offers the most performance and flexibility for your dollar.

- Send or receive ASCII, Baudot, or Morse code
- RTTY and Morse demodulators are built-in
- RTTY speeds of 45, 50, 74, 100, 110, 300, 600, and 1200 baud - ASCII or Baudot
- FOUR RTTY Modems: "high tones", "low tones", "103 Modem tones", and "202 Modem tones"
- Three shifts for high and low tones (170, 425, and 850 Hz)
- Crystal-synthesized transmit tones
- Send and receive Morse code at 1 to 100 wpm
- Characters displayed on 24 line screen
- Choose either 36 or 72 characters per line
- 2 pages of 72 character lines or 4 pages of 36 character lines
- Split-screen for pre-typing transmit text.
- Audio, current loop, or RS232 data I/O
- Printers available for hard-copy of all 3 codes
- On-screen RTTY tuning bar plus LED indicators
- ALL ASCII control characters; half or full duplex
- Breg-tape storage of 8-256 character messages in MSG2100 EPROM option
- Two programmable HERE IS messages

# THE YAESU SPECIALISTS

Bail Electronics have the largest range of  
Yaesu Amateur Radio equipment in Australia.

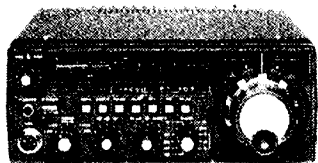


General coverage receiver 150 kHz to 30 MHz

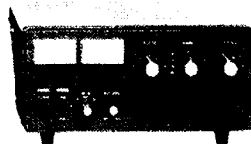
FT-ONE the ultimate HF rig for SSB, CW, FSK, AM, FM.



FT-102 the DXer's dream. All mode with 100db Rx dynamic range. Accessories FC-102 antenna tuner 1.2Kw; FV-102DM Ext. VFO; SP-102 Ext. speaker with audio filter.



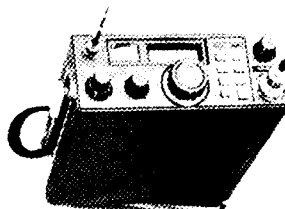
FT-707 the ideal mobile HF rig - can be used as base station transceiver with optional power supply, accessories - FC-707 Antenna Tuner, FV-707DM Ext. VFO.



FL-2100Z Linear Amplifier 1.8 - 30MHz — coasts along at full legal power.



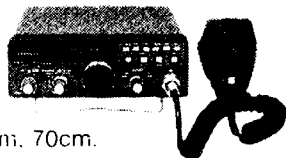
FT-208 — FT-708.  
Handhelds for 2m and 70cm.  
● Fully synthesised  
● 10 memories  
● Keyboard entry



FT-290, FT-690, FT-790.  
All mode portable/mobile rigs for 2m, 6m, 70cm. The "go anywhere" rigs.

FL-2010 (2m), FL-6010 (6m), and FL-7010 (70cm) Linears for the FT-208, FT-290 series.

FT-480, FT-680, FT-780  
The popular all-mode Mobile or base Station transceivers for 2m, 6m, 70cm.



Boost your output to 70 W with the FL-2050 2m Linear Amplifier (12db Rx amp inbuilt.)



FT-230 the compact 2m mobile with 25 W output  
● 10 memories  
● Dual VFO

Stop Press — FT730 70cm 10W due soon.



FRG-7700  
Listen to the world with the professional all mode Communications Receiver 150 kHz to 30 MHz. Accessories include FRA-7700 Active Antenna, FRT-7700 Antenna Tuner, FRV-7700 VHF Converters (for listening to hams, aircraft etc.)

Bail — gives full Yaesu 12 month guarantee.  
Bail — carries a range of Yaesu spares and Yaesu antennas  
Bail — provides expert repair service  
Bail — offers friendly advice to hams and hams-to-be.  
Bail — gives prompt attention to your mail orders.

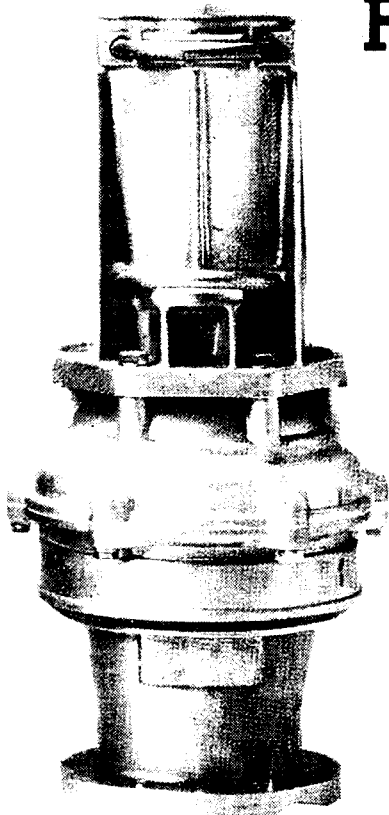
## Bail Electronic Services

38 Faithful Street,  
Wangaratta 3677  
Telephone: (057) 21 6260 — Telex: 56880

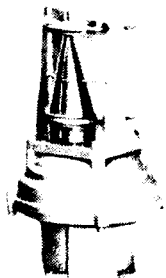
# bail



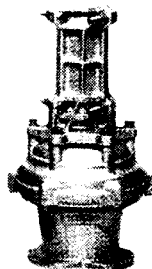
# EMOTATOR ROTATORS FROM BAIL



103SAX

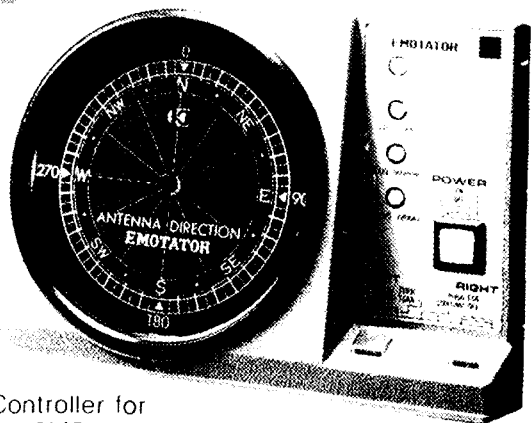
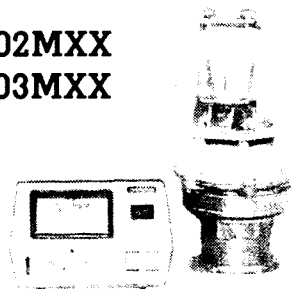


502SAX



**SAX MODELS  
HAVE GREAT  
CIRCLE MAP  
CENTRED  
ON  
S.E. AUSTRALIA**

1102MXX  
1103MXX



Controller for  
1102MSAX, 1103MSAX

| Model           | A<br>M | GD <sup>2</sup><br>KgM | Braking<br>Torque<br>Kg Cm | Rotation<br>Torque<br>Kg Cm | Vertical<br>Load<br>Kg |
|-----------------|--------|------------------------|----------------------------|-----------------------------|------------------------|
| 103SAX          | 0.7    | 75                     | 1500                       | 450                         | 150                    |
| 502SAX          | 1.5    | 150                    | 3000                       | 900                         | 300                    |
| 1102MXX<br>MSAX | 2.5    | 300                    | 10 000                     | 800                         | 400                    |
| 1103MXX<br>MSAX | 2.5    | 700                    | 10 000                     | 1000                        | 400                    |

A: Allowable Antenna wind area  
GD<sup>2</sup>: Allowable Flywheel effect

**CONTACT THE AUSTRALIAN  
AGENTS FOR EMOTATORS  
AND ALL ROTATOR  
ACCESSORIES . . .**

OVER 33,000  
CHANNELS

# J.I.L. SX-200



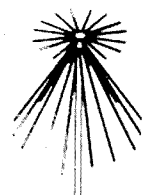
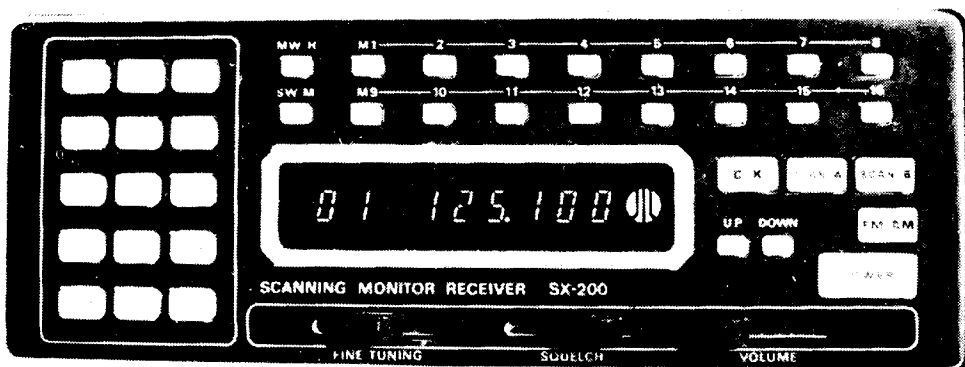
JIL  
REGD TM

Monitor thousands  
of frequencies

NOW 32  
MEMORIES

FEATURING:

- Airband
- Australian low-band



A range of accessories is available including Broadband or High Gain BASE Antennas.

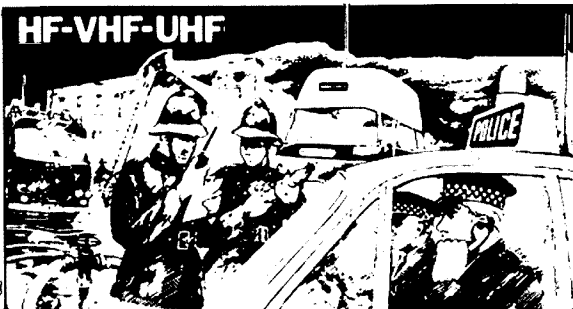
## PROGRAMMABLE SCANNER DOES IT ALL. 26 - 180MHz, 380 - 514MHz.

### SPECIFICATIONS

- **Type:** FM & AM
- **Frequency Range:**
  - a) 26-57.995 MHz Space... 5 kHz
  - b) 58-88 MHz Space... 12.5 kHz
  - c) 108-180 MHz Space... 5 kHz
  - d) 380-514 MHz Space... 12.5 kHz
- **Sensitivity:**
  - FM . a) 26-180 MHz 0.4uV S/N 12 dB
  - b) 380-514 MHz 1.0uV S/N 12 dB
  - AM . a) 26-180 MHz 1.0uV S/N 12 dB
  - b) 380-514 MHz 2.0uV S/N 12 dB
- **Selectivity:**
  - FM ..... More than 60 dB at -25 kHz
  - AM ..... More than 60 dB at -10 kHz
- **Dimensions:** 210 (W) x 75 (H) x 235 (D) mm  
8-1/4 (W) x 3-1/4 (H) x 9-1/8 (D) in.
- **Weight:** 2.8 Kgs.
- **Clock Error:** Within 10 sec./month
- **Memory Channel:** 16 Channels
- **Scan Rate:**
  - Fast ..... 8 Channels/sec.
  - Slow ..... 4 Channels/sec.
- **Seek Rate:**
  - Fast ..... 10 Channels/sec.
  - Slow ..... 5 Channels/sec.
- **Scan Delay:** 0, 3 or 4 seconds
- **Audio Output:** 2 Watts
- **Ant Impedance:** 50-75 ohms  
Whip or External Antenna with LO/DX Control (20 dB ATT.)
- **Freq. Stability:**
  - 26-180 MHz ... Within 300 Hz
  - 380-514 MHz ... Within 1 KHz

The JIL SX-200 represents the latest **STATE-OF-THE-ART** technology in the development of Scanning Monitor Receivers. It has many features that previous have not been available on receivers of its type.

For example the tremendous frequency coverage, which encompasses all of the following bands:— **HF & UHF CB, 27 & 155MHz MARINE, Australian LOW BAND, AIRCRAFT band, VHF SATELLITE band, 10Mx, 6Mx, 2Mx and 70CMx AMATEUR, VHF HIGH BAND and UHF TWO-WAY band** — as well as many others. Other features include detection of **AM or FM** on all bands, Squelch Circuitry that can be used to **LOCK OUT** carrier only signals, Fine Tuning control for off channel stations, **240 VAC plus 12VDC** operation, Squelch Operated Output that may be used to trigger a tape recorder or channel occupancy counter and accurate Quartz Clock.



\$525



\$8 P&P

### ACCESSORIES

- Service Manual \$10 + \$1 P&P
- Scan-X Base Antenna



# JIL SX-200

# A BETTER SCANNING MONITOR RECEIVER

## HIGH QUALITY AND PERFORMANCE

JIL have designed the SX-200 as a high quality, high performance programmable scanning receiver at a realistic price, design criteria which are not born in many other receivers of its type.

## MECHANICALLY RUGGED

The JIL SX-200 is ruggedly built using EPOXY-GLASS printed circuit board and double sided through hole plating techniques. Easy access and servicability is maintained throughout its design.

## 4 BIT MICROPROCESSOR WITH ONBOARD ROM AND RAM

A powerful 4 Bit PMOS Microprocessor, the uPD553, is used as a controller in the SX-200. Its features include 2000 x 8 ROM and 96 x 4 RAM onboard as well as up to 80 instructions with a 3 level subroutine stack.

## EXTREMELY LOW SPURIOUS COUNT

Even though the SX-200 covers over 33,000 Channels JIL, through careful design, have been able to reduce the number of internally generated spurious signals to an extremely low level. Not the case in most other scanning receivers.

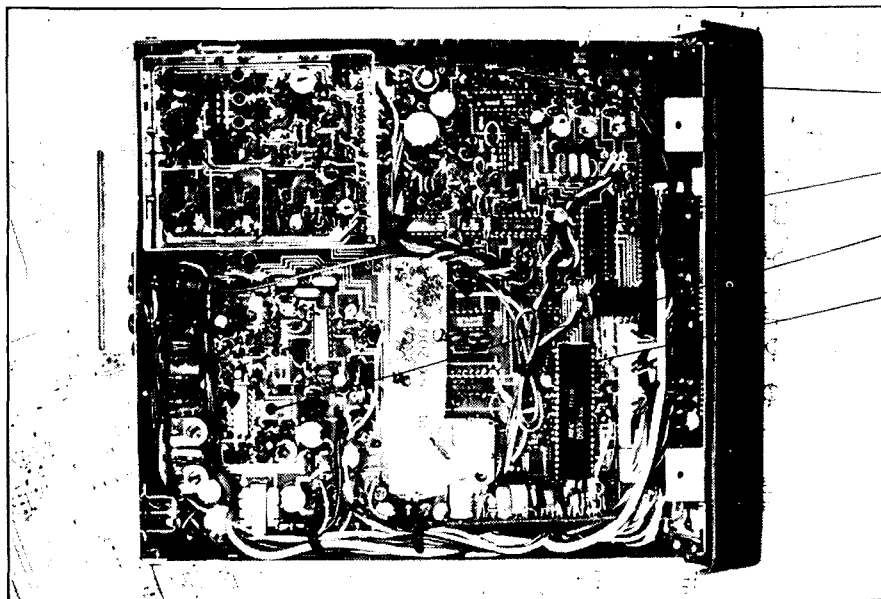
Monitor thousands of frequencies including many Military & Civil

**HF-VHF-UHF**



## FULLY TRACKED RF AMPLIFIERS

The SX-200 makes use of 3 separate RF Amplifier Stages. They are divided into 6 bands, each band having its own electronically switched coils which are fully tracked with the receiver frequency using Varicap Diodes. Maximum performance is thus gained over the entire operating range of the set.



Rugged Double Sided Epoxy Glass Circuit Board.

2K Cmos RAM

Crystal and ceramic I.F. filters.

4 Bit Microprocessor

Add an extra 16 memory channels with the EXP-32 Memory Expander Kit.

- Total of 32 Memories
- Either Bank of 16 Can Be Scanned Separately.

PRICE \$49  
+ \$4 P&P

**SX-200, RUGGED CONSTRUCTION AND EASY SERVICABILITY.**

## AVAILABLE FROM

W.A.: Letco Trading Co. (09) 387 4966, N.S.W.: Emtronics (02) 211 0531, QLD: CW Electronics (07) 397 0808, S.A.: Jensen Intersound (08) 269 4744, Plus many other regional outlets, contact GFS for your nearest stockist.

AUSTRALIAN AGENT & DISTRIBUTOR

**GFS ELECTRONIC IMPORTS**

Division of GD & JA WILHER PTY. LTD.

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Telex: AA 38053 GFS  
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PORTABLE GEAR, TAPE RECORDERS, RADIOS,  
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YOU CAN SAVE \$! \$! \$!

## PS 519 UNIVERSAL NI-CAD BATTERY CHARGER

- OPERATES FROM 240 VOLT AC MAINS
- ACCEPTS AA C D & 9 VOLT BATTERIES
- CHARGES BATERIES SINGLY OR IN GROUPS
- DIFFERENT SIZED BATTERIES MAY BE CHARGED TOGETHER
- CHARGING INDICATOR LAMP AT EACH BATTERY POSITION
- INCORPORATES BATTERY TESTER

**PRICE**  
**\$21.00**

POST PAID

IDEAL  
CHRISTMAS GIFT

**WILLIAM WILLIS & CO. PTY. LTD.**

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PHONE: (03) 836-0707

**BILL  
EDGE'S**

# ELECTRONIC AGENCIES

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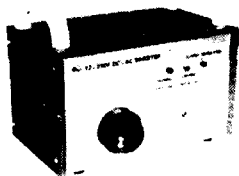


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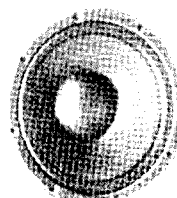
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**ANTENNA ANTHOLOGY** — This anthology contains some of the best QST HF antenna articles and theory of antennas published by ARRL.

**INTERFERENCE HANDBOOK** — A handy book to help you locate and resolve interference problems of every type by William R. Nelson, WA6FQG and edited by William I. Orr, W6SAI.

**RADIO FREQUENCY INTERFERENCE** — How to identify and cure it in your transmitter and your neighbour's entertainment equipment, published by ARRL.

**SHORTWAVE PROPAGATION HANDBOOK** — A text dealing with solar and geomagnetic activity and the effect it has on SW propagation, by George Jacobs W3ASK and Theodore J. Cohen N4XX published by CQ.

**SOLID STATE DESIGN** — For those who wish to extend their theoretical understanding of these devices. Contains chapters from basic transmitter design through to an integrated station by Wes Hayward W7ZOI and Doug DeMaw W1FB published by ARRL.

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All books are available from YOUR DIVISION or direct from MAGPUBS (the publications department of the WIA) PO Box 150, Toorak, Vic., 3142 or 3/105 Hawthorn Road, North Caulfield.

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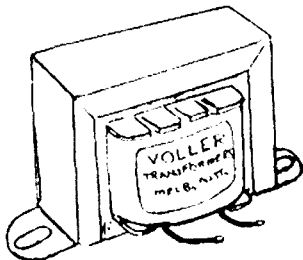
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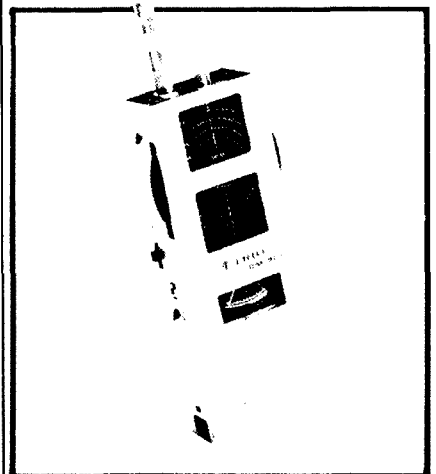
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# HOW'S DX

Ken McLachlan, VK3AH  
Box 39, Mooroolbark 3138

That time of the year has caught up with us again, seemingly the year went a little quicker than preceding years. Perhaps this is our modern way of life or is it that we are getting older and time slips by at a greater speed than we realise? Season's greetings are flowing and being exchanged between individuals from all walks of life, frequently unknown to each other and meeting for the first time.

These gestures of goodwill and peace are one of the benefits we, as amateurs, are privileged to receive from the fascinating hobby that we have chosen. Occasionally, but very rarely, in our hobby are harsh words spoken and then it is generally in the heat of the moment when one's patience has been tried to the upper limit by the minority of inconsiderates who frequent the bands we enjoy using.

Unfortunately, the manners and code of ethics have declined over the years. The advent of numerous nets and "List takers", for the purpose of working DX, has grown out of all proportion. With it has come the QRM synonymous with being "close to the action", without mentioning the deliberate jamming by those that don't want to play by the rules. Speaking as a Net Controller, one gets to dread the time ahead, when you start to get your group together as there will also be someone on frequency that will set out to make life just that little harder whether it be for the NC or the "guy" with the dipole in the middle of Africa trying to give someone a new country.

Malicious QRM, is only the tip of the iceberg, when one thinks of the PHONIES that have been created in call signs, DXpeditions, QTH's and QSL managers which have been generated by the figment of the imagination in some people's minds. The loss of accumulated manhours in chasing genuine elusive DX alone is staggering when one conservatively thinks of, say, 5000 DXers trying to work one specific expedition for eight hours of a day to get one card (if they are lucky). The "phonies" we can do without!

That example is equal to 40,000 manhours or a span of four and one half years of one's life. Ladies and gentlemen, is it a waste of productive, recreational or generally just plain sleeping time? Another simile would be a QSL Manager for a station that has worked 8000 QSO's, assume that 4000 QSL direct with say a mean average of 2 IRC's, probably a realistic figure, this represents a purchase value of A\$2600, a cashable value of at least A\$1600. No cards are forthcoming and it is found that the "Manager" has skipped to more exotic places or has further updated his equipment at the expense of his fellow amateur. No consideration has been given to the multiple attempts that have been made to secure the confirmation.

The dismal scene painted here has, does and will continue to happen, though luckily it is done only by an infinitesimal percentage of amateurs and is by no means indicative of the hobby.

Are you still going to be in the next "pile up" as I will be there in World Communications Year 1983, a year which promises to be quite interesting, with the advent of such events as the appearance of much wanted DX countries, further deletions from the DXCC current coun-

tries list, maybe a new country will become a valid claim as well as frequency extensions to the American phone band, a change that would change the techniques of all users of twenty metres.

If the phone privileges for US amateurs are extended below 14.200 MHz as presently being considered by the FCC, *will the VK DXer's life change dramatically?* The new segment could become "kilowatt alley", quite more competitive and forcing the non DXer and weekly scheds below 14.150 MHz which is already overcrowded, according to the stations who break the "Gentleman's Agreement" and nonchalantly chatter away below 14.100 MHz.

The VK novice operator has suffered and is already inconvenienced frequently by the thoughtlessness of those using side-band in a CW only "Gentleman's Agreement" area. Will the RTTY and CW operators suffer the same fate in 1983? Let's hope not.

## KERMADEC

It is believed that Ron, ZL1AMO has again been denied permission to land and operate from this much-wanted area. Are the authorities so conscious of the ecology that permission is not granted or is there another hidden reason that is not being disclosed? It is now five years since the OM/YL team ventured onto Raoul Island. A lot missed the opportunity then and there have been a lot of licences issued since that period.

## ERIK SJOLUND SM0AGD

The "South Pacific Extended DXpedition" continues with Erik, SM0AGD having just completed a successful operation of removing KH1, American Phoenix, from the much-wanted list of thousands of DXers. Many VK's may have missed out, as unfortunately, with no preferential treatment with the "split frequency" methods Erik employed, they had to compete with all comers and didn't gain an entry in the log.

Erik caught the DXing bug some eleven years ago whilst on a vacation to Rhodes SV0. He was hooked! DXing then became a part of his work which took him to many far and much-wanted areas. A change of employment, to a position that would involve considerable travelling with the government of his homeland, combined with his pleasant manner and the fact of knowing the correct people through his diplomatic connections that would be sympathetic to reciprocal amateur licensing and operation, have assisted such areas as CR3, S21, TA and XW to be activated by this amiable man.

On retirement, the present mammoth expedition was undertaken, and to all accounts, is progressing very successfully with maybe even a stop off to VK territories next year. All cards, with envelopes for separate call signs (as they are processed in different areas) to SM3CXS. Multiple bands for the one call may be contained in the one envelope to save excessive postal costs.

## A4XX OMAN

Those that QSOed A4XX, which was a special events call sign to commemorate the tenth anniversary of the Royal Omani Amateur Society's formation and was used on the 27/28

November on the three bands 10, 15 and 20 metres, are eligible for the OMAN Award with Tenth Anniversary Endorsement. Single band contacts are eligible for a special QSL card.

## BEACONS

News of two new beacons for those interested in checking 28 MHz propagation.

*PY2AMI, 28.399 MHz, 10 W, Location: Americana City.*

*VS6TEN, 28.290 MHz, 10 W, Location: Hong Kong.*

Add these calls to the 28 MHz Beacon list on Page 34 of the 1982/83 Call Book for future reference.

## SIX METRE ACTIVITY

Father Dave, CE0AE has acquired 6 metre equipment which includes a three element beam. Information on the VK VHF activity has been forwarded to him via his Manager, Mary Ann WA3HUP, with whom he has a daily sched.

When Dave finds the time he also hopes to erect an antenna for 160 metres. This will be of interest to quite a number of amateurs in the Pacific.

## FERNANDO DE NORONHA

PY0ZZ eventually hit the airways with good signals into VK. Some VK's made a contact by the courtesy of the "list takers", others successfully went it alone. QSL's via PY7ZZ.

## WANTED

Over a decade ago XU1AA was active, it is now known that at least two amateurs are still trying to track down the card. Any help would be appreciated by Neil, VK6NE and Allen, WB5BIR.

## FAROES

Leon, W1JTI/OY has updated his call to OY1KH and will be operating Klaksvik, one of the northern islands of the group. Direct OSL's with return postage will be rewarded by special stamps. All QSL's via the OY Bureau will be 100%. Leon's QSL info is PO Box 184, Torshavn, DK3800, Faroe Islands.

## OSL ROUTE VK0AC

Incorrect information regarding the QSL route for Art seems to be finding its way into a number of magazines — Art formerly VK0AC and later operating VK3AOK is now KS7A. All requests for cards to Art Coolidge, Box 25471, Portland, Oregon, 97225, USA.

## CROZET AGAIN

It looks as though George, FB8WG, will be relieved by another amateur who will probably be active later this month using the call sign FB8WI, although the actual call sign has not been confirmed. QSL arrangements are unknown.

## YASME

Lloyd and Iris Colvin have commenced a tour of the Middle East, according to all reports. They hope to activate as many countries that they can obtain licences in during their planned six month tour.

All QSL's to YASME Foundation, PO Box 2025, Castro Valley, CA 94546, USA.

### COCOS KEELING

Frank, VK9NYG and his XYL Ann enjoyed the company of Frank's QSL Manager, Neil VK6NE for a fortnight before starting to pack to leave the island after his tour of duty and return to the mainland. This leaves Mike, VK9ZYX and Cress VK9YC to represent this much sought-after country on the amateur bands.

### NORFOLK ISLAND

During a recent stay in VK9N, Jack VK3LG/9NA, took the opportunity to meet some of the local amateurs.



L to R: Jim VK9NS, Kirsti VK9NL and Jack VK3LG/9NA.



L to R: Bob VK9ND, Mick VK9NW, Jack VK3LG/9NA at Anson Bay. N.I.

### PROFILE 4U1ITU

Many DXers have enjoyed a QSO with one of the many guest operators at 4U1ITU and at times it is operated by the Secretary of the ITU, Ted, F6RU who also manages the station.

The ITU's formation dates back to May 1865 when delegates from twenty European countries met in Paris and were signatories to an agreement setting up the International Telegraph Union that was to provide basic regulations for all of Europe's telegraph systems.

Berlin, in 1906 was host to the first radio conference and at one such conference held in Madrid in 1932, the organisation, recognising its responsibilities, changed its name to the International Telecommunications Union.

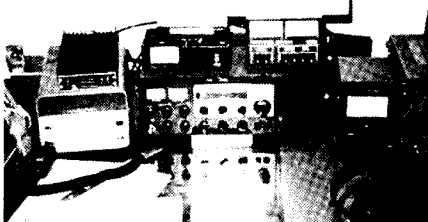
The International Amateur Radio Club (IARC), came into existence in Geneva at the inauguration, in 1962, of the new International Telecommunication Union Headquarters building. Allocated the call sign 4U1ITU it commenced operation on amateur bands from 2 metres thru to 80 metres with a station donated by the Hallicrafters Company as a gift of the United States of America.

Today 4U1ITU runs six separate stations that comprise a FT901 complete with external VFO and FL2100 linear, a KWM2A with external VFO facilities and a Drake L4B linear, a Yaesu FT101 coupled to a 30-L-1 linear, a Kenwood TS830S incorporating RTTY plus TL922 linear. VHF is catered for with a Kenwood TS700G with facilities for a 432 MHz converter and 2m



Paul, F6EXV operating the KWM2A equipment.

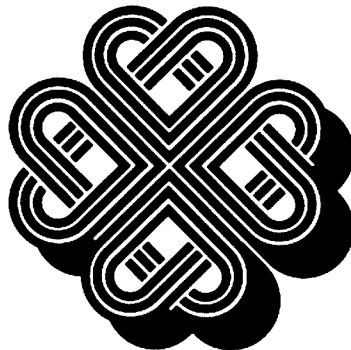
+ linear for satellite operation. Antennas are 2 x 3 element Tri-band yagis, 2 x multi-element yagis for 2m operation and inverted Vee dipoles for 40 and 80 metres. A 3/4 L sloper is used for 160 metre operation.



View of the Satellite station at 4U1ITU.

Operation of 4U1ITU is open to licensed amateurs who are asked to contribute, by payment of a fee, which is to offset the Club for normal wear and tear and maintenance of the equipment. One other condition is that all QSO's will be QSLed 100% (unless the distant station specifically requests that no QSL be needed).

### WORLD COMMUNICATIONS YEAR 1983



4U1ITU



4<sup>e</sup> Exposition mondiale des télécommunications  
4<sup>th</sup> World Telecommunication Exhibition  
4.<sup>a</sup> Exposición Mundial de Telecomunicaciones

One visitor to 4U1ITU has been Jan DJ8NK/A who did a stint of operating at the station last August. Jan recalls that it was a great experience to use the call sign and whilst he was there four other guest operators were active. The "shack" had a flow of constant visitors and during his short operating stint they had visitors from CX, DL, EA, F, G, HB, JA, K, ON, PA and SM.



AI, WB8ZJW, Secretary of the Pacific DX Nett and Jan, DJ8NK/A.



Tony — ex VK9ZD with some of the awards he collected whilst on Willis.

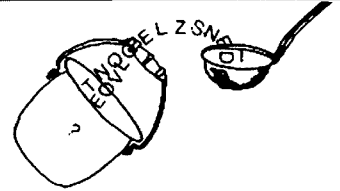


Jill VK6YL receiving another swag of QSL cards from her happy motor cycle postman Ron Imray. Jill is manager for many stations including Andy VK9ZA on Willis Island.



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 A71, Qatar (A7X)  
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 CF-CK, CY-CZ, Canada  
 D44, Cape Verde  
 EA-EH, Spain  
 H31, Panama  
 H44, Solomons (VR4)  
 H5,\* Bophuthatswana, S.A. Homeland (ZS)  
 HD, Ecuador  
 HG, Hungary  
 HT, Nicaragua  
 HW, France  
 IS, Spratly  
 J2, Djibouti (FL8)  
 J3, Grenada (VP2G)  
 J5, Guinea-Bissau (CR3)  
 J6, Saint Lucia (VP2L)  
 J7, Dominica (VP2D)  
 J8, St. Vincent (VP2S)  
 KH1/AH1/NH1/WH1, Baker, Canton, Howland  
 KH2/AH2/NH2/WH2, Guam  
 KH3/AH3/NH3/WH3, Johnston  
 KH4/AH4/NH4/WH4, Midway  
 KH5/AH5/NH5/WH5, Palmyra

KH5, Kingman  
 KH6/AH6/NH6/WH6, Hawaii  
 KH7/AH7/NH7/WH7, Kure  
 KH8/AH8/WH8, American Samoa  
 KH9/AH9/NH9/WH9, Wake  
 KH0, AH0, NH0, WHO, Northern Marianas  
 KP2/NP2/WP2, American Virgin Islands  
 KP4/NP4/WP4, Puerto Rico  
 P41/P42, Netherlands Antilles (PJ2/3/4/9)  
 P47, Sint Maarten (PJ5/6/7/8)  
 S4,\* Ciskei, S.A. Homeland (ZS)  
 S8,\* Transkei, S.A. Homeland (ZS)  
 SV5, Dodecanese  
 SV9, Crete  
 SVO, foreign amateurs in Greece, Crete, or Dodecanese  
 T2, Tuvalu (VR8)  
 T4 Cuba  
 T4,\* Vanda, S.A. Homeland (ZS)  
 T5, Somalia (60)  
 T30, West Kiribati (was T3A, T3K, VR1, Gilbert & Ocean Islands) includes Tarawa, Makin and Ocean Islands.  
 T31, Central Kiribati (was T3P or VR1, British Phoenix), includes Canton and Phoenix Islands

T32, East Kiribati (T3L/VR3, Christmas or Line Islands)  
 TK, France  
 V2A, Anguilla (VP2A)  
 V3, Belize (VP1)  
 V9, Vanda (see T4)  
 VK9N, Norfolk Island  
 VK9X, Christmas Island (Zone 29)  
 VK9Y, Cocos (Keeling) Islands  
 XJ-XO, Canada  
 XQ, Chile  
 Y21-Y99 East Germany (DM)  
 YT-YU, YZ, Yugoslavia  
 Z2, Zimbabwe (Rhodesia, ZE)  
 ZV-ZZ, Brazil  
 1A,\* Knights of Malta  
 4K, Russian Polar Stations  
 4M, Venezuela  
 4N, Yugoslavia  
 4T, Peru  
 6D-6J, Mexico  
 6T-6U, Sudan  
 8J, Japan

\*Unofficial prefixes.  
 Derived from NCDXCA

## PREFIX HUNTERS

OX9 was used for the first time in August to commemorate the millennium of Eric the Red who was condemned to leave Iceland for three years and flee to OX land. All suffixes were unchanged except for OX3JUL which used OX9V as it is a Radio Club located in the area that the legendary Eric the Red settled. Cards will be 100% via the Bureau and they would be well worth receiving as it may be another 1000 years before the prefix is used again.

### WALLIS ISLAND — FWO DXPEDITION

A late item from Bruce Johnson VK3DHT advises that he plans to activate Wallis Island (FWO) from 23.11.82 to 4.12.82 incl. He states that he is taking an FT707 and TH3 beam and wire dipoles, and hopes to operate on 80-10 metres. He will be looking around the usual DX frequencies. No fixed schedules have been arranged but Bruce hopes to operate as much as possible as conditions allow. QSLs via the Bureau or QTHR in the 1982/3 WIA Call Book, and under VK3YMT in the 81/82 overseas call book. Bruce expects the licence to be issued on arrival at Wallis Island, and hopes to obtain the call FWOBJ.

## GREETINGS

To all readers — I would like to extend to you all on behalf of the contributors to this column a very Happy Christmas and hope that 1983 is a year of happiness, complimented by a log book swelled with the "goodies" that will be around.

The quote for the year would have to be from WOPXW, "The biblical Job probably would have had a different reputation if he had ever tried to get enough cards for DXCC".

Thanks to one and all for their support throughout the year and Season's Greetings.

## THANKS

Some of the publications that have contributed to these notes include 73's, CABALLEROS DEL AIRE, cqDX, RSGB News-sheet, REGION 3 NEWS, ORZ DX, W6GOK/6HHD QSL MANAGER LIST, QST, QTC, and WORLD RADIO. Also amateurs including CE0AE, G3NBC, ON5NT, ON7WW and VK's 2PS, 3DFD, PBA/XSO, FR, UX, YL, 4AIX, 6FS, HD, IH, NE, XI, YL and Eric L30042.

## POST BOXES YOU MAY NEED:

AP2P PO Box 999, Rawalpindi  
 C210M PO Box 316, Nauru  
 C53EK PO Box 596, Banjul  
 CX8CS PO Box 37, Montevideo  
 EA9KS PO Box 278, Mellilla  
 ED5FPT PO Box 110, Torrent, Valencia  
 EP2TY PO Box 83, Ishahan, Iran  
 FO8IV PO Box 41, Otepa, Hao Island  
 J3AAB PO Box 251, St Georges  
 J6LB PO Box 732, Castries, St Lucia  
 PZ5JR PO Box 566, Paramaribo  
 TR8JO PO Box 681, Libreville  
 VP8AOS PO Box 102, Port Stanley  
 YK1AO PO Box 245, Damascus  
 ZD7AL PO Box 25, St Helena  
 3B8FK PO Box 1080, Port Louis  
 5H3DM PO Box 9112, Dar-es-Salaam  
 5T5ZR PO Box 202, Nouackchott

## CW WORKED ON THE WEST COAST

1.8 MHz  
 G3RBP, VE5XU, VE7BS, YV1NX  
 3.5 MHz  
 5Y4CS, KX6AA, SMOAGD/KH1 (SM3CX5), T31AE, U9H  
 —(UA90BA)  
 7 MHz  
 4U1ITU, 5N8ARY, HB0AFI, H21AB, J28DS —(J28DS),  
 KJ600/KH7, KX60B, M1C, OH0BH, OH0W, SV0BP/9 VP2MM,  
 ZF2DZ, ZM7AG  
 14 MHz  
 1A0KM (10MGM), OH2SX/CT3, OX3AX, PY0SJ  
 21 MHz  
 FPOFSZ, FP88HL, GD5CTM —(DF6ST), 1L8FR  
 28 MHz  
 PY0ZSC

( ) Denotes QSL route.

## WORKED ON THE NOVICE BANDS

28 MHz  
 3D2RJ, 4X6DX —(KA2KWG), 4Z4MY, UL7PGA, VU9SUN  
 —(G4CHP), VY1CW  
 21 MHz  
 3D2CS, 4D1LM, 9M2EE, 9M8PW —(G4DXC), A92P, C300H,  
 CE0AE —(WA3HUP), CE3BOA, CP8CP, DF8MP/XZ  
 —(OL2KA0), EA6NC, FK8DX, F08FW, HC1JQ, HC5RZ,  
 HK3DI/MM, HK5BCI, HP1GD, HR1JSH —(WB6WOD), IS0VSG,  
 PY3CB, P21DV, TG9CI, VK9ZA —(VK6YL), VS5MS —(N200),  
 VS9MK, YC4BY, YS1RJ, YS3OR

## WORKED ON THE EAST COAST

28 MHz  
 3D2DB, 4D9RG, DX1F, G4PQZ, GW40ZB, H44PT,  
 H44R, HG5XW, T32AB, T32AF, VE60K, VE60Y,  
 XE2BBO.  
 21 MHz  
 4N4TN, 4U1VIC\*, 6D5XF, A92P, DL4MAI/HB0\*,  
 HC8KA, HI4FZ, HR1M2M, HV2VO, IY4FGM, J3AAB,  
 J73HA, KL7IRT, KX600\*, OE6M8G, OH0AL\*,  
 PZ1DM, PZ2MDX, TI2JU, UQ0QAA, VP2EC, VY1BJ,  
 XE1ZW, YS99HH, ZC4CW.  
 14 MHz  
 4N4BY, 4N4TN, 4S7EA, 4U1VIC\*, 4U37ITU, 5B4LY,  
 5N8ARY, 5Y4CI, 5Y4CI, 5Y4DA, 5Y4ITU, 5Y4RK  
 —(W2TK), 6W8EX, 6W8HL, 8R1RBF, 9K2GR, 9L1DR,  
 A92P, BV2B, C30AH\*, C300H, C31YS, CN8CY,  
 CN8HO\*, CR9AN, DL4MAI/HB0\*, EA9JV, F5RV/FC  
 —(F5RV), FG7BU/FS7, FG7BV\*, FR7BP\*, FWOAG\*,  
 GB4BSG —(GM3DZB), GM3DZB, HA3GK, HA5HR\*,  
 HA5NF\*, HA8KDA\*, HV2VO, JT1AO, KG6AV/MM  
 —(W6DQH), K6GRT\*, LA1H\*, LU2HDY, LX1BJ\*,  
 LZ2AB\*, NL7K\*, OZ5FY, PY0ZSB, PY1ZAK,  
 SMOAGD/KH1 —(SM3CX5), T2GSH, T30BY, T32AF\*  
 —(WH6AIF), TG9VT, TR8CR, UK1ADK\*, UK2FAA,  
 UK7PAL, VP5RAC, VP8AEF, VP8AIB —YL, VQ9CI  
 —(KA4UMB), XZ9A, Y11BGD, YK1AO, Y08CW\*,  
 Y08OK\*, YS1RT, YU3TCO/MM, ZK2BGT, ZM7JT.

\*Denotes CW.

## SSB WORKED ON THE WEST COAST

3.5 MHz  
 5N9ARY, 8P6OR, KC6IN, UAOLCZ, YJ8IND  
 7 MHz  
 SW1DQ, 6Y5IC, 8P6OR, H5CB, J6LB, J73PD, OH0W, UK2BAS,  
 VP5WJR, ZL4POIC.  
 14 MHz  
 CN8CX, EL2AO, FPOFSZ, FY7AQ, HH5CB, OX3ZM —YL,  
 PY0SJ, PY0ZSA, PY0ZSB, PY0ZZ, T2GSH, T30DB, V2AK,  
 VK9YE, VO2CW.  
 21 MHz  
 JW7FO, PZ10M, UP2MDX —YL, V3PGL.  
 28 MHz  
 1A0KM, 5Y4CS, A71BJ, DL9EAJ/389, EA9KF, GD3GMY,  
 GUSTU, JT1AN, SV5FO, VP5WJR, ZL4POIC, ZM7AG,  
 ZS3KB/M.

28 MHz  
DL6WD, NOZO/DU2, FK8CE, HLOWB, KX6OB,  
LU1FNG, T30AT, UA6HYL, UK5WAS, U9H, UK0LAA,  
VE6WQ, VE7APE, KE7X, ZC4MR, 9V1TL.

21 MHz  
DK4HN, FK8EH, F08FW, HA7RO, HB0NL, HL5GZ,  
KH6WC, KX6OB, LA8MA, PY4ALW, T30AT, UW3UO,  
UB5JFP, UP2BAO, UQ2DZ, UK8AAI, YC2BDG,  
YU3T7Z, ZL4PO/C, 3D2RW, 4X6NDE, 5W1EJ.

14 MHz  
CT1DY, CT2QN, C03LN, EA40A, EA8AK, FG7CC,  
FK8KAA/P, FM7CF, G4OSC, HB0/DL1GK,  
W4GSM/HC8, H8APL, KC4AAA, KV4X, LU9CV,  
DE9ACL, TL8ER, TR8JD, UD6LAM, U05OWC, VK9NL,  
VP2MM, VP8ANT, VU2BK, VU9ARC, XE3RT, YB5AES,  
YV4AU, 3B8FG, 4N4BT, 4U1ITU, 4Z4BS, 5B4LY,  
6Y5AG, 9J2LL, 9Y4VU.

10.1 MHz  
DF6XB, N7ET/VU6, DL6FZ/EA, F5ZI, FK8EB, G2ACG,  
G13CVH, GJ3EML, HB9BXX, HB0AYX, JA1XYB,  
LX1YZ, OZ1LO, PA0PFW, VE1ASJ, VE7IQ, VK8HA,  
VP2MX, YV1AQE, 3D2RJ, 5Y4CS, 8P6AU,  
JA3SVG/MM.

7 MHz  
CM2TM, F8VJ, FK0AF, HA8VV, G3GWW, JA3CSZ,  
KC4AAA, NL7G, LZ2SC, OK1WT, UB5UCR, UJ8JKY,  
U2FU, T32AF, VU9TTC, YU7AJF, Y41ZM/P, 3D2RW.

3.5 MHz  
JA5BJC, KX60B.

**OSL's RECEIVED (OCTOBER)**

C6ABA, DF2PI, EA6AU, F6HGH, F08FW, GJ3EML,  
GI3VJ, HB9ZY, PA3BGB (all for 10 MHz), CE3CEW,  
CN8CY, C07FM, FK8DZ, FM7AV, HC7CM, HZ1AB,  
JT1KAA and U0Y (zone 23), KP4A, LX0RL,  
PA0VDP/PJ7, T32AF, U18ADQ, U05AP, VP9DR,  
V56IC, YV5DFI, ZK1DX, ZSSSP, 3D2WW, 7X2ED,  
9M8NL.

**OSL MANAGERS YOU MAY NEED —**

3D2DX — (SM3CXS), 4K1HK — (UA3AEL),  
4X6DX — (KA2KWG), 5Y4CS — (J11VLV),  
9M8PW — (G4DXC), A35JL — (K9AUB),  
C30LM — (EA3BKZ), C31PB — (HB9AQL),  
C31ZE — (DF9SP), CE0AE — (WA3HUP),  
CN8CY — (GW3IEQ), CR9T — (JA4IKZ),  
CS4UA — (W3HMK), CU1UA — (W3HMK),  
CU5UA — (W3HMK), DF8MP/XZ — (DL2KAO),  
ED6MDX — (EA6BE), EK0K — (UA9OBO),  
FH0FLO — (FR0FLO), FR7BP — (W0OX),  
FR7BP — (W0AX), GD5EPE — (DJ5PE),  
HR1JSH — (WB6WOD), JY8JP — (K1JPQ),  
KC6SX — (JA8OW), KC6WS — (AD1S),  
KE6RD/HK0 — (JA1UT), KH6LWIKH7 —  
(KH6JEB), NOZO/DU2 — (K0LST), N6DPH/DU2  
— (WB3IET), N7DUU/NH0 — (JA1UT),  
PY0WW — (PY7WW), SP5IXI/OE6 —  
(PA0NOL), T2AGD — (SM3CXS), T30CB —  
(SM3CXS), TG9EW — (I0WDX), U2G —  
(UQ2GW), UK0IAA/UOT — (UA0IOP),  
UQA0ZDA — (UA3AEL), V3TV — (G3ATK),  
VK9ZA — (VK6YL), VP2MO — (KA4BOT),  
VP5JNX — (W9CN), VS5MS — (N20O),  
VU9SUN — (G4CHP).



from "Caballeros Del Aire" Translated by Luis VK3ZLD



AUSTRALIAN LADIES AMATEUR  
ASSOCIATION

# ALARA

Margaret Loft, VK3DML

28 Lawrence Street, Castlemaine 3450

*Season's greetings to all of you and I do hope you have a safe and happy Christmas with your families.*

By the time you are reading this, ALARA's second contest will be over; thank you to all who took part and we do hope you enjoyed it. Remember the logs must reach me by 31st December to be eligible for the certificates. Rules are on page 40 of October AR magazine.

Daylight saving time is with us again and the ALARA nets will now be at 0930 UTC, so on Monday nights look for the girls on 3.570 MHz at this time until 6th March.

Friday nights, on the same frequency and time, some of the girls have a chat session so if you are working towards your ALARA award this is your opportunity to gain the points needed. Mavis VK3KS, the awards custodian, has issued over sixty certificates. Remember the new rules as published in the awards column of June '82 AR are now applicable. Contacts made during the contest are also valid for the award.

**NEW MEMBERS**

Welcome to ALARA to Connie VK4ATK; Iris VK4NME; Sue VK2VHG/P2 Sayoko JH1WWS/3; Kazulu JA1BBH; and Joanie KA6V and we hope you enjoy being a part of this friendly group.

Our thanks to Bev VK6NYL for accepting the position of librarian and also to Sue VK3VHG/2 who is VK2 state representative. All positions have now been filled and ALARA is delighted with the response to the call for volunteers.

Remember subscriptions are now due, \$5.00 for VK members and overseas sponsorship airmail rates; \$3.00 for sea mail rates. VK3DVT Valda Trenberth PO Box 4 Brighton 3186, our treasurer, will be pleased to hear from you.

If you would like to sponsor an overseas YL, please send details to Valda and a copy of the current newsletter will be forwarded to her.

Also available are teaspoons, badges and charms with ALARA's logo on them. These would make a nice gift for your YL and perhaps a subscription to ALARA may start her on the way to a call of her own. Details from Valda.

Congratulations to all who sat and passed the exams in August and November. It is a great feeling to know that all the study has been worthwhile and you have achieved your aim. It is just five years since I sat the novice exam and ultimately went on to pass the full call exam. My OM George VK3AGM offered to teach a class at Echuca and our son Stephen and I decided to try for the novice. Stephen is now VK3KBI. As a result of the classes thirty novice licences were issued with most now holding "K" or full calls. Five of these were YLs.

New calls I have heard on air lately are Bron VK3NTD; Kim VK3KIM; Dale VK3PEH; Joy VK4BSJ and David VK7NET. David is eleven years old and if he is not the youngest novice around he must be very close to it. Congratulations David and I do hope you enjoy the hobby, you must be an incentive to others who are studying.

I would like to thank all the girls for your help in the two years I have been writing this column and hope for your support in the future. Photos are still needed for the column, these help me fill in and also gives members an opportunity to "meet" some of our distant members. So please when you go to a convention or field day put the camera in and take a spare photo for me.

Ballarat convention was on Sunday 31st October and I met some of you there. Mavis VK3KS and Joan VK3NLO also attended.

Until next month 33/73/88 to all.

## WHO IS THIS AMATEUR??



He was born in Essex, UK, on the 14th of December, 1891 and later became a crew member of an oil tanker to Philadelphia, then around Cape Horn in a windjammer to San Francisco (six months). Then a windjammer to Sydney (three months). Enlisted and went overseas with the first Battalion AIF in 1914 but returned medically unfit to become a recruiting Sgt in 1915, and settled in Queensland as a carrier and motor driver. Licensed as an amateur radio operator in 1935 he may be heard on the HF amateur bands any day. Other than very poor eyesight he keeps in reasonable health.

Can he lay claim to be the oldest active amateur in Australia???

Yes he is Harry VK4HA. Give him a call.



# HEARD ISLAND, HERE WE COME



Compiled by Hugh VK6FS of the VK6DX Chasers Club

*With the departure date almost upon us, a brief resume of our progress is now presented to give some idea of the magnitude of planning, provisioning, personnel problems and partnership.*

Thoughts about how to mount an expedition began slightly in excess of twelve months ago during regular skeds on ten metres between VK6XI and N2DT, when a small spark of hope was kindled that our most isolated territory would again be "heard". Enquiries were made in some possible areas, and eventually we found that a group of mountaineers from Sydney had similar aspirations and would be delighted to have amateur radio operators join them. From then to now, the midnight oil of many has burned brightly.

The two groups joined forces, presented many individuals and organisations with plans and proposals, maintained very close liaison with each other, and published progress as it happened.

Very early on, amateur involvement was seen as an example where international assistance would be required. No Australian group has ever put together an expedition with an estimated cost of \$30,000 plus provisioning with suitable amateur radio equipment. On air discussions with the original American contact continued. He found that two of the DX Foundations in USA would assist financially.

Now that it had become clear that this was a viable proposition it was decided to ask VK5QX, who was visiting the USA, to make the news known at the Dayton Convention in Ohio. He was then supported by members of the IDXF and NCDXA who each pledged large sums of money to get the expedition on the road. (Maybe on the high seas would sound better.)

Assistance was sought from all the divisions of the WIA and they have responded magnificently. Associateships of the Heard Island Expedition 1983 have been taken up by many Australian amateurs, and some from overseas. We are pleased to say that, at the time of writing these notes, the Australian amateur fraternity have contributed over \$6,000.

Many overseas Clubs have also responded, and due acknowledgement will be given in the pages of AR.

The Expeditions' needs for a suitable vessel led to an Australia wide search, resulting in the maxi yacht Anaconda II being chosen and chartered.

In this type of expedition, with so many facets involved, it was soon obvious that to safeguard all concerned many legal documents, charter agreements, expedition members' agreements, accounting procedures, custom clearances, official government approvals, amateur callsigns, insurances, indemnities, etc., would have to be obtained.

All this took time, and we appeared to have plenty of that, or so we thought in Feb. '82. The months passed by with, at times, horrendous

speed. Each piece of the jigsaw puzzle gradually began to drop into place, the culmination of many sleepless nights, unending paperwork, Telecom boosting ISD calls, deliberate on-air QRM and verbal maligning.

Heard Island was never considered, at any time, to be an easily accessible island to visit with an expedition of mountaineers and radio operators. Now, only a tidal wave or some other unforeseen disaster will stop the VKOHI activation on schedule.

The logistics have been handled by many competent people, some who are professionally competent to do so, others, without qualifications, have attacked the problems allotted to them with enthusiasm and vigour. Early in the planning stage we took Shackleton's quote of "Problems were made to be overcome". We did have to go around some, but generally most were surmounted.

Sir Edmund Hillary KBE has honoured the expedition with his patronage and the Australian Department of Science and Technology gave written approval on 20th September, 1982, for our expedition to land on Heard Island. With this approval the Department of Communications will release the callsigns we have reserved for this rare DX spot.

The radio equipment is now arriving in Perth, with the transceivers being "soak tested", the beams being specially strengthened, and many other items being put through their paces. As an experiment, try placing your favourite 240V extension lead in the freezer overnight — see how it bends in the morning. (Something similar to this shows we really are working).

Arrival Heard Island late Jan. '83 will be the hopes and aspirations of not only those aboard Anaconda II, but the members of the VK6DX Chasers Club as well. Who the members of the VK6DXCC are is of no real concern at this time, except to say the amateur radio DX community should be happy with their efforts. It was never intended that any ego boosting aggrandisement should fall upon their shoulders from getting this expedition successfully underway.

Another prominent DX foundation has pledged assistance to the Dxpediton. The Japanese DX Family Foundation has pledged \$5000 towards the actuation of VKOHI from Heard Island.

From the amateurs of Australia, the divisions of the WIA, the International DX Foundation, the North California DX Association, the Canadian DX Association, along with many other world-wide clubs, associations and amateurs, has come wonderful and heart warming support and encouragement. It was

just such support continuing to trickle through each week that gave us the lift we so desperately needed to carry on through the barrage of criticism we received from uninformed quarters.

## ASSOCIATE MEMBER UPDATE

VK2KNR, 2ZK, 2NKN, VK3AVY, 3ZIT, 3ADH, 3VD, 3BFP, 3DRH, 3PDX, 3AQG, 3VTK, 3AUD, L30253, VK4VBD, VK6WT, 6FY, 6MM, 6NGG, 6YD, 6NID, 6AFT, 6KBW, L60136, VK9ZB, 9NYG, A4XYF, PA0GAM.

## DONATIONS UPDATE

K50VC US\$5., W1EW US\$5, N9BA US\$5, Dr A. Regal US\$50, Acadiana DXC US\$100, Mexico DXC A\$8, VK3NNH \$10, VK7 Anon \$5, VK3YL \$25, W4FRU US\$20, OE1WWL US\$11, YB4AEP US\$10, VK4 Div'n \$100, Virginia Century Club US\$100, JA3ANG/JE3LVB Yen 2000, JH6CDI Yen 1000, VK6IW \$20, JY1. HRH King Hussein US\$500, W4KO US\$5, W0CUB US\$3, W1GME US\$5, JA2LA US\$3, VK5NPS \$10.

## LOAN FOR EQUIPMENT:

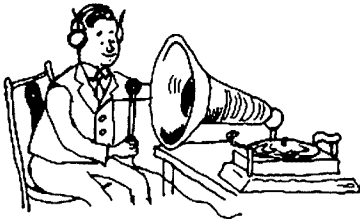
VK3 Div'n \$1000.

For the tower that will carry the beams, the VK6 DXCC are indebted to Hills Industries of Perth for providing the design and manufacture of the metalwork.



Some typical terrain shown by the "slots" on the Baudesson Glacier. H I.

Photo: ANARE 1954. G. Budd



# NOVICE NOTES

Compiled by Ron Cook, VK3AFW.  
7 Dallas Avenue, Oakleigh, 3166.

It is always nice to receive feedback from the readers of this column. Colin MacKinnon, VK2DYM, has written to the editor concerning Novice Notes in the September issue of AR. I will let Colin speak for himself by quoting from his letter.

I refer to the reprint of the N3GO article from Ham Radio re Co-ax cable traps.

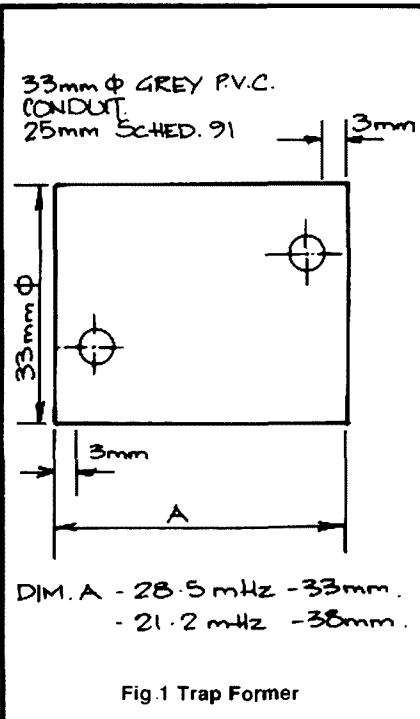
1. N3GO (and your reprint) specified 1 1/4" diameter PVC tube — WRONG — he used 1 1/4" pipe which is in fact 1.66 inches diameter. A letter to HR, Feb '82 pointed out this problem (I'd already found it to my chagrin).

2. The trap frequency depends on the shield coverage. I used a piece of Dick Smith coax which must have about 10% shield coverage and obtained some funny results. Again, HR, May '82 has a letter pointing this out.

By now I had lots of little coax coils on PVC tubes — all NBG.

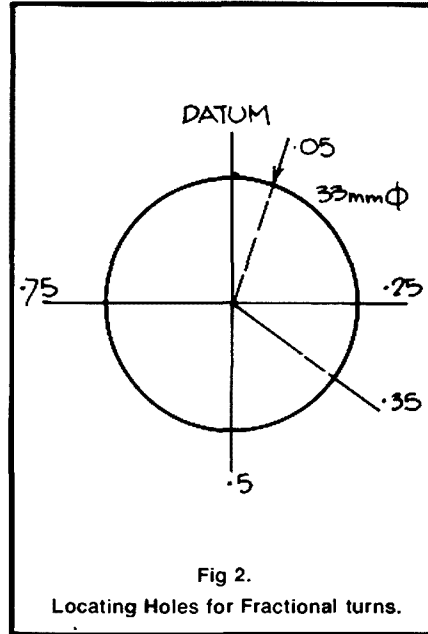
Now — the way I solved the problem was:

- a) To use good quality coax from the same length of cable ie don't mix brands etc — I used new Jackson Commercial RG-58C/U.
- b) I used PVC grey conduit "25mm schedule 91" which has an actual OD of 33 mm and an ID of 30 mm.
- c) For 28.5 MHz I needed 4.05 turns which takes up 33 mm length of former allowing for 3 mm from each hole to the ends. See sketch.
- d) For 21.2 MHz I needed 5.35 turns on 38 mm length of former (See Fig 1)

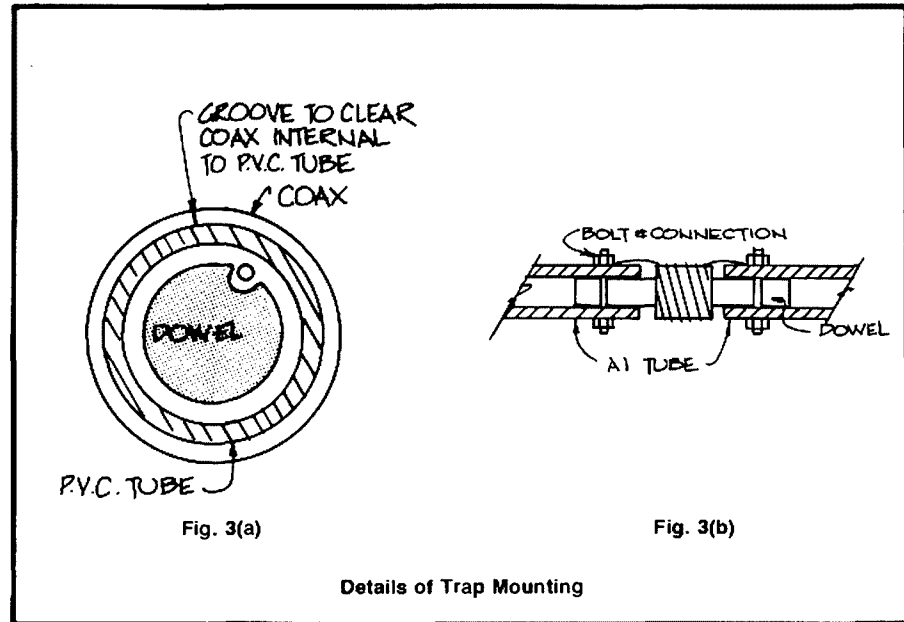


## FEEDBACK

e) To obtain the position of eg .35 turns I divided a circle into the necessary segments then put the tube on it.



I then used a scribe to mark the PVC tube at the two points, ie, at the Datum and the necessary part of the circle (see Fig 2). The rest was as per N3GO's article.



f) I grid-dipped the traps (or actually two friends did) and found a very strong, pronounced dip at the design frequencies.

g) My traps are for a 3 band beam so are fitted onto varnished dowels of 30 mm OD sanded down slightly to fit and with a longitudinal groove to clean the internal nine connections.

h) I haven't made traps for other frequencies (not intentionally anyway!) and the relationship of frequency to number of turns of coax is not linear so it's not easy to extrapolate.

i) I dipped my coils in some encapsulating liquid from Werner Electronics in SA.

j) May '81 issue of QST has a similar coax trap article (p.15) but the same precautions apply re diameter of former and avoiding cheap and nasty coax.

A couple of comments should be made at this juncture. Firstly, it is common practice throughout the world to specify pipes used for carrying fluids by their internal diameter. It is, after all, the important diameter as far as its prime application is concerned. Piping is usually described by inside diameter and tubing by outside diameter. An apparently innocuous change or wording changes the meaning considerably. N3GO used 1 1/4" PVC piping which is 1.66" in diameter on the outside. Our reprint used the same wording as appeared in the original. If we had done otherwise it would not have been a reprint. Now before someone else writes in, I would like to say that, as far as possible, ambiguities such as these are usually pointed out in a note at the end of the reprint. In this case it wasn't picked up and we apologise to anyone who may have been inconvenienced.

Secondly, the US armed forces no longer use RG8 or RG58 series cables. In fact there are many makes of cable carrying these numbers with various letters added to the end. None of these needs to meet the original specifications for the RG cables and most don't. Most are acceptable substitutes at HF if used as a feedline but I would want to see test figures before using any of these inexpensive cables at VHF or in an application such as a trap. A case of **WHAT YOU PAY FOR BEING WHAT YOU GET.**

Thirdly, in constructing any device such as a trap, it is most important to check the resonant frequency with a dip oscillator as even minor variations in physical layout can cause considerable differences in frequencies. Never take the dimensions too much for granted. Even a simple construction such as a quarter-wave vertical needs to be dipped or its VSWR characteristics tested to determine its resonant frequency. In very few cases will the constructor avoid pruning. So it is for traps.

Fourthly, grey PVC tubing may contain carbon and so will be more lossy than white PVC when used in an RF field. My personal experience has shown that the difference in losses is very small indeed but my tests have been few and quite empirical. Other amateurs are quite adamant that grey PVC is to be avoided for RF work. Perhaps all coloured PVC is suspect.

Fifthly, the coax traps described in the QST article are what might be called the conventional traps in that they do not use the "auto-transformer bucking circuit" devised by N3GO.

Finally, and not the least important, I would like to thank Colin for taking the time to write in and share his experiences and knowledge with us. His application of the traps to tri-band beam construction is very interesting.

Perhaps I should close this month's column with another cautionary note. RTV or Silastic is often suggested for use as a sealant and weather-proofing treatment for antenna connections, especially to coax. It seems that in many, if not all cases, acetic acid is released in the curing process; this will attack metals such as copper and make at least as big a mess of the connection as a couple of years in the weather would. It is possible to buy similar compounds which do not release acetic acid and these are strongly recommended as substitutes. Dow Corning 3145 sealant is one of several alternatives.

73 de VK3AFW

AR

## WARNING!!



### Disposing of your old rig??

Please ensure it goes **ONLY** to someone licensed to use it on **YOUR** bands.

## HOW, WHY AND WHAT OF HOME BREWING

**This article poses some of the more interesting questions to the answers of why we bother to construct our own equipment at all.**

For example, these three categories may be presented as the questions:

*HOW do we build what we are building and what techniques are used in the course of construction? Can we persuade someone else to build it for us?*

*WHY is it being built; could we buy the same article cheaper or should we just watch TV instead?*

*WHAT shall we do with it when it is finished? (Other than slacken the jaws of friends and relatives when they first gaze upon the partially completed article.)*

Notably the term 'finished' has no meaning in the art of home brewing whatsoever, just as surely as a capacitor never fully charges, an article of home construction shall never be fully complete.

A prime example of this is given that a man of relative skill could half build up to three projects a week and it could be safely assumed that if the same man diligently redoubled his efforts he could, in the same week, successfully half build up to six projects. This contributes greatly to a second source of guilt and embarrassment: where does one store all these devices when they've finished being half built? This problem becomes quite evident when it is observed that most of the resultant products fall within the parameters of too good to throw away but not good enough to keep. Though the width of these parameters will vary greatly with individuals, it is usually limited by the amount of available living space.

Reasons for embarking upon home construction are usually, though not always, fairly obscure. When posing this question to an individual, the person comes under pressure and will hastily rationalise reasons of finance, education, unavailability and leisure, though often, because it's more fun than writing magazine articles. Regrettably only a minute percentage of all this active creation is anything original. Mostly it is just a duplicate or modification of a previously standardised item. This is not to say that home construction is futile, but that if two thirds of the otherwise total construction time was dedicated to hard thinking about what the remaining third is supposed to be doing, then the resultant product will be half the size and twice as effective as the whole of the original design idea, or pretty close to it.

'How' or 'method' of building is the most important aspect of any potential project. To get anywhere beyond the brainwave stage people must strive to make the most efficient use of their efforts.

The correct choice of size, shape, colour and available facilities (the number of knobs on the front) will determine final performance of the project and the degree of awe with which others will treat it.

It is equally common to exceed the requirements of a task, some people heroically attack such tasks with total patience and precision with results that appeal to the eyes of critics and other lowly animals. Never use glue and screws where sticky tape and elastic bands will suffice or in the words of a recently stolen quotation "Measure it with a micrometer, mark it with chalk and cut it with an axe".

From Butty's Bull in "Gateway"  
(Gippsland Gate Radio Club Bulletin)  
July/Aug. '82 AR



### "WHERE DO YOU GET IT"

Most amateurs read American amateur radio magazines (such as QST, Ham Radio, 73, CO etc.) and look through each new edition of the ARRL Handbook as it becomes available. Occasionally, a project is described which appeals, and you would like to build it.

Then comes the problems over parts procurement. If a printed circuit board is used, then you probably don't have any facilities for making your own from the artwork reproduced in the article. Maybe, the design calls for special components which (we all know) are just not available in this country. So, you give up in disgust and continue to buy fully made up equipment, and dream.

A company in the USA which stocks the sort of items we all find hard to come by is:— Radiokit, Box 411, Greenville, New Hampshire, USA 03048.

If you have ISD, their number is (603) 878 1033.

This company seems to specialise in selling items the radio amateur specifically wants, and which are hard to find. They have a catalogue (including prices) which they will mail to you on request.

They have a very large range of Millen and B&W components — tuning capacitors for antenna couplers, transmitters, receivers, linear amplifiers, etc., angle drives, insulated couplings, bushes etc., switches, amplifier pi networks, rotary inductors. They stock a large range of RF chokes and prewound slug tuned inductors as used in US designs.

They also have PCBs and complete kits for some projects out of Ham Radio and QST. They have a few fixed capacitors, resistors and semi-conductors, but these items are available from many sources.

I bought two capacitors for an antenna coupler, and it was five weeks from posting off the order to receipt of goods. They were very well packed and were unopened by HM Customs. The cheapest way of writing overseas is by Aerogram, and the simplest way of paying for the goods is by a bank cheque, in US dollars, obtained from your bank.

From Gerry VK2BMZ  
writing in QJA, Hornsby &  
Districts ARC Bulletin — June '82

AR

### BBC RADIO CLUB

On 19th December 1982, the BBC is celebrating the 50th Anniversary of the official start of the Empire Service (now renamed the External Service). To commemorate this, Ariel Radio Group has obtained special call-signs and will be using them during the period 1st-31st December.

The stations will be GB2BBC, GB3BBC and GB8BBC in Central London, G3BBC in West London and GB4BBC at Caversham near Reading. In addition several other BBC Club Stations around Britain will participate. The bands in use will be 80, 40, 20, 15 and 10 metres. Maximum activity will be centred around the 19th December. SSB will be the main operating mode on HF.

A special QSL Card will be issued for contacts made with these stations.

AR

### INTERESTED IN A SPECIAL SERVICES NET?

Ex allied commandos and special operations people of all services should QSL BILL, VK3DMP, BOX 182 GISBORNE 3437.

AR

## AN OPEN LETTER TO THE INTRUDER-PLAGUED RADIO AMATEURS OF AUSTRALIA

33 Somerville Rd.,  
Hornsby Heights, NSW, 2077.  
December, 1982.

Dear fellow-amateur,

The time has come to launch an urgent appeal for help from all concerned amateurs to assist in ridding the amateur bands of intruder stations. World-wide information reveals that INTRUDERS ARE ON THE INCREASE. If we project this situation to its possible conclusion, we may eventually find ourselves in a situation where our on-air working conditions might appear to that of the Intruder primary service. It's almost too awful to think about. But we must think about it, AND NOW. The Intruder Watch asks you to report any intruder stations you hear on the amateur bands. I can assure you that any reports you may send will be gratefully received and processed for ultimate re-direction to Intruder Watch Headquarters in the UK.

We desperately need reports on intruders from as many Amateurs as possible to keep the Intruder Watch an effective proposition. In effect . . . NO REPORTS, NO ACTION POSSIBLE.

You may feel that any reports you may send are consigned to the depths of some bottomless un-resonant cavity. This feeling stems from the fact that the whole process of intruder-removal is a very slow one, and we assure you that because there is no apparent, immediate results forthcoming, your reports have not been sent in vain. Obviously you must feel as I do, that the intrusions into the amateur bands of unauthorised commercial and military stations.

The Intruder Watch cannot function without your support. The Intruder Watch serves NO OTHER PURPOSE than to work on your behalf, as your wishes the intruders to blazes, but, unfortunately, "just can't seem to find the time to send in a report." What can we do about the situation? Much . . . But it must be done in an efficient, concerted fashion by an organised group who have the expertise to deal with the problem which will not resolve itself un-aided.

The Intruder Watch serves NO OTHER PURPOSE than to work on your behalf, as your representative, to try and eliminate the scores of intruders which could, ultimately, dominate the Amateur bands.

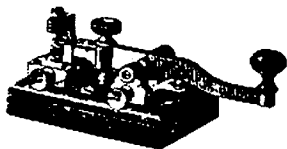
Dare we ask that you help us occasionally? What do we in fact ask of you? Merely that you send, to your Divisional Co-ordinator, details of any intruders you may hear on the bands in the daily course of your on-air activities.

When we eventually do manage to force an intruder to QSY, you can then derive some satisfaction in the knowledge that it was done with your assistance. The results may take some time to become apparent, and are in direct proportion to the participation of you, the average amateur.

We'll keep slogging away at the intruders, until we wear them down. You are under no obligation, other than to yourself, Only you know how you feel about the presence of intruders on OUR bands. Send us reports of intruders you hear, and we'll take up the cudgel on your behalf. Keep the amateur service the PRIMARY service on the amateur bands.

At this time of the year, we offer the compliments of the Season to all readers of Amateur Radio, and urge you to join forces to give intruders a hard time in 1983. Remember — Amateur Radio is a hobby to be enjoyed — Let's enjoy it.

73. Bill Martin,  
VK2EBM,  
Federal Intruder Watch Co-ordinator.



# POUNDRING BRASS

Marshall Emm VK5FN (ex-VK2DXP)

Box 389, GPO Adelaide 5001.

## CW CONTEST OPERATION

There are so many different aspects of CW contest operation that it's difficult to decide where to begin. There are CW Only contests, contests with separate sections for CW operation, and mixed-mode ("open") contests. One can enter as a serious contestant, use CW to supplement a phone score, or participate on a casual basis with no intention of submitting a log. There are some fringe benefits to participation in a CW contest which make it attractive to the "non-contesters" among us — you can experience a wide variety of sending styles and speeds in a very short time, and significantly improve your "ear" and copying ability while you're at it.

As with any contest, the basic point of it all is to make as many contacts as possible, as fast as possible. Therefore contest exchanges are cut down to the bare bones. A typical contest exchange requires call sign, signal report (RST), and a contest number (serial number, zone, or age, etc.) and would look something like this:

CQ TEST DE VK9ABC K  
DE VK2DXP K  
VK2DXP NR 5 N N TT8 BK  
R TU UR NR 5 N N 123 BK  
R ES GL E E CQ TEST . . .

*There isn't much to it, is there?* And when you consider that most of these exchanges take place at 20-30 WPM or faster the contact rate can be very high indeed.

Looking at the sample exchange piece by piece, the first element is the CQ contest call. Quite often this is specified in the contest rules, but if not, common sense and efficiency should

prevail. The Remembrance Day Contest call is CQ RD; the John Moyle Field Day call is CQ FD or CQ JM; when in doubt CQ TEST is just fine. The call should consist of the CQ, your call sign, and K, sent *once only*, allowing three or four seconds for a response before repeating.

The answer to a call should be simply "DE your call sign." The assumption is that if you answer on the same frequency, you must be answering the CQ.

The station calling CQ should send the responding station's call sign once (because there may be several stations answering) and will then give the signal report and contest number. Repeats are usually not given unless requested. Signal reports are usually given as 5/9/9 regardless of the facts of the matter, and I shall refrain from making any further comment on that subject! Numbers are coded if practical (N=9, T=0), so an exchange of 5/9/9 008 would be sent as 5 N N TT8. BK (or break) is then sent to invite the other station to transmit. Often it is sent as B (space) K, and sometimes K is used by itself.

As is the case on phone, it is up to the station which called CQ to send any pleasantries (such as GL E E) and he may or may not listen for an acknowledgement (E E) before calling CQ again.

Unlike most CW activities, successful participation in a contest does not depend to any great extent on your copying speed for "normal" CW. You can generally work a station calling CQ at twice to three times your normal copying speed. Firstly, the format is so standardised that all you have to pick out is a call sign and a number. You can listen to two or

three calls before answering in order to be sure of the call sign; you can listen to the next contact the guy makes in order to verify the number. Secondly, asking for a repeat is as simple as sending a question mark. For example, if you missed the number, you send "NR ? K." Finally, although you may start out listening to CQ calls three or four times, it doesn't take long before you can pick them first time. More will be said on this subject in a future column, but it is generally recognized that any 5 WPM novice can recognize a single character at speeds up to 50 WPM; a string of three or four characters at 25 WPM is certainly possible.

As far as sending speed is concerned, you should send as fast as you can and still be readable at the other end. But as I've said before, it is only reasonable to send the minimum to get the job done. If the other station wants a contact (why else would he be in the contest?) he'll be patient.

That pretty well covers the aspects of contest operation which are unique to CW; questions of whether to call CQ or "search and pounce", when to change frequency or band, when to have supper or try to pacify the XYL — all these are matters for judgement based on experience and CW is no different from phone in that regard.

By all means dust off that key the next time a contest is on and hand out a few numbers — you will probably be hooked. Season's Greetings to all.

73 FER NW.

AR

## IS YOUR CW DOWN THE DRAIN?

It is a great shame that so many of you let your CW ability deteriorate. Many found the task of passing that 10WPM examination an extremely difficult one, and having achieved a pass, have vowed never to touch a key or listen to Morse again.

How many can remember back a few years when conditions were very poor? I can remember saying that they could not get any worse, but they did!

The same thing is going to happen all over again, as Cycle 21 is going downhill fast. Sure, we will see a little improvement in high frequency propagation during the summer months, but it will be even worse next winter and so it will go on for several years. The pattern will repeat each year and each seasonal rise and fall will see a steady decline.

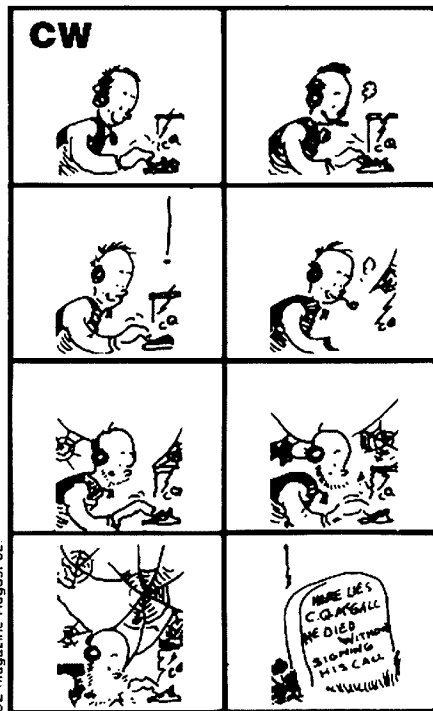
There will be times when DX will be coming through on one band or another. There will be times when you will be able to use SSB for DX contacts, but I can guarantee that CW will give you much better communications for longer.

Now is the time for you to brush up your Morse proficiency. All it takes is practice, just a little bit every day or as often as you can. There is plenty of CW practice to be had, there is slow Morse every evening on 80 metres and surprise, surprise, there is actually CW being used at the low end of most of our bands. Have a contact on CW, there is nothing like the real thing. It might put a smile on your face, a smug smile, especially when the phone boys are complaining about rotten conditions.

VK4OY, Editorial in "QC"  
OCT 82

AR

CZ magazine August 82.



# NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ  
FEDERAL EMC CO-ORDINATOR

38 Wattle Drive, Watsonia 3087

In these days of modern amateur equipment and colour television, the incidence of TVI is, in most cases, the fault of the television system, not your amateur equipment. In by far the majority of cases, the reason for interference is found to be inadequacies of TV receiver/TV system design and construction.

Audio devices are designed to amplify audio signals such as music or speech and are not intentionally designed or intended to function as receivers of radio signals. The problem is not caused by the improper operation or by the technical deficiencies of the radio transmitter. The strong electromagnetic energy is accepted by the audio circuitry due to inadequacies in design "overloads"; the amplifier is "rectified" and amplified, and appears at the speaker as an undesired sound. The only "cure" is by treatment of the audio device.

This brings us to another problem area for the amateur radio operator — interference to his reception by incidental radiation (man made noise). Overhead power lines are without doubt one of the biggest contributors in this area.

"It is an unfortunate fact of life that in the majority of cases, right or wrong, the minority are persecuted by the majority." The Amateur Radio Movement is no exception! World-wide, radio amateurs have been fighting their case against unjust persecutions by authorities over "Radio Frequency Interference" for many years.

The true cause of most interference problems has been (and still is in many cases) the susceptibility of domestic entertainment equipment and consumer products to unwanted information.

Interference is rather like our home insurance — we don't think about it until we are in trouble! In order to try and ensure that data and advice is available when required the service has a team of technical advisers and a large amount of information on file. Our information files are being constantly updated. However, due to the complexity of this very wide subject we must rely on the co-operation of all Australian amateurs for a large percentage of this information. If you have any information, ideas, suggestions, comments, etc. in connection with EMC, please don't sit on it — pass it along.

If you have an EMC problem, don't wait until it gets to major proportions — send the details along. Law suits and legal battles can be very expensive. One of the main aims of the service is to try and ensure that the problem does not get to law.

EMC advice is available to all Australian amateurs through the National EMC Advisory Service. The main aim of the service is to try and ensure that all Australian amateurs have access to the best national and international EMC advice and technical information.

On behalf of the EMC Advisory Team — "Seasons Greetings and Best Wishes for 1983." — Let us end this year with a couple of humorous stories.

From Western Australia, Rex Ranieri VK6KO says:

*TVI is nothing new. The average suburban amateur operator knows only too well the effect of "firing up the linear" whilst a popular Sunday night movie is showing on the box. Just about every amateur at one time or another has had to deal with various TVI pro-*

## "THAT WAS THE YEAR — THAT WAS"

**Well here we are with just a few weeks to go to the festive season, and the end of another year of the "interference" battle.**

**We have had the "Directory of Assistance" — "Cable TV" — "the run-up to the Radiocommunications Bill" — to name but a few of life's interesting activities.**

**Before we close for this year, perhaps we should remind ourselves of a few of the basic details and principles of interference problems.**

*blems, so it is not surprising that TVI in general is taken a little for granted. The following anecdote however is a bit out of the ordinary, in fact it could possibly qualify for some sort of "World TVI Record".*

*It occurred some years ago (my ego has now recovered sufficiently to be able to write about it). I held a novice licence then and was in the process of building a 10 metre-80 metre transverter. The construction of the boards and chassis were complete and the unit was ready for line up and testing. I decided that since I worked for a TV Studio (fortunately I still do) I would take the opportunity to use some of their sophisticated test equipment. So, after obtaining appropriate permission, I went to work.*

*In a short while the receiver was operating to my satisfaction and attention was turned to the transmit section. Dummy load connected and drive applied, it appeared to be operating normally, so, after a final check I plugged it into an antenna and proceeded to tune up "on air" . . . unfortunately signal also appeared on the Studio's transmission output . . . PANIC! It seems that 3.5 MHz is neatly within the normal 5 MHz TV vision band width (composite video in studio systems is 0-5 MHz) and the close proximity of 3.5 MHz signal was too much even for the normally well shielded video apparatus.*

*Although the "TVI" did not disrupt the picture too severely it was nevertheless noticed by several technicians. (How embarrassing). About 30 seconds had elapsed before I realised what was happening and turned off the transmitter.*

*The normal viewing audience of the station is almost 200,000 people and with my luck they were probably all watching.*

*TVI on this grand scale is nothing to be proud of, but the incident is worthy of note. I will certainly not forget it for quite a while.*

Now, an Irish tale for South Australia, Rob McKibbin VK5ARO says:

*My first brush with death came in January 1977 when I lofted an 11 metre ground plane onto my brand new roof in my brand new "quiet" residential suburb north east of Adelaide. When my XYL and I first found this block of land, the lack of trees (reflections), overhead power cables (QRN), and most importantly, amateur antennae (QRM), hit me like the Cannonball Express. Even in my days of Citizens Band I was planning an assault on the Amateur fraternity. However, in the shadows lurked weekend lawyers, conservationists and plenty of drongoes with nothing else to do. I unleashed 4 watts of amplitude modulation which sent shock waves throughout my Peyton Place with the force of an atomic explosion.*

*Having obtained Novice status shortly thereafter an ex DCA free standing tower was immediately pressed into service; deputations from the "Save our neighbourhood" group hit me with the kick of a 4 kilowatt amplifier. Naturally the local Council came knocking on my door. However, they were more than embarrassed at being unable to comprehend the computation of the actual height of my structure with the use of a theodolite and trigonometric functions — 10 metres on the dot; that got rid of them. In my Council area, planning consent or building approval was required for antenna supporting structures under 10 metres. This has recently been amended/extended to 15 metres, however building approval is required for 10-15 metres (Corporation of the City of Tea Tree Gully).*

*Today my equipment includes a Kenwood TS180S driving a TL922 linear and these light up a TH6DXX antenna at 10 metres.*

*Prior to erecting the tower I consulted with all my neighbours who indicated strong resistance to high structures. I had the hardware to give me 80 feet and at this height the ensuing TVI problems may not have been as severe as experienced by various people (including myself) in the passing months. My number one solution was to demonstrate the effect of high pass filters by hopefully achieving a QRM-less environment in my own home. Having a video recorder in line with my outdoor antenna (with shielded 75 ohm coax) did not make a solution easy to come by. Without the video I achieved dramatic success with the use of a \$2.00 filter and a 1:4 transformer. Slight indications of colour fading were readily apparent whilst transmitting on 20 metres, and believe it or not the change-over to a squiggly indoor antenna gives my XYL crystal clear viewing at all times — including when I am on 40 and 80 metres. Apart from enclosing my video machine completely in a "shield" box I have as yet not been able to solve the VCR problem (the distributors in Adelaide washed their hands of the problem).*

*So, with all the confidence in the E-layer I decided to talk turkey with the dissidents. Talk turkey indeed, I couldn't get a feather in sideways despite my remarkable claims. My list of crimes were read to me: soaking pets with cancerous radiation, literally exploding a colour television at 120 feet, and driving 19 people to the rubber room. Could these be*



the same people I handled emergency traffic for when Telecom pulled the big plug? Are these the people with the noisy dogs, drills, motor bikes, stereos, etc? Confusion ran rampant in my teeny Northern Irish brain. I decided it was time for a "test, hello test, hallooo"/dxpedition. Three homes were immediately swept aside due to mass interference (claimed) whilst my big plug was removed.

Three others greeted me with big cheesy grins as I clearly demonstrated (on their receivers) the awesome power of a \$2 note and in some cases a free antenna. That left one — and ohhh what a pain. Naturally DOC has been a busy little beaver up here yet my station gives them little reason to suspect a fault with me. Low-pass filters (after exciter and after linear) coupled with an extensive earth mat (12 Cu rods interlaced) under my

garden leave little else for me to do (bar possible faults in my black box).

Consider this typical conversation with my next door neighbour: (4th July 1982)

On leaving my shack I hear a voice in the darkness

SHE SAID "You've got a big mouth Irish ..."

I SAID "I never thought you would notice — what's wrong?"

SHE SAID "Get ..."

I SAID "Would you like me to transmit for another hour?"

SHE SAID "You're dead"

And so it goes on. An eternal circle of ridicule and foolishness. The police aren't too interested unless my body is crushed underfoot, DOC can't do too much until an acceptable outdoor antenna and shielded coax system is installed with the TV.

I now come to the end of my story. I have plans to erect a much higher mast in advent of the amended Council policy — this time, and hopefully, a reduction in TVI will result.

In summary, I have found ignorance to be my worst enemy — the inability of people to realise the use/availability of filters and more importantly that we, as licensed operators, have as much right (or privileges) to participate in our hobby as would the next door neighbour turn up his stereo or run a lawn mower at 9 am on Sunday morning.

Also after watching some war film footage on TV my ability to comprehend this big problem diminishes.

So, never despair people: look at the trials and tribulations I have had and I'm only on 2 hours a week.

AK

## ON THE AIR — 4K1A

by Master of Sport of the USSR S. Kuz'min,

UQ2OC, ex-4K1OC

THIS ARTICLE IN RUSSIAN ORIGINALLY APPEARED IN "RADIO" No. 4 — 1982. SUMMARY TRANSLATION COURTESY OF DEX ANDERSON W4KM.

D. H. Rankin 9V1RH/VK3QV

Twenty-six years ago, on 13 February 1956, the first Soviet station — Mirny — was opened in the Antarctic.

Three radio stations represented the anniversary 25th Soviet Antarctic Expedition on the amateur airwaves: Oleg Kazak, UA1CMA, operated from the Mirnyy Observatory with the call-sign 4K1B and was often heard in the CW portion of the 20-metre band. From the cold point on our planet, the intra-continental station Vostok, the call-sign 4K1C rang out; the operator was Rem Vostretsov, who has participated in more than one Antarctic expedition. He showed up regularly in the SSB portion of the same band. I was assigned to winter over at Molodezhnaya. Besides me, Gennadiy Podgor'nyy, UB5LHO, from Khar'kov, and Yuriy Afanas'yev, from Leningrad, operated at 4K1A.

All of us were in Antarctica for the first time, so our interest in and attempts to operate from the other Hemisphere are understandable. But there was no amateur equipment as such at Molodezhnaya and none of us had brought his own along. We had to start practically from scratch. First we directed our efforts to antennas since it was already March and the Antarctic winter was approaching, with its long polar night, storms, and hurricane winds. In a short time we equipped an operating position, erected a transmitting antenna, and restored to service an old worn-out transmitter. And some time later we also assembled an SSB exciter on 14MHz. In general, we were able to operate with telegraphy on all shortwave bands except 160 metres.

During our wintering-over, about 6,000 QSO's were made at 4K1A. Great attention was paid to the 80-metre band. Conditions were good: Receiving rhombic antennas with amplifiers and clean airwaves enabled us to hear European stations almost daily. The favourable location of our station also had an effect. This is explained by the fact that Molodezhnaya is situated on a high-cliff coast, and the height of the antennas above the

ocean level reached 100 metres. On 3.5 MHz alone, about 1,000 QSO's were carried out.

### A FEW WORDS ABOUT PROPAGATION PECULIARITIES

Strange as it may seem, stations from South America and Oceania came through weakly at Molodezhnaya. In contrast Africa "boomed in" around the clock. We also had solid reception of Japan, Europe, and the USA. It turned out that many African stations operate on 80 metres, but in Europe they are rarely heard on account of serious interference.

The interest throughout the world in our station was great. Contacts on 3.5 and 28 MHz were especially popular. Unfortunately, the press of our basic work did not permit us to devote a great amount of time to amateur contacts. Nonetheless, we attempted to devote every free minute to them.

The beginning of the Antarctic Spring was marked by a happy event for me. In September I received long-awaited permission to operate with the personal call-sign 4K1OC. In five months I carried out almost 2,000 QSO's with it, on five bands.

It is necessary to say that, operating on the air, we did not give preference to rare stations. We got great satisfaction from meeting Soviet shortwavers on the air. But among the most interesting we would mention QSO's with our polar colleagues from the northern Hemisphere: UA1PAL, the polar station on Franz-Josef-Land; UA0DY on the Lyakhov / Lyakhovsk? / Islands; UPOL-22. We also recall our intracontinental contacts. Regular traffic was passed on the amateur bands between the three Soviet Antarctic stations and also the foreign stations Mawson (VK0SJ) and Sanae (ZS1ANT).

In conclusion, we would like to take this occasion to thank again all of the stations we regularly stayed in contact with — UA1MU, UQ2PM, UQ2GDC, UW6NF, and UW9WR — for their steady assistance and support, thanks to which we did not feel alone on the icy sixth continent.

AK

## PROJECT MIREK

At the July meeting of the Eastern and Mountain District Radio Club (Melb.), the Club Committee decided to join with Frank Vander Drift VK3NGZ, in his sponsorship of Mirek Rozbicki as a migrant to Australia.

Mirek is an amateur and holds the callsign SP5IXI but is presently operating portable from Austria to where he fled from his native country. He had to leave Poland without his possessions and has been living in a refugee hostel in Vienna for over a year. Mirek is 24 years old, single, and has completed part of an engineering degree.

The project was presented to the August General Meeting of the Club, and those present signified their agreement with acclamation.

It was agreed that with a project such as this, all members, and others, should be given the opportunity to help a fellow amateur start a new life in our country. The Club's involvement is to guarantee Mirek's air fare from Vienna to Melbourne, and already many members have made contributions.

Mirek has been accepted by the Australian Immigration Authorities and has now received his visa. The club will pay his fare at Qantas in Melbourne, and the ticket will be transferred to him.

Frank VK3NGZ has recently had letters from Mirek who is aware of what is happening and expresses deep gratitude to his benefactors. At the time of writing this, he had temporarily left the hostel at Mariazell, near Vienna, and was working in Graz in the south of Austria. His part-time job is at the local McDonald's food outlet!

### LATE NEWS:

The above information was taken from the president's message in the Radio Bulletin, Sept. 1982. John Hutchinson VK3JH now informs AF that Mirek has been booked to fly out of Amsterdam to arrive in Melbourne on Saturday, 20th November, 1982.

The December meeting of the EMDRC is to be a "WELCOME MIREK" evening, and by the time you read this Mirek should be well and truly established in his new country.

AK



# VHF UHF - an expanding world

Eric Jamieson VK5LP  
1 Quinns Road, Forreston, 5233

## AMATEUR BAND BEACONS

| Freq.   | Call Sign | Location            |
|---------|-----------|---------------------|
| 50.005  | H44HIR    | Honiara             |
| 50.008  | JA2IGY    | Mie                 |
| 50.098  | KH6EQ1    | Pearl Harbour       |
| 51.022  | ZL1UHF    | Auckland            |
| 52.013  | P29SIX    | New Guinea          |
| 52.100  | VK0AP     | Macquarie Island*   |
| 52.150  | VK5KK     | Arthurton           |
| 52.200  | VK8VF     | Darwin              |
| 52.250  | ZL2VHP    | Palmerston North    |
| 52.300  | VK6RTV    | Perth               |
| 52.320  | VK6RTT    | Carnarvon           |
| 52.330  | VK3RGG    | Geelong             |
| 52.350  | VK6RTU    | Kalgoorlie          |
| 52.370  | VK7RST    | Hobart              |
| 52.400  | VK7RNT    | Launceston          |
| 52.420  | VK2W1     | Sydney              |
| 52.425  | VK2RCB    | Gunnedah            |
| 52.435  | VK3RMV    | Hamilton            |
| 52.440  | VK4RTL    | Townsville          |
| 52.500  | VK2BNT    | Newcastle *         |
| 52.510  | ZL2MHF    | Mt. Climie          |
| 53.000  | VK5VF     | Mt. Lofly           |
| 144.400 | VK4RTT    | Mt. Mowbullan       |
| 144.420 | VK2W1     | Sydney              |
| 144.430 | VK3RTG    | No advice of site   |
| 144.465 | VK6RTW    | Albany <sup>3</sup> |
| 144.475 | VK1RTA    | Canberra            |
| 144.480 | VK8VF     | Darwin              |
| 144.550 | VK5RSE    | Mt. Gambier         |
| 144.600 | VK6RTT    | Carnarvon           |
| 144.800 | VK5VF     | Mt. Lofly           |
| 144.900 | VK7RTX    | Ulverstone          |
| 145.000 | VK6RTV    | Perth               |
| 147.400 | VK2RCW    | Sydney              |
| 432.410 | VK6RTT    | Carnarvon           |
| 432.440 | VK4RBB    | Brisbane            |
| 432.450 | VK3RMB    | Mt. Runinyong       |

It seems 6 metre operation from Macquarie Island will now be via Peter VK0AP and on 52.100 (refer November AR). It is great to find the area being activated again after such a long break.

\* Indicates new beacon, advice received via VK2ZVV. Built as a project by the Newcastle Technical College, running 4 watts to a ground-plane antenna, keying FSK upwards. At the time of advice the beacon was at the testing stage so it seems reasonable to expect it to be operating in time for the summer Es season.

3 Indicates advice has been received via Bob VK5ZRO that Aub VK6XY had indicated the Albany beacon was once again operational on 2 metres on a frequency of 144.465 instead of the former 144.500 MHz. Indications are that the beacon is operating from the new projected site of the old whaling station. The beacon has already been heard weakly in Adelaide. The 52 and 432 MHz beacons are planned to be operating before long.

## SIX METRES

Certainly has been quiet along the southern areas, and quite surprisingly so quiet throughout the spring equinox. There have been the occasional openings to Japan, the most recent one being over the weekend of 24/10 when Bob VK5ZRO reported hearing JA's at 0200 UTC and working a JA8 at 0237 UTC. The band opened again at 0700 UTC to JA2, 4, 7 and 8. Signals were also heard from VK2 and VK4 at

the same time indicating the JA's were assisted by Es from those areas.

6 metres also seems very quiet across the Tasman in New Zealand at the moment, reports filtering in show little to talk about.

## SIX METRES OVERSEAS

Bill W3XO from "The World Above 50 MHz" in QST October 1982 also has not been reporting so many long distance happenings, other than the summer-time (US) Es contacts.

It is interesting to read of the exploits of those concerned in the Saint Paul Island DXpedition from 8 to 13 July. The team included VE1ASJ, VE1CER/AK4L, VE1AI, VE1FH, W1XX, W1GNC and K1WJ. They worked four hundred and fifty stations on 6 metres in all US call areas except 6 and 7. During the peak of activity on the Sunday evening VE1ASJ, who did most of the 6 metre operating, worked one hundred and sixty contacts in a single hour! Equipment consisted of a TR-6 and a Cushcraft 617-6B.

This same DXpedition took along 2 metre equipment with the idea of trying some moon-bounce. They had a 1 kW ARCOS amplifier using a pair of 8930's, feeding four Jr. Boomers through sixty feet of 3/4 inch hardline. An ARR 0.5dB GaAs FET pre-amp, a Microwave Module transverter and a TS 520S completed the line-up. No EME contacts were made, due in part, to difficulty in locating the moon because of larger than expected magnetic compass errors. However, the Es of 11/12 July made up for that, with a wild six hour binge resulting in some one hundred and ten QSO's in US call areas 2, 3, 4, 8, 9, and 0, plus VE3. Longest distance 2065 miles. The following morning a tropo opening down the coast resulted in S9+ signals over considerable distances. They were unlucky however, in that, having to leave on the 13th July, they missed by only a few hours the huge aurora opening that began that evening, and was to prove to be the biggest aurora to occur this decade! SUCH IS LIFE!

## THE COLD SOUTH!

As mentioned under the beacon list, and following on from the article last month, it is good to see Macquarie Island being activated again, and with equipment capable of putting out a strong signal if required. Es contacts have been made in the past with such areas and there seems no reason why it cannot be done again with a dedicated operator at that end. We thank those VK3 amateurs who so quickly got into the act to provide the equipment.

Heard Island will also be coming on eventually with the call sign of VK0HI from a TS660 and 100 watt Lunar amplifier, the latter kindly loaned by Gil VK3AUI. More on this one later.

A letter arrived on my desk in a roundabout manner, via VK3AUI, from Mike VK9ZYX who is operating from Cocos (Keeling) Islands, address PO Box 8, Postcode 6799. Mike reports he is in the process of making an amplifier to fit inside the 2M100W to provide the 12 watts drive needed, so looks like some 2 metre activity will be on the way from there before long. Mike is also modifying an HF linear to run an 8875 tube for 400 watts on 6 metres, so this may be another possible area for those requiring it.

## SIX METRES FROM JAPAN

Graham, VK6RO, has written enclosing information of activity in Japan at the moment, including information on that very successful Japanese operator, Nori, JR6IGG, who has worked fifty seven countries on 6 metres, with fifty five confirmed! What a great effort and we offer our congratulations. Nori lives near Fukuoka in Tosu City, and uses an eight element yagi and an IC551 or TS660. Nori reports that during the Es just passed he heard VS6SIX in Hong Kong nearly every day, but no activity!

As it might be of interest to VK stations to see what they have missed through living in the Southern Hemisphere, here is the list of stations worked by Nori, JR6IGG, on 50 MHz, plus those calls with VK prefixes on 52 MHz. The first station listed date-wise is on 13/8/79 and being HS1WR in Thailand, and the last is on 22/11/81 with HC2FG in Ecuador, which is a span of a little more than 2 years. The list is as presented by Nori, and not in order of dates. 3D2CM Fiji; ZB2BL Gibraltar; EL2FY Liberia; KC6IN Eastern Caroline; P29ZFS Papua New Guinea; KC6SZ Western Caroline; KH6IJ Hawaii; WA4TNV/KL7 Alaska; KH6QC Marshall Island; YB1CS Indonesia; JD1ALV Ogasawara Island; FK8AX New Caledonia; A35DX Tonga; ZD8TC Ascension Island; W1HOY/KP4 Puerto Rico; VU2JPN India; C21AA Nauru; ZK2DX Niue; AH8A American Samoa; PY5BAB Brazil; 5W1AU Western Samoa; LU3EX Argentina; T2AAE Tuvalu; T3AZ West Kiribati; 5Z4CS Kenya; T3LAA Republic Kiribati; VS6EZ Hong Kong; ZL2CD New Zealand; VS5SS Brunei; H44PT Solomon Islands; 9M6BE East Malaysia; KG6JDX Guam; 4S7EA Sri Lanka; ZS2SS South Africa; KH0AB Saipan; YJ8PD New Hebrides; VK9ZD Willis Island; JD1YAA Minamitorishima Island; VK9NS Norfolk Island; HS1WR Thailand; 8Q7BK Maldives; HM2JD Korea; VK9XW Christmas Island; VK9ZYX Cocos (Keeling) Islands; HC2FG Ecuador; WB7AJP USA; CX8BE Uruguay; CE3DZ Chile; VE7LB Canada; VK2BA Australia; 5B4AZ Cyprus; CR9JA Macau; HC8VHF Galapagos; DU1AOS Philippines; JG2QMZ Japan; 9N1BMK Nepal and FW0BK Wallis & Futuna Island, the last two not yet having been confirmed.

If your mouth is not already watering it soon will be when you give thought to how many of those countries some of you would have heard on 50 MHz and were not able to work because of our 2 MHz difference. One very noticeable missing country from Nori's list is Mexico, one which has figured fairly prominently in Australia even as far as VK5. Also there are some more countries in the Caribbean area and the Atlantic so I would think Nori will not be content until he has gathered all those remaining. However, a most creditable performance.

The Japanese CO amateur radio magazine (courtesy JR6IGG and VK6RO), for July 1982 has a graph showing the solar flux for 1981/1982 as reaching a high of 305 on 12/12 with openings to W6 and W7, it then went down to 138 on 20/12, a rise to just under 200 on 1/1, 147 on 15/1 then to 301 on 1/2 with good contacts to VK and ZL, 180 on 15/2 and 250 on 3/3 and working ZD8TC, ZB2VHF etc. Various

small rises and falls are recorded with a peak of 235 on 15/3, 185 on 12/4, 145 on 20/4, 185 on 25/4, down to 127 on 13/5 then a small climb again. Throughout April however, such exotic places as ZB2, 5Z4, EL2, VK9XT, VP2, 9Y4, PJ9, 3D2, A35, ZL were worked by some stations.

The same issue of the magazine carries an outline in Japanese of the exploits of Steve VK4ZSH and his DXpedition (reported in AR recently) through the Northern Territory and north Queensland to work Japan on 2 metres.

#### FROM CARNARVON.

With the return of Andy Hemus VK6OX to Carnarvon, that area is again on the map. I had the pleasure of meeting Andy during my around Australia trip recently, and hopefully the little push I gave him to keep trying for various contacts and bands will bear fruit!

As a forward sample, read this. 22/7 JA to S9 on 50 MHz at 0800 UTC. 24/7 JA's on 52 MHz at 0830 UTC. JA2VFH reports VK6RTT beacon 599 at 0850 UTC. 27/7 JA1, 2, 7 and 0 from 0902 UTC. 8/8 50 MHz full of JA's at 0730 UTC. 15/8 JA1, 8 and 0 0752 UTC; 18/8 most JA areas from 0847 UTC. 19/8 JA2, 4, 5, 6 0857 UTC. 24/8 good JA opening, JA2IGY 599 0654 UTC. Band closed 0709 UTC! 26/8: Indications of summer tropo occurring, Geraldton TV, 500 km south full colour on Ch. 11 at 1150 UTC. 23/9 all JA areas worked 0839 to 0937 UTC. 25/9: short JA opening 0422 to 0455 UTC. 29/9 JA1, 2, 3, 6 and 9 from 0920 UTC. 17/10: JA at 0919 UTC.

17/10: Trough down coast. VK6RTV on 145 MHz weak at 1100 UTC, also audible 0020 UTC. At 1120 UTC received phone call from Tony VK6BV that he was hearing VK6RTT on 144.600. At 1122 UTC had contact with VK6BV on 144.100 with signals to S7, concluded 1154 UTC with signals fading. At 1155 UTC Wally VK6ZWO at Mullewa called on 144.1, signals 5x6 both ways.

At 1240 UTC another phone call from VK6BV — "I can hear VK6RTT on 432.410 MHz!" Contact resumed on 144.100, then test transmission heard from VK6BV at 1240 UTC, signals 469 due to power line noise. At 1244 UTC commenced 2 way SSB contact on 432.100 with signals peaking S8 both ways. QSO concluded 1315 UTC, after attempting to recontact on 144.100 but with no results! No other signals heard on 2 metres. Both used MMT 432/28 transverters barefoot with 10 watts, Tony's antenna sixteen element yagi, Andy's fourteen element ATN at 18m. Good work chaps, didn't I tell you it could be done!! The calculated distance for the 70 cm contact is 808.59 km and all over land. GOOD WORK.

#### VK2AMW EME STATION

Lyle VK2ALU reports in "The Propagator" that construction on the 1296 MHz transmitter is continuing, with the power supply almost completed and the aluminium pipes have been obtained for the dish feed tripod. 1000 metres (!) of 440 volt cable is on hand for the many runs of 240 volt power and control cable between the operating building and the dish. Reading the articles one gets the impression there is still a lot to be done, but at least it is on the way. GOOD LUCK, PLEASE ADVISE WHEN READY.

#### JOTTINGS FROM ANYWHERE

The South East Radio Group in Mt. Gambier advise they have a new 2 metre repeater operating from "The Bluff", and the 2 metre beacon is also operating from Glencoe. Applications have been lodged with the City Council to install antennae at the clubrooms for HF, 2 metres and 70 cm.

Graham VK6RO makes a plea that if we are lucky enough to get 50.000 to 50.150 MHz that

we use 50.050 as a call frequency, so by changing the band switch only on most equipment it would be possible to quickly look at 50.050 and 52.050, and listen for Melbourne and Sydney stations not able to use 50 MHz at any particular time. *Any thoughts from the multitude?*

Bob VK5ZRO heard on 28.885 that contacts had been made recently on 144 and 432 MHz between Cairns and New Guinea, but so far information has not trickled this far!

Bob VK5ZRO mentions the nightly contacts are continuing successfully between him and VK5ZRG at Whyalla on 432.100, also with Paul VK5QM at Cowell, who built the Cowell repeater. Bob also reports quite an upsurge in SSB activity in VK5 with a lot of operators using the FT29OR plus a DS linear. He said the combination leaves a lot to be desired unless some work to get the levels right are made, when the gear sounds quite good.

The new UHF repeater VK5RVP currently being tested by Mark VK5AVQ is to eventually go up at the site of the present Ch. 8 repeater site. . . . Andrew VK5ZUC is operating on 70 cm . . . there are now more than thirty stations capable of operating on 432 MHz in VK5 . . . Jim VK5ZMJ at Port Pirie retired on 27/10 so we hope to hear some more of you Jim, best wishes . . . Mick VK5ZDR noted working Chris VK5MC and into VK3 recently on 2 metres . . . did hear on the grape vine that either a contact had been made or a station had been received from Indonesia at Port Hedland in NW of WA recently, but so far no other details.

Operators in New Zealand will be holding one of their annual VHF Field Days over the weekend of 4th and 5th December, from 0500 to 1100 UTC on the Saturday, and 1900 to 0100 UTC on the Sunday. All bands will be used. There are no reports of any similar Field Day occurring in Australia.!

Well, it's that time of year. Firstly, it's time for the usual increase in DX due to Es particularly on 6 metres; but do not overlook 2 metres. Most importantly, if you find strong short skip signals on 6 metres (in the 500 to 700 km area) it's always worth a call on 2 metres, because you may find a 1600 km path open to somewhere! Good luck. The other often prime time for 2 metres is around the end of January, early February period, lots of interesting things have been done in the past then.

May I take this opportunity of wishing everyone as happy a Christmas as conditions will allow, and for greater prosperity in 1983.

Thank you to all my correspondents who keep me informed on the happenings throughout Australia, your letters are appreciated immensely, without them there just wouldn't be this column, that's certain. I also thank those Editors and Publicity Officers who send me various journals and publications throughout the year, often information from them can be used to the advantage of national dissemination.

Finally, thank you the Editorial Staff and Publications Committee of "Amateur Radio" for their assistance, tolerance and consideration throughout the years in the preparation of this column. A special word for Gil VK3AU who has been so great a help for a long time. This issue commences my fourteenth year of writing the VHF news, perhaps it's been too long, but then again I don't get too many brickbats — I am sure you have long ago accepted the fact I can only report what I hear and read, and even now I still need to work at times to keep the wolf from the door!

Best wishes to you all, and Season's Greetings. Closing with the thought for the month: "The Spanish call late middle age the age of metal — the time of life when you have silver in the hair, gold in the teeth and lead in the feet."

73. The Voice in the Hills.

## HIGHEST REPEATER IN THE WORLD????

From our northern cousins in Papua New Guinea comes news of a new proposed two metre repeater, to be established on Mount Albert Edward at a height of 13,000 feet.

It will be solar powered and will operate a power of 25 watts.

The profile is as follows:

#### EQUIPMENT

Philips FM 328 Transceiver  
Transmit 146.650 MHz  
Receive 146.050 MHz

#### POWER

3 x Solarex 2 amp 12 volt solar panels, and 2 x Delco 105 amp hour Solar batteries and Solarex regulator.

#### ANTENNA

AEA Isopole 5dB gain (theoretical)

#### DIPLEXER

6 x modified surplus AEA cavities.

#### IDENT

Morse at 15WPM (EPROM) P29RAE

#### REMOTE CONTROLS AND TELEMETRY

- (a) remote shutdown of transmitter via sub-audible tone as required by radio branch in case of fault.
- (b) Solar voltage via A-D converter.
- (c) Power output control 1 watt or 25 watts via Touch-tone.

Anyone interested in the VHF coverage maps or further details, may write to "Papua New Guinea VHF Group, PO Box 6240, BOROKO, PNG", enclosing a self-addressed envelope and 1 IRC to cover postage.

It is possible that the repeater may be operative in October, but a small problem has arisen in that the traditional land owners now find that the top of the mountain has a value, and will no doubt be asking for some fabulous rent for this piece of real estate.

(Information from P29ZTD in CARAMUT. Official Newsletter of the PNGARS.)



# QSP

#### NAIL POLISH IN THE SHACK?

Sounds silly — but listen:

1. I use red nail polish to mark dials and points on cabinets for rotary switches.
2. Red for the "off" button or switch on all equipment so the YF and harmonics will know what to push if I leave something on when I am out.
3. I use red and white (other colors are available) to identify mating male and female connectors as in the case of the leads on a stereo or tape deck, etc.
4. If you have a screw or nut that tends to work loose with vibrations, a dab of polish under it will hold it solid.
5. Don't overlook nylon cord and rope; a little polish upon the cut ends stops the raveling.
6. Clear nail polish is ideal for waterproofing labels on equipment and electrical connections that tend to corrode.

(By K8DYI) from ARNS Bulletin June, 82

AR

The WIA is in business for more members. Please help.



# THUMBNAIL SKETCHES



Peter Brown VK4PJ  
16 Bede Street, Balmoral 4171

## HARRY KINZBRUNNER VK4HK

Harry, who was born just after the turn of the century, took out his licence in Adelaide about 1927/28 after meeting Alf Treager. Harry's first set was equipped with a 201A and Ford coil and it took him eighteen days to strike the correct frequency, on 160 metres.

At that time Harry was working as a wheat-field farmhand. Later he lived with Alf Treager helping to build the first pedal radio sets and the original VJ1 base station which he installed in Cloncurry for the AI Mission.

Harry knew Andy Couper of cyclone fame but also had his own experiences with cyclones when he was the first contact with the Honiaras when it was cyclone devastated, and also helped Tableland/Cairns communication in an earlier cyclone.

Of Harry's many experiences outback, one was an overland trip from Adelaide with AIM sets, which trip is included in his collection of slides shown several times in Queensland, dealing with his Flying Doctor service.

Harry has for many years been a State Councillor for the Queensland Ambulance Transport Brigade representing the North and is a local Show Society Committee-man.

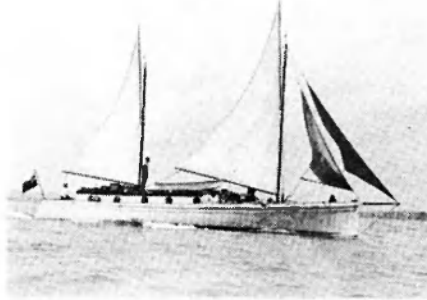


\* Regrettably, Harry passed away just prior to going to press. See obituary next month.

## J P "NIM" LOVE, 4JL, 1930. VK4JL.

"Nim", who was born in 1906, started with crystal sets before his teens and later joined the Woolloowin Radio Club when Hubert Kington was president.

"Nim's" transmitter was fitted to the family yacht "Sweetheart", possibly the first radio equipped yacht in Australia, and was under the strict scrutiny of the radio inspector of that time, Tom Armstrong, who vetted all messages to



## SWEETHEART

decide if a charge should be made. One power supply was an Evershed 1000V hand driven set, the next a bank of Ediswan wet cells, and later a Westinghouse 27/550V rotary on 12V. One of "Nim's" highlights was contacting W6NLZ with 9 watts, off St Helena, Moreton Bay.

Many other interesting stories can be told. Through the ranks "Nim" was promoted to Captain, artillery 1937, and on the outbreak of war to Battery Commander 2nd 5th Field Regiment through UK, Greece, Syria, Middle East finally ending service as a Lt Col, Light AA New Guinea.

"Nim" was a young flyer and earned Life Membership of the Royal Queensland Aero Club. He is also a long serving member of the Queensland Boy Scouts Association Executive, who have rewarded him with a Silver Kangaroo, one of their highest awards.



## COL GRANT. 4JG 1925.

Col started radio in 1918 with a crystal set from "Boy's Own Paper," and could hardly carry the piece of galena that he obtained from the Queensland Mines Department for the set.

As one of the mainstays of the very active Woolloowin Radio Club, 4WVN, 25 members and 10 licensees, Col, under "Presscorres" (also a nickname), wrote articles for Queensland Radio News. For some years the club each year prepared all the articles for August Issue of QR News.

Col, at the "drop of a hat" would write a ditty as "Leo Feenaghty" worshipped wireless as a "deveanaghty", but when he got on the air, all the BCLs there, left the immediate "veceanaghty".

Col, who holds BA and B Comm. degrees and is a qualified accountant, looked after Dalgety's taxation affairs until some 20 years ago when he retired to the Gold Coast. At this time some limitations are being placed on his physical activities.



## LADDER OF ACHIEVEMENT

From Ole Virginia HAMS ARC

### LADDER OF ACHIEVEMENT

- 100% — I did.
- 90% — I will.
- 80% — I can.
- 70% — I think I can.
- 60% — I might.
- 50% — I think I might.
- 40% — What is it?
- 30% — I wish I could.
- 20% — I don't know how.
- 10% — I won't.

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AM



# EDUCATION NOTES

Brenda Edmonds VK3KT  
Federal Education Officer

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# FIVE-EIGHTH WAVE

Jennifer Warrington VK5ANW

59 Albert Street, Clarence Gardens, SA 5039

Statistics for the August AOCPE exams have been received from DOC. There is not much change from other recent figures in the Regulations or CW results, but the pass rates for the Theory section are in general the lowest they have been for some time. Of a total of 952 candidates sitting, only 308 passed — 32.4% (compared with over 42% for the last two AOCPE exams). The figures by States range from 27.1% for VK4 to 37.2% for VK3.

The immediate assumption is of course that this exam was much harder than usual, or that there must have been a number of bad or trick questions. We must remember though that several different papers are used — in the larger centres, two in the one day. It is unlikely that all papers would contain many bad questions.

Were they all harder? There were two possibilities — either some questions that are a lot harder than average, or a higher ratio of hard to easy. I have not seen all of the papers used, but of those I have seen, I do not think the standard was much different from that of other recent papers in either way. However, in each paper there were a number of "new" questions — ones that have not previously appeared on exam papers — of which two or three per paper required the ability and knowledge to discriminate fairly finely between two alternatives.

It seems clear that the rising pass rates of the last few years' exams have been due to some extent to the "recycling" of questions and papers. Inevitably word spreads among candidates about the questions they have met, so that they must have some idea of many likely questions before they reach the exam room. Most educators would agree that in a

situation such as this, the continual presentation of new questions is necessary to maintain the expected standards. The AOCPE exam must be kept at a standard which ensures that Australian operators are at least equal to their overseas counterparts, and that gaining the Certificate of Proficiency is a worthwhile achievement.

Those who are at present studying for a future exam should see in these statistics the need for very wide practice in answering multichoice questions, so as to be prepared for as wide a range of questions as possible.

Read the syllabus carefully, making sure that it is all covered. Try to find questions on each part of the syllabus. In particular look for questions where it is hard to decide between two or three alternatives, then sit down with the books and work out why one is correct and the others not quite right. If there seem to be two right alternatives, perhaps one is more specific, or better in the particular situation.

Remember, the aim of the exam is to test knowledge, not to set traps for the candidates. However, most of the exam questions are very carefully written, and the alternatives have been chosen with the same attention as the correct answer.

No exam is hard if you know the answers, but you must expect a few questions where you have to think carefully — before deciding on which answer — and you ALWAYS have to READ THE QUESTION — and answer the question that is asked.

Best wishes to those who are studying.

— 73 Brenda VK3KT

I don't know why it is, that at this end of the year, the months seem to have less days, and the days less hours. Perhaps it has some relationship (inversely proportional, or otherwise) to the number of activities that have to be fitted in. Looking back over 1982 it has been a relatively quiet and uneventful year, with none of the major traumas and dramas that we had last year with the "Tower cases". That doesn't mean that we have done nothing in VK5 this year. Actually we work very hard at keeping things rolling smoothly so that it looks as though we aren't doing anything! Probably, like most other divisions, our biggest headache is the financial one, and treasurer John Butler VK5NX has gained quite a few grey hairs over the past two years trying to keep us out of the "red".

Once again we have had to increase our fees, but rest assured that it was not done lightly, or without much soul-searching. We are lucky enough to have our own premises (leased, not owned, as has been erroneously reported by other publications) which, nevertheless, have to be maintained, and where possible improved. We are also one of the few divisions who still have their own "Journal". It has long passed the stage where a "couple of duplicated sheets" would suffice. The number of members alone (1,200 plus) would make a "do-it-ourselves" Journal, impossible. So we have had to go to a printer, and although the finished product is one of which we can be proud, the cost to the division is the largest single item in our budget. We are doing our best to offset costs by finding new advertisers, and keeping the old ones happy, and the gentleman who is currently doing this very well is Tom Sears VK5NTJ.

VK2's loss was our gain when Marshall Emm, the former VK2 Slow Morse Supervisor, moved to VK5 recently. I hope that you will be very happy here, Marshall, and I hear on the "Grapevine" that you have already been welcomed and found a job on our Slow Morse Panel! (Callsign now VK5FN).

I hope that many of you will be at the Christmas Social on Tuesday, 7th December. Bring your YL or XYL (or if you are a lady, your OM or YM!) and don't forget a plate of supper. Drinks and some of the food will be provided by the division. The speaker will be Brian Moore from the Botanic Gardens, and his subject will be "Low Maintenance Gardening for the Adelaide Plains" (which should prove very popular, judging by the number of moans one hears on 2 metres, about "having to go and cut the lawn"!)

Last but by no means least, I should like to wish you all a very happy and safe holiday season.

The first meeting of 1983 for the VK5 Division will be on 25th January, 1983.

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WITH INTRUDER  
WATCHING**

# AWARDS

Mike Bazley VK6HD  
FEDERAL AWARDS MANAGER

8 James Road, Kalamunda, 6076

*Details of awards from four continents are featured this month, who knows, one day we may make WAC.*

## DIPLOMA BRASILEIRO DE DX AWARD

"O Diploma Brasileiro de DX" — DBDX Award has been instituted by LABRE to encourage interest in DX on the lower bands.

### RULES

1. The DBDX award is issued for confirmed contacts with a minimum of twenty different countries (one of them has to be Brazil), as shown on the official DX-CC list.
2. Special stickers for additional countries, in groups of 10 (ten) can be applied for.
3. All contacts must be made on 160, 80 and 40 metre bands respectively. No cross-band of Phone to CW contact is allowed.
4. There are two types of certificates, one for Phone-CW operation and the other for Phone only.
5. All stations must be contacted from the same call area, or from the same country in cases where no call area exists. One exception is allowed to this rule, where a station is moved from one call area to another, all contacts must be made from within a radius of 150 miles (240 kilometres) of the initial location.
6. All contacts must be "land stations". Contacts with ships, anchored or otherwise, and aircraft, cannot be counted.
7. Any contact from 15th November, 1945, is valid.
8. All confirmations must be submitted exactly as received. Minimum reports are: RS-33 for Phone and RST-338 for CW.
9. The DBDX Secretary will keep an honor roll showing all awards issued and consecutively numbered.
10. Applications must be submitted to: "LABRE Awards Manager — DBDX PO Box 07-0004, Brasilia — Distrito Federal, Brazil — 70.000.
11. Decisions of the LABRE Awards Commission regarding interpretation of rules as here printed or amended shall be final.
12. Sufficient postage for the return of confirmations must be forwarded with the application — US \$2.00 or 10 IRCs.

### THE MARY ROSE AWARD

Further to the information given on this award in July AR there have been three revisions to the rules. These are: *Rule 1, only ten Hampshire contacts are required; Rule 2, five Hampshire stations and GB2MAR or G4JMR; Rule 6, the award costs £3 or the equivalent in Australian currency. (On the present rate of exchange this works out to \$5.50).* Enough said!

### ALL AFRICA AWARD

This award is issued by South Africa Radio League. Any Australian amateur who wishes to apply for this award may do so by forwarding the necessary QSLs and postage for return, to me for certification.

To qualify for the All Africa Award, confirmation must be submitted in respect of one contact from each of thirty-four (34) different call areas in Africa. Please note that all call areas must be on the continent of Africa. Islands round about Africa do not count for the AAA.

Contacts MUST include one contact from each of the six (6) ZS areas, ie ZS1, ZS2, ZS3, ZS4, ZS5 and ZS6, plus one contact each with Botswana A2, Lesotho 7P8 and Swaziland 3D6 (ZD5). These nine (9) contacts are necessary. The other twenty-five (25) contacts may be with any of the areas listed below, one contact confirmed from each area. When the original areas have changed country prefixes, all the present prefixes that constitute the original area will count, as well as former country prefixes.

All contacts must have been made after November 1945, with a minimum CW report of RST 338, or a minimum phone or SSB report of R3 S3.

A list indicating callsigns, mode of operation, date and signal report must be submitted, accompanied by QSL cards confirming contacts.

In the case of applications from members of Societies that are member-societies of the International Amateur Radio Union, applications will be accepted if properly listed, duly checked and certified correct by the Awards Manager of the Society concerned. The certificate is issued free of charge to members of the SARL and a charge of R1,50 (10 IRC's) post-free to non-members is required.

List of call areas from which twenty-five (25) contacts may be obtained to add to the nine compulsory contacts listed above:

| NAME OF COUNTRY          | PREFIX    |
|--------------------------|-----------|
| Algeria                  | 7X2, 7X3  |
| Angola                   | D2-3, CR6 |
| Benin                    | TY        |
| Bophutswana              | H5        |
| Burundi                  | 9U5       |
| Cameroons                | TJ        |
| Central African Republic | TL8       |
| Chad                     | TT8       |
| Congo Brazzaville        | TN8       |
| Congo Kinshasa           | 9O5       |



Dahomey Republic  
Djibouti

Egypt  
Equatorial Guinea  
Eritrea  
Ethiopia  
French Morocco  
Gabon  
Gambia  
Ghana  
Republic of Guinea  
Republic of Guinea Bissau  
Tni and Rio de Ora

TY2  
J2 (Fr. Somali-  
FL8)  
SU  
EA0  
ET2  
ET3  
CN (Tangier)  
TR  
C5 (ZD3)  
9G1  
3X  
J5, CR3  
EA9 (Now part  
of Morocco CN8)

Ivory Coast  
Kenya  
Liberia  
Libya  
Malawi  
Mali  
Mauretania  
Mozambique  
Morocco  
Niger Republic  
Nigeria  
Rwanda  
Senegal  
Sierra Leone  
Somali Republic  
Sudan  
Tangier  
Tanzania  
Togoland  
Transkei  
Tunisia  
Uganda  
Venda  
Volta Republic  
Zambia  
Zimbabwe

TU2  
5Z4  
EL  
5A  
7Q7  
TZ  
5T5  
C9  
CN8 (Ceuta Melilla)  
5U7  
5N2  
9X5  
6W8  
9L1  
601 and 602  
ST  
CN2  
5H3  
5V4  
S8  
3V8  
5X5  
V9  
XT2  
9J2  
Z2 (Rhodesia-ZE)

Send all applications to the Awards Manager, South African Radio League, PO Box 3911, Cape Town, 8000, Republic of South Africa.

NB: ZS2MI is a station on Marion Island and does not count for the AAA.

Finally back to Australia. The Queensland Radio Institute Amateur Radio Club offers an award to any amateur or shortwave listener who contacts or logs five licenced Railway Men. Unfortunately I do not have details of cost, if any, and suggest a line to Frank Alloway, VK4AFW, 22 McAlister Street, Ipswich, 4305, will bring more information. Do not forget to enclose a SASE. (Also see Club Corner, page 63 Nov. AR).

Well that's the lot for this month and as this will be the last column in 1982 may I take this opportunity to wish everyone a Happy Christmas and all that you may wish yourself in 1983. Happy DXing and 73 Mike VK6HD.

AR

## STRANGE BUT TRUE

### FOUR BONES

Someone once said that membership of any organisation is made up of four bones:

There are the WISH BONES — who spend all their time wishing someone else would do the work.

There are the JAW BONES — who do all the talking but very little of anything else.

Next come the KNUCKLE BONES — who knock everything that everyone else tries to do.

FINALLY, there are the BACK BONES — who get under the load and do the work . . .

AR

# FORWARD BIAS

## VK1 DIVISION



Fred Robertson-Mudie VK1MM  
Box E288, Canberra ACT 2800

### JANUARY MEETING

Please note that the January meeting of the division will be held on the 17th of the month, i.e., the third Monday in January, to avoid clashing with the Australia Day holiday.

### FEBRUARY MEETING

The Annual General Meeting of the VK1 Division will be held on 28 February 1983. The purpose of the meeting is to review the business of the past year, receive reports and the election of a new committee. If you wish to stand for election to the committee, you can obtain a nomination form from the Secretary, Richard VK1UE. Nominations must be in ten days before the day of the meeting.

The above meetings will be held in the Griffin Centre Studio at 8 pm as usual. It is in your interests to attend and participate. If the idea of serving on a committee seems dull and boring, there are many other ways you can help your division. If you can't think of anything, come and see me and I'll give you a list.

### REPEATERS

By the time this appears in AR, the new 70cm repeater, VK1RUC, should be in position on Mt. Ginini. As Ginini is about 5,800ft ASL, it will be interesting to see what the coverage of the repeater is like. The man mainly responsible for the construction of this repeater is Eddie VK1VP who has put a lot of time and effort into the project.

Channel 6 repeater VK1RAC was out of action for a short while recently due to a lightning strike (as opposed to a wild-cat strike). Peter VK1DS, another of our tireless workers, along with Dennis VK1DG had it back on air in only a few days. Bearing in mind the locations of both Channel 6 and Channel 7 repeaters, it is quite remarkable that we haven't had a lightning strike before.

### BEACONS

The Committee has authorised the purchase of new crystals for the 2 and 6 metre beacons so that they can be put on the band plan frequencies. Alan VK1KAL has offered to construct the new aerials and a new boom for

the beacons. Eddie VK1VP is constructing the 6 metre beacon. Due to the difficulty of access to the beacon site, the installation work will only be done when everything is complete and can be installed in one operation.

### NEW TOWER DESIGN?

Thanks to Ian VK1IC, a few of the VK1's have cottoned on to the idea of buying slightly damaged street light poles for use as free standing towers. Suitably and simply adapted, they make excellent 45 to 50 foot crank-up towers and, importantly, they are cheap. Perhaps Ian will send his design to AR for publication.

### APATHY!

Let's hear it for apathy. Only 0.57% of amateurs in VK1 bother to report the increasing number of military/commercial intruders on our exclusive bands, and if both of them go on holiday we've had it. It would seem that Australian amateurs in general don't really care about their bands, and are quite prepared to let other countries carry the can for them. *Have Australian amateurs no national pride? Why don't you get off your backsides and do something for the amateur service, for the WIA and/or for yourself. Don't be a parasite.*

### JOTA—VK1

The JOTA weekend was a great success in VK1, with three of the four stations set up being well patronised. The other station probably won't be on air next year due to the apparent lack of interest by the scouts in that particular area. On the amateur side, things were extremely well organised and operated, thanks to the efforts of a dedicated few. As regards the scouts, however, their organisation left a lot to be desired. As a male chauvinist, I am loath to admit that the girl guides could run rings round the scouts when it comes to organising ability — the girls even won the antenna erection competition. Still, it is reported that a good time was had by all.

Fred VK1MM  
Editor pro tem.

AR

## WIA INSERTS INTO AR



### NOTICE TO WIA ZONES, CLUBS AND GROUPS

WIA Zone, Club and other Group Secretaries are hereby notified that inserts into AR henceforward will be accepted **ONLY** direct from a Division and then only by prior arrangement with the Secretary.

All inserts must comply with Postal Regulations and must be received not later than the 26th of the month preceding publication date.

## MENTION

you saw it in AR

## WHEN YOU BUY

from

## ADVERTISERS



# VK2 MINI BULLETIN

Athol Tilley VK2BAD

PO Box 1066, Parramatta, NSW, 2150

\*\*\*\*\*  
**NOTE OUR NEW  
POSTAL ADDRESS:**

**P.O. BOX 1066,  
PARRAMATTA 2150**

**OUR OFFICE IS NOW  
LOCATED AT:  
109 WIGRAM STREET  
PARRAMATTA**

**PHONE: (02) 689 2417**

**LISTEN TO BROADCASTS  
FOR FURTHER DETAILS**

*\*\* Please note phone no. amendment.*

\*\*\*\*\*  
**NOTICE**

*The Annual General Meeting of the Wireless Institute of Australia, New South Wales Division will be held on 2pm on Saturday, the 26th of March, 1983.*

*Nominations for election to Council and agenda items for this meeting should be directed to The Secretary, PO Box 1066, Parramatta, NSW, 2150 and must reach the divisional office no later than Wednesday, the 23rd of February, 1983. Nomination forms may be obtained from the office, either by calling, writing or phoning (02) 689 2417.*

*Any ordinary (ie full) member of the WIA NSW Division may stand for election to the Divisional Council. Would members please note that no business may be discussed or voted on at the AGM unless all members receive notice of such business (see Article 31). Please ensure that any motions you wish discussed reach the office by the 23rd of February, 1983.*

(sgd) Athol Tilley VK2BAD

Hon Secretary WIA NSW Division.

**COUNCIL REPORT**

The Divisional Council met on the 8th of October at the divisional office at 109 Wigram Street, Parramatta.

A request for affiliation with the WIA NSW Division from the Tamworth and District Amateur Radio Club was granted, making a total of thirty one clubs affiliated with the division. Council appreciates the support shown by the Tamworth club by its affiliation.

Council decided that the bank interest bearing deposits held by the division be converted to longer term, higher interest investments as they matured. Thirteen new members were accepted for the month.

Written reports and recommendations for a Divisional policy statement concerning concessional pensioner subscriptions and student members were presented by the VK2 Federal Councillor, Stephen Pall VK2PS. This division suggested that the Federal Budget should bear part of the pensioner concessions granted and that a uniform Federal Policy and application form be adopted by all divisions. We also proposed that uniform student concessions be adopted by all divisions and that uniform members make a small contribution to the Federal Budget.

Items from the 5th Conference of Clubs, which was held at Wollongong, were discussed and a full report on council action was to be presented at the 7th Conference of Clubs.

Due to many other commitments, Stephen Pall VK2PS resigned as the WIA Education Service Liaison Officer.

The Moree District Radio Club advised that they were unable to comply with Article 82 and their affiliation with the WIA NSW Division was terminated.

Council discussed candidates for the Ron Wilkinson Achievement Award and the Dick Smith Educator of the Year Award. The winner of the Educator of the Year award will receive a presentation at the 7th Conference of Clubs.

Ways of upgrading the Dural building and of obtaining additional storage space were discussed and Dural Officer Jeff Pages VK2BYY was authorised to make arrangements for the sale of any surplus equipment to WIA members.

**SLOW MORSE SERVICE**

The introduction of daylight saving means that the nightly VK2BWI slow morse transmissions on 3.550 MHz now commence at 2030H local (can't have that extra sunlight fading your morse key!). This of course is still 0930 UTC.

This service is provided by volunteer operators, who provide their time, so prospective amateurs or those wishing to upgrade their morse proficiency can receive regular on-air practice. If you wish to assist as an operator, please contact Ross Wilson VK2BRC, the VK2 WIA Slow Morse Co-ordinator.

All amateurs can assist by keeping clear of 3.550 MHz during the slow morse sessions, preferably at least 5 kHz away, and give those learning a fair go. Perhaps these sessions helped you gain your licence, so you can now return the favour.

**DIVISIONAL OFFICE**

The office of the NSW Division is located on the first floor, 109 Wigram Street, Parramatta.

Office hours are from 11am to 2pm weekdays and the phone number is (02) 689 2417. Please send all correspondence to PO Box 1066, Parramatta, NSW, 2150.

The office and library is also open each Wednesday evening from 7pm to 9pm.

Facilities at the new office include publication sales and information, QSL card drawers and the members lounge/library. Please call in and inspect the new facilities and use them — they belong to the members of the division.

**MEMBERSHIP RENEWALS**

By now, you will probably have received your membership renewal notice. Yes, you're right — they have increased.

This division has increased its rates ONLY to cover the \$2 increase in the Federal content. Our share of your fees is the same as last year — we get \$7 and Federal WIA get \$22 for each full member. We are doing everything possible to hold down membership fees.

When you consider the many services your membership provides eg broadcasts, AR magazine, QSL Bureau, Library/Lounge, discounts on publications etc, I am sure you get value for your membership dollar. Continued enjoyment of our hobby is dependent on representation of our interests by a strong WIA, something that you cannot put a dollar value on.

Please pay your renewal promptly and assist us in maintaining these services.

**AUSTRALIAN CALLBOOK**

The 1982/83 Australian Amateur Callbook is now available from the divisional office. It contains much more information than last year, with information on EMC, WICEN, Repeaters, Radio Clubs, Satellites and much more, including callsigns! Obviously the Federal WIA Publications Committee have spent a great deal of time in its preparation. The usual discount to WIA NSW members applies and the cost is \$3.60 at the office and \$4.60 posted.

Note that the phone number for the division is incorrect and should be (02) 689 2417.

Photo courtesy: John JA Hill VK3DKK



View of the new Divisional Office



## PUBLICATIONS

It has been necessary to increase the prices of a number of publications. If you wish to receive a new price list, please call at the office or send a stamped, addressed envelope to PO Box 1066, Parramatta, NSW, 2150. A new list will be included with each callbook purchased through this division.

The members of the NSW Divisional Council would like to take this opportunity in wishing all members the compliments of the season and a prosperous and healthy new year.

## WESTLAKES AMATEUR RADIO CLUB, TERALBA.

WESTLAKES TRYFECTER drawn at the Conference of Clubs, 31/10/82.

List of Winners:

1st: Ticket No 1266,

I. Brauer, Coffs Harbour.

2nd: Ticket No 670

A. Skerrett, VK2VTN

3rd: Ticket No 1030

M. Tilley, Villawood

E.C. Brockbank,  
Secretary.

## DETAILS OF FOUR CLUBS AFFILIATED WITH THE NSW DIVISION

### ALBERT ARC

c/- M. Randell, 39 Spence Street, Dubbo, NSW, 2830. President: Brian VK2DDC, V-Pres: Ross VK2DVU, Secretary: M. Randell, others: Leo VK2DGX, Robert VK2ERB, Ron VK2DDQ, Peter VK2BXQ.

### AVONDALE ARC

Avondale College, Cooranbong, NSW, 2265. Meetings: at Avondale College, irregular. President: Robert VK2DFX, Faculty Sponsor: Ray VK2ERC, Secretary: John Harvey, others: Kenneth VK2BNO, Gary VK2PMQ, Fred VK2VIQ.

### OXLEY REGION ARC

PO Box 712, Port Macquarie, NSW, 2444. Meetings: Quarterly at the SES HQ, Bridge Street, Port Macquarie. President: Bill VK2ZCV, V-Pres: Arthur VK2ATM, Secretary: Lester VK2BFP, others: Lewis VK2LS, Frank VK2DUG, Ron VK2DOR, Geoff VK2DPE, Keith VK2KDL, Bob VK2EJK, Henry VK2ZHE. Classes: NAACP & AACP every Monday night at Port Macquarie H S. Additional classes also at Kempsey. Magazine: Oxtales, published quarterly. Editor: Lester VK2BFP. Repeater: VK2RPM channel 6700. Field Day: Queen's Birthday weekend at Port Macquarie.

### ST GEORGE ARS

PO Box 77, Penhurst, NSW, 2222. Net: Tuesday at 1930H EST on 14.110 MHz, Tuesday at 2000H EST on 28.520 MHz, Sunday at 0800H EST on 3.555MHz — all using VK2LE. Thursday at 2000H EST on 2m R6800 using VK2LE. Meetings: 1st Wednesday of each month at Allawah Scout Hall, cnr Blakesly Rd and Belview Parade, South Hurstville at 7.30pm. President: Gordon VK2BGA, V-Pres: Jim VK2NPA, Secretary: Derick VK2AZS, others: Brian VK2ZBP, Paul VK2ZSA, Allan VK2XF. Classes: NAACP, Mondays at 7.30pm. SES HQ in Highgate St., Bexley. Magazine: Dragnet, monthly. Editor: Anthony VK2BCZ. Repeater: VK2RLE channel 6800 and VK2RDX channel 6650.

### COMING EVENTS

Ross Hull VHF Contest: 4th December to 9th January. John Moyle NFD Contest: 12/13 February 1983. Gosford Field Day at Gosford Showground: 20th February 1983. Nominations for election to Council and AGM agenda items due: 23rd February. Annual General Meeting WIA NSW Division: 26th March.

NSW members and clubs are invited to submit news items for inclusion in these notes to: WIA, PO Box 1066, Parramatta, NSW, 2150. Items for February 1983 AR must reach us by the 3rd of January, 1983.

Athol VK2BAD.



# VK4 WIA NOTES

Bud Pounsett, VK4QY

33 Lasseter Street, Kedron, Qld 4031

Another year is almost over! Some of us might say whatever happened in 1982? So let us take a look back over this old year of 1982 to see what we did achieve.

January saw an international rescue in which, among others, a VK4, Barry, VK4BCC, played an important part. This was the emergency created when the yacht Cynsan was caught in a cyclone in the South Pacific waters and became lost. Barry was a major link in communications with the RNZAF Orion search aircraft and the yacht. This incident had a happy ending with the rescue being carried out by a French frigate out of New Caledonia. A sequel to this affair was the journey in October, by two of the Cynsan's passengers, Canadians Jim and Linda, who travelled to Monto to thank Barry personally.

February was again council election time, when Guy Minter, VK4ZXZ, became our State President. We were unable to muster a full council of twelve, so this year has seen the few carrying the load.

April was a big month; Radio Club Workshop, the preparation of our two federal councillors, Dave Laurie, VK4DT and Guy Minter, VK4ZXZ and a special lecture evening. Twenty or so delegates assembled at Griffith University (later to become the Games Village) for the Workshop, our most successful so far. Some important items came out of that weekend, notably WIA Policy Statements which were very well received at the Federal Convention and generally adopted in toto. The Workshop was also very useful in getting together, informally, Club representatives from all over Queensland. Discussions on a wide range of subjects continued well into the night and early morning. The "live-in" aspect got the delegates together at meals and made many more hours available. Everyone, including the treasurer, went away knowing that the Workshop was worth every cent of its cost. Special thanks go to Fred, VK4AFJ, Ann VK4NRA, Rod VK4YRT/NBD for months of preparation and to the Hon. David Jull, MHR for his address to the meeting.

A special meeting in February was arranged so that Dr Leo McNamara, who was visiting Brisbane, could deliver a series of lectures on the IPS, of which organisation he is Principal, and on ionospheric predictions generally.

At the May general meeting, Dave Laurie, VK4DT, our federal councillor, gave a detailed account of major discussions and decisions at the Federal Convention.

June saw our president, Guy Minter and his wife Ann, VK4NRA, who is bookshop manager, on the road north visiting clubs up as far as Townsville. Guy was able to speak at several clubs and help cement club/WIA relations. Clubs visited were Gladstone, Rockhampton (central Queensland branch of WIAQ) and Townsville. Many VHF contacts were had along the way.

July heralded the first education seminar in Toowoomba. This was to educate the educators and was aimed at providing teaching

techniques for club instructors. Class instructors from several clubs in South East Queensland and the Darling Downs attended. Ron VK4AGS, a high school teacher, was in charge for the weekend, while vice-president Rod VK4YRT/NBD brought it all about in his capacity as Education Councillor. More of these seminars are planned for other centres in 1983.

The preparation for, and the operation of, AX4QCG, the Commonwealth Games Station occupied several members over August, September and October. Hard work by VK4AFJ, VK4YRT, VK4AG, VK4NLV and many others culminated in a very successful ten days of bringing AX4QCG to the world. The siting of the station at the Queen Elizabeth II Stadium brought amateur radio to the notice of thousands of people and the ABC showed AX4QCG on the 7pm News for still further publicity. We Queenslanders were very proud of the way in which the Twelfth Commonwealth Games were conducted in our state capital and Australian amateurs can be proud of the way in which the amateur-station-at-the-games was organised, presented and operated.

JOTA Weekend in October had plenty of Sunshine State participation even though very unusual conditions were experienced on the Sunday.

Until this year, we had not held a state convention since 1979. This November, in conjunction with the ever-popular Gold Coast Ham Fest, saw another VK4 state convention. The Queensland Division of the Institute wishes to thank the Gold Coast Amateur Radio Society for acting as host. Visitors were indeed honoured to have AR editor, Bruce Bathols, VK3UV, as principal guest. Ken, VK4KD for GCARS and Fred VK4AFJ, WIAQ council secretary, made a great team for this event. Maybe they can start looking ahead for 1983.

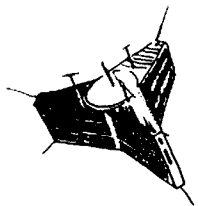
Throughout the year Queensland amateurs have been making their contribution to amateur radio, by putting VK4 call signs on the air, attending club meetings, some have had articles printed in AR, some have sent in intruder watch reports. Yet others have assisted by sending news items to the news editor. In that department there is Nev VK4ANW, who provides predictions of propagation from Queensland to a growing list of points around the world, and Fred VK4RF, who tells of the rare DX. Then there is Jack VK4AGY, the VK4WIA station manager, and his band of relay stations who are there every Sunday at 9am. This year the news department has been amalgamated to bring these VK4 notes, QTC (VK4 insert in AR) and the VK4WIA Sunday News Bulletin under one editor, who must thank his XYL, Bonnie, for checking grammar, punctuation and spelling and for doing such a good job as female announcer on VK4WIA.

Merry Christmas and Happy New Year.

— VK4QY  
AR

If you're interested in getting rid of the noise in your car, let her drive.

Amateurs who have nothing to say often prove it on 40 metres.



# AMSAT AUSTRALIA

Bob Arnold, VK3ZBB,

41 Grammar Street, Strathmore, 3041.

## NATIONAL CO-ORDINATOR

Chas Robinson VK3ACR.

## CORRESPONDENTS

VK3YQX, VK5HI.

## ACKNOWLEDGEMENTS

AMSAT Satellite Report.

ARRL News Bulletins.

## INFORMATION NETS

## AMSAT-AUSTRALIA

Control VK3ACR

1000 UTC Sunday & Wednesday

7.064 MHz.

## AMSAT PACIFIC

Control JA1ANG

1100 UTC Sunday 14.305 MHz.

## AMSAT SW PACIFIC

Control W6CG.

2200 UTC Saturday 28.880 MHz.

*Listen to the AMSAT AUSTRALIA net on Sunday night for Basic Orbital Data on all amateur satellites.*

## AWARDS FOR SATELLITE OPERATING

In the August edition of Amateur Radio I referred to the Oscar Satellite Communications Achievement Recognition issued by AMSAT in the USA.

Colin VK5HI tells me that he is not now handling this award and no further claims should be sent to him.

AMSAT members interested in the award should communicate direct with Washington.

## PHASE IIIB ACTIVITY

Things have been fairly quiet on the satellites during recent months, particularly on the more difficult Mode 'J'.

Perhaps the explanation is typified by John VK4TL of Cairns who tells me that he is concentrating on the construction of 23 cm equipment for the Phase III uplink. So far he has completed a varactor tripler from 70 cm for use as a transmitter. The receiving converter is well under way with the crystal oscillator and multiplier working.

There is only one other amateur station in the Cairns district active on 23 cm so John may have some problems in getting his gear aligned for the 1269 MHz uplink frequency.

In southern VK3 there is reasonable activity on 1296 MHz but I am not sure whether the stations working this band intend to use Phase III, certainly some of them have worked through our satellites in the past.

I would be very interested to know what preparations are being made by other stations for Phase III and, of course any other general information on satellite activity.

Drop me a note and help me make this segment of our magazine a two way effort.

## TIPS FOR THE 70 cm OPERATOR BY N6CA.

From Mode 'J' Newsletter with thanks.

Stacking antennae can actually hurt your operating flexibility if done incorrectly. The best advice I could ever give you in this respect is to go for maximum beam-width. Most stations today run four antennae in a 2 x 2 arrangement. This will take up only 5' x 5' and be easy on the rotor. However a much over-looked method is a

4 high by 1 wide configuration. The thing most people don't realise is that this gives just as much gain but leaves you with the same easy to point beam-width as a yagi. The vertical portion of the pattern is very narrow making it as difficult to point for EME as a 16 yagi 4 x 4 array. For tropo though, try it, you'll like it.

Also don't try to make one antenna do everything at the expense of your sanity. Ever tried to track OSCAR with an EME antenna? 70 cm antennae are tiny and easy to make, so build antennae which suit their intended major use, be it EME, satellites, or tropo. Got a single direction where many stations are but they are very far away? Try a Laporte stacked rhombic. At 70 cm it can get tricky but a 27dB gain, 5 degree beam-width stacked rhombic is only 25ft long and doesn't have to be very high off the ground.

Another neat trick giving a surprising improvement is putting the preamp and final antenna change over relay up at the antenna. ANY loss ahead of the preamp degrades system noise figures and consequently the ability to hear very weak signals. It does far more harm than just a few tenths of a dB loss directly subtracted by the lossy part of the system. Moving the preamp and relay to the antenna can often give several dB improvement in signals. It is often as much improvement as doubling the array size. Think about that the next time you contemplate buying more antennae.

Watch out for preamps with bipolar transistors in them (MRF901). NE64535). These are recognisable by very wide bandwidth specifications. Often these preamps will overload your receiver with spurious signals from the local 460 MHz commercial stations. The GasFETs now hitting the market in the \$12-\$60 price range are by nature of their matching circuits very narrow band.

They can handle much higher overload signals and do not require a lossy filter up front. This lets you take full advantage of their phenomenally low noise figures (0.85-0.3 dB NF in respective prices above).

Before placing any preamp in line (especially something as costly as a GasFET) a few tests should be made to find out if the preamp will survive in your system. Provision must be made in the sequential biasing of the amplifier to ensure that all transmit/receive relays are switched and stable prior to the application of power.

Switching hot on 70 cm can destroy good relays as well as pre-amps. Any arcing in the relays due to hot switching will cause losses to concentrate in the relay, immediately destroying the temper in the spring portions of the contacts, if not worse. Good transmit/receive isolation is an absolute requirement if you intend to run any kind of power at all. Many relays, while good at HF, are terrible at UHF. They often provide only 30 dB of isolation between the preamp input and the amplifier on transmit. That means if you are running a kilowatt, you'll put 1 watt into the input of the preamp, smoking it nicely!

The goal is about 60 dB isolation even if it takes two relays to get it. Remember however

that any losses ahead of the preamp, even tenths of a dB, will seriously degrade the noise figure of the system. Find the lowest loss, highest isolation relay you have for use ahead of the GasFET.

If using two relays you may want to set them up to short the input of the preamp during transmit. Check to make sure your preamp can withstand a short on its input without oscillating. The reason for using a short instead of 50 ohms is to prevent damage during lightning storms where 50 ohms may as well be 50,000 when speaking of currents in lightning.

## PHASE IIIB

With thanks to AMSAT Satellite Report here is a review of the final test phase of AMSAT's Phase IIIB satellite:—

*AMSAT's Phase IIIB satellite is now undergoing the final series of tests to prepare it for launch. The spacecraft is presently in West Germany at the University of Marburg "Satelliten Werks" of AMSAT.DL President, Dr. Karl Meinzer, DJ4ZC. AMSAT's Vice President for Engineering, Jan King, W3GEY, travelled from Washington to Marburg 13 Sept. 82 to participate in the tests.*

*The series of tests will include the shake and vibration tests, transponder performance tests, tests of the Integrated House-keeping Unit (IHU or computer) and various other functional tests to assure that the entire spacecraft performs as specified. The malfunctions in the transponders that were revealed during the thermal vacuum tests performed in June (See ASR #35) at the Goddard Space Flight Centre have been corrected. Minor redesign was performed to eliminate some instabilities that showed up at elevated temperatures.*

*Results of the present tests may provide the best estimates yet of ground station requirements in terms of uplink power and receive sensitivity. These specification refinements will result from definitive characterization of the spacecraft RF system in terms of effective radiated power, antenna patterns, RF power generated and receive sensitivity.*

*Following successful completion of the present battery of tests, Phase IIIB may be placed in storage or it may be "burnt in" at the lab. Often it is desirable to age an electronic device to increase long-term reliability. This is commonly called a "burn in period". Paradoxically, to maximize the long term reliability of the device, it is often desirable to "put some miles on the odometer". While this would seem at first blush to make it more likely that a failure would occur in the predicted life of the device, it actually decreases the expected long-term failure rate by nabbing a class of failures occurring early. Early failures are called "infant mortality" failures. In reliability analysis, failure rates often resemble a saddle curve where most failures occur very early and very late in the design life of the device. By burning in the device, the strategy is to accumulate "use hours" and get to the lower regions of the saddle curve*

Telemetry Sensor Allocation:

| Channel | Parameter                           | Range         | Cal. Equation                             |
|---------|-------------------------------------|---------------|-------------------------------------------|
| 00      | Secondary S/C Computer (F100L)      | 0 - 1A        | I = 1.2N mA (0.125A / 1A)                 |
| 01      | Solar Array Current + X             | 0 - 2A        | I = 1.12N + 200 (for is less than 200 mA) |
| 02      | Battery Half Voltage                | 0 - 10V       | V = N/100 *(1.01)                         |
| 03      | Radiation Detector A O/P            | 0 - 5V        | Count = 40N *(1.04)                       |
| 04      | Radiation Detector B O/P            | 0 - 5V        | Count = 40N *(1.04)                       |
| 05      | Magnetometer Expt. HX-Coarse        | 0 - 5V        | V = N/200 *(1.01)                         |
| 06      | Magnetometer Expt. HY-Coarse        | 0 - 5V        | V = N/200 *(1.01)                         |
| 07      | Magnetometer Expt. HZ-Coarse        | 0 - 5V        | V = N/200 *(1.01)                         |
| 08      | Battery Pack-A Temperature          | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 09      | Spacecraft Facet Temperature + X    | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 10      | Visual Display Expt. & CCD Current  | 0 - 1A        | I = 1.2*(N - 30 mA (0.15A / 1a)           |
| 11      | Solar Array Current + Y             | 0 - 2A        | I = 1.12N + 200 (for is less than 200 mA) |
| 12      | 2.4 GHz Beacon Expt. Power O/P      | 0 - 2000mW    | P = (N - 99) * 0.633 mW                   |
| 13      | Radiation Detectors Expt. EHT Volts | 0 - 1000V     | V = N volts                               |
| 14      | Radiation Detectors Expt. Current   | 0 - 250 mA    | I = (N + 20)/8 *(0.983) mA                |
| 15      | Magnetometer Expt. HX-Fine          | 0 - 5V        | V = N/200 *(1.01)                         |
| 16      | Magnetometer Expt. HY-Fine          | 0 - 5V        | V = N/200 *(1.01)                         |
| 17      | Magnetometer Expt. HZ-Fine          | 0 - 5V        | V = N/200 *(1.01)                         |
| 18      | Battery Pack-B Temperature          | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 19      | Spacecraft Facet Temperature -X     | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 20      | Spacecraft Computer Current         | 0 - 1A        | I = 1.2*(N - 25) mA (1.125A / 1A)         |
| 21      | Solar Array Current -X              | 0 - 2A        | I = 1.12N + 200 (for is less than 200 mA) |
| 22      | Battery/BCR + 14V Bus               | 0 - 20V       | V = N/50 *(1.056)                         |
| 23      | Sun Sensor + Z Axis                 | 0 - 5V        | V = N/200 *(1.01)                         |
| 24      | 10.4 GHz Beacon Expt. Current       | 0 - 250 mA    | (N - 40)/4 * 0.97                         |
| 25      | Magnetometer Expt. Temperature      | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 26      | Magnetometer Expt. Current          | 0 - 250 mA    | (N/8) * 0.9945                            |
| 27      | Telecommand Receiver Current        | 0 - 250 mA    | I = (N - 16)/8 *(0.952) mA                |
| 28      | Module Box Assy. Temperature + X1   | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 29      | Spacecraft Facet Temperature + Y    | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 30      | Battery Charge Current              | 0 to + 5A     | I = 3N mA                                 |
| 31      | Solar Array Current - Y             | 0 - 2A        | I = 1.12N + 200 (for is less than 200mA)  |
| 32      | Power Conditioning Module + 10V     | 0 - 20V       | V = N/60 *(0.93)                          |
| 33      | Telemetry System Current            | 0 - 20 mA     | I = (N - 16)/30 *(1.084) mA               |
| 34      | 2.4 GHz Beacon Expt. Current        | 0 - 250 mA    | I = 0.4*(N - 11) *(1.072) mA              |
| 35      | 145 MHz Data Beacon Power O/P       | 0 - 2000mW    | P = (N - 82) * 1.67                       |
| 36      | 145 MHz Data Beacon Current         | 0 - 250 mA    | I = (N - 7)/4 * 1.014                     |
| 37      | 145 MHz Data Beacon Temperature     | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 38      | Module Box Assy. Temperature - X1   | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 39      | Spacecraft Facet Temperature - Y    | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 40      | + 14V Line Current                  | 0 - 5A        | I = 2.86N mA                              |
| 41      | + 5V Line Current                   | 0 - 5A        | I = 1.28(N - 50) mA (0.075A / 1A)         |
| 42      | Power Conditioning Module + 5V      | 0 - 10V       | V = 2N/300 *(1.12)                        |
| 43      | Sun Sensor - Z Axis                 | 0 - 5V        | V = N/200 *(1.01)                         |
| 44      | HF Beacons Expt. Current            | 0 - 250 mA    | I = (N - 36)/3 * 1.038 mA                 |
| 45      | 435 MHz Data Beacon Power O/P       | 0 - 2000mW    | P = (N - 102) * 1.792                     |
| 46      | 435 MHz Data Beacon Current         | 0 - 250 mA    | I = (N - 34)/3 * 1.053 mA                 |
| 47      | 435 MHz Beacon Temperature          | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 48      | Module Box Assy. Temperature + Y1   | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 49      | Spacecraft Facet Temperature + Z    | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 50      | + 10V Line Current                  | 0 - 5A        | I = 3N mA                                 |
| 51      | - 10V Line Current                  | 0 - 5A        | I = 1.3*(N - 60) mA                       |
| 52      | Power Conditioning Module - 10V     | 0 - 20V       | V + 0.0158N - 0.224*N ('N' of + 10v line) |
| 53      | Navigation Magnetometer X-Axis      | 0 - 5V        | V = N/200 *(1.01)†                        |
| 54      | Navigation Magnetometer Y-Axis      | 0 - 5V        | V = N/200 *(1.01)†                        |
| 55      | Navigation Magnetometer Z-Axis      | 0 - 5V        | V = N/200 *(1.01)†                        |
| 56      | Speech Synthesiser Current          | 0 - 250 mA    | I = (N-16)/10 * 1.009 mA                  |
| 57      | CCD Imager Temperature              | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 58      | Module Box Assy. Temperature - Y1   | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |
| 59      | Spacecraft Facet Temperature - Z    | -30 to + 50°C | Temp = (474 - N)/5 *(1.01) Degrees C      |

†Determine vector as follows:  $B_z = -189.54*(N_y - 336.55)$   $B_y = +183.486*(N_x - 663.44)$   $B_x = -194.5*(N_z - 496.5)$   $B_t = (B_x^2 + B_y^2 + B_z^2)$

before launch. Reliability engineers tell us that this method will reduce the likelihood of failure of the spacecraft during its orbital life. A suitable comparison is the apparent high number of visits to the dealer you must make for corrective maintenance (as opposed to preventive maintenance) just after purchasing a new car. Little things such as a not-so-tight muffler clamp that rattles or an instrument lamp that fails to illuminate. That's infant mortality in cars. Fortunately, with our Datsun, Citroen, Ford or BMW, the dealer is nearby. Not so for Phase IIIB, naturlick! Much later on in the life of the car

the frequency of breakdowns rises again (the saddle effect on the other side of the curve).

All of the subsystems of Phase IIIB have accumulated ageing time as they were tested at the module (e.g. transponder or IHU) level. An interesting engineering question now arises regarding the efficiency of ageing at the spacecraft level. That is, does it make sense to age the spacecraft in the lab in its fully integrated state? We must rely on our engineering team to make this judgement, of course. Meanwhile, the

potential user community can rest assured that the most advanced analytical tools available are being applied to the Phase IIIB spacecraft during these pivotal tests at Marburg.

Since the launch of Phase IIIB may now occur in spring of '83, there is some time to work with, to further optimize the systems and in turn our confidence that once in orbit this penultimate amateur satellite will perform as expected.

**LAUNCH DATE**

As we go to press we hear that it is likely that, as a consequence of the Ariane L5 failure, the

AMSAT Phase IIIB and ECS-1 satellite payloads will be moved from the L7 launch vehicle to L6. L6 will probably be launched mid-April 1983.

**STATUS REPORTS**  
**UOSAT UO9.**

UOSAT looks pretty good after being incommunicado. All systems appear to be working satisfactorily with the exception of the Radiation Detectors; it is particularly interesting to hear that the CCD camera is OK and that AMSAT-UK expects to put its PCBs for the Receiver Imaging Station on the market in the near future.

**AMSAT OSCAR 8 and the RS Series.**  
All working satisfactorily.

**ORBITAL DATA**

| Satellite Designation | Period Mins | Long Inc Deg W |
|-----------------------|-------------|----------------|
| AO-7                  | 114.939382  | 28.736922      |
| AO-8                  | 103.172311  | 25.795440      |
| UO-9                  | 94.965351   | 23.741031      |
| RS-3                  | 118.519719  | 29.756646      |
| RS-4                  | 119.394564  | 975490         |
| RS-5                  | 119.555309  | 30.015732      |
| RS-6                  | 118.717115  | 29.806026      |
| RS-7                  | 119.196171  | 29.925890      |
| RS-8                  | 119.765139  | 30.068747      |

**SEASONAL GREETINGS** to all readers of this column. For our satellite operators it has been a somewhat frustrating year with the uncertainty of the launch of Phase IIIB and the disappointment encountered with UOSAT. On the other hand AO-8 and the RS satellites have performed faultlessly to give enjoyment to both old and new operators.

My sincere thanks to those who have contributed to these notes — please keep the information flowing for the benefit of all.

It is also appropriate at this time to acknowledge the assistance received from other organisations, without their help our monthly and weekly information service would be rather thin. I particularly mention:—

*The Minister and Staff of the Federal Department of Science; Ron Broadbent and AMSAT-UK; ARRL RTTY Broadcasts; AMSAT and ASR; Mode 'J' Club.*

Best 73's and good satellite operating in 1983.

AR



**QSP**

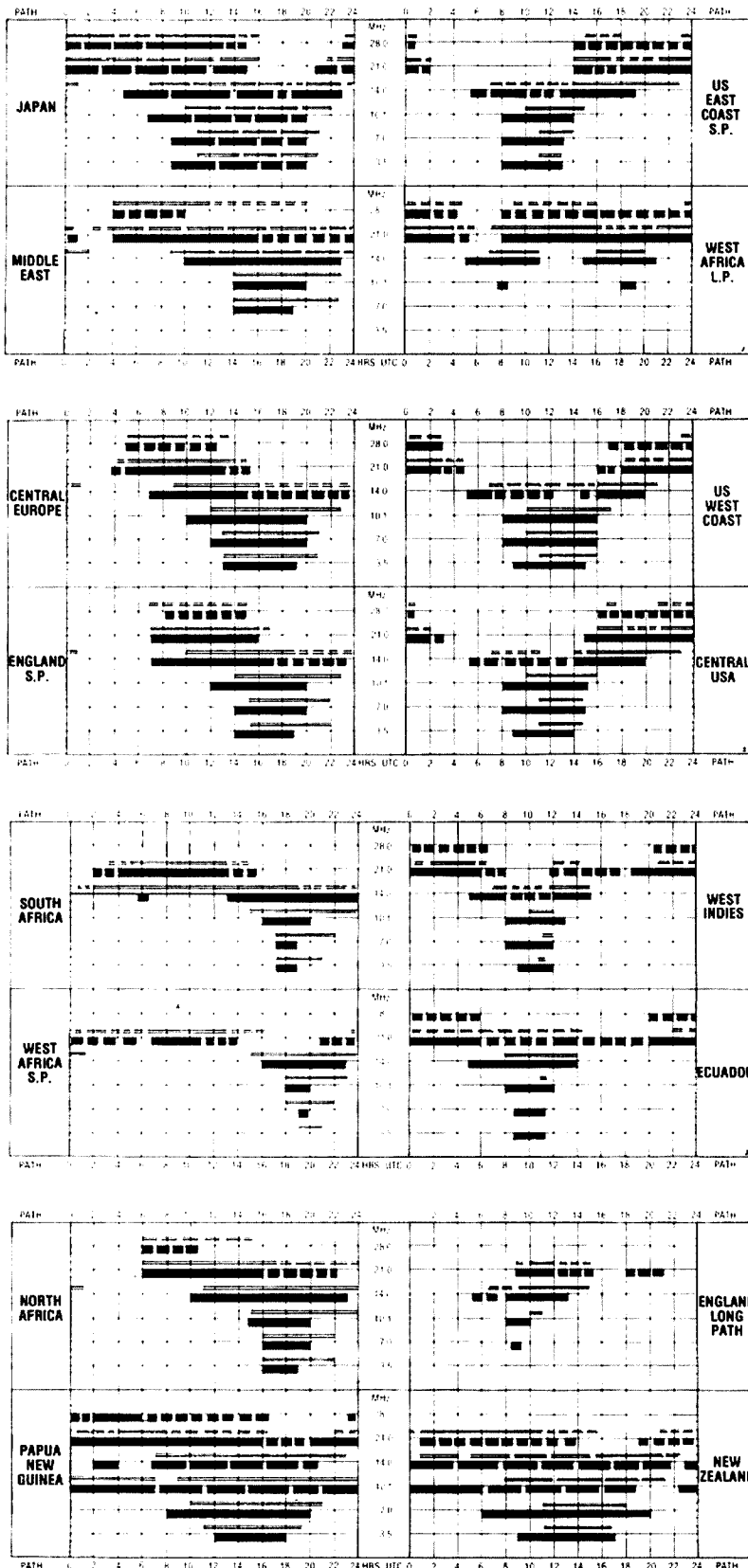
**HEATSHRINK TUBING**

A neat finish to a solder tag connection is made by slipping a piece of heatshrink tubing over the wire before soldering, shrinking it over the wire and shank of the tag afterwards.

You can make these short lengths yourself out of conventional 'spaghetti'. Push a piece over the points of a pair of longnose wiring pliers and stretch to size under a hot tap. Still keeping tension on the pliers, immediately put under the cold tap and the 'spag' will stay stretched until heated with hot water or soldering iron.

Ken VK2DOI  
in the Propagator, Sept. 82

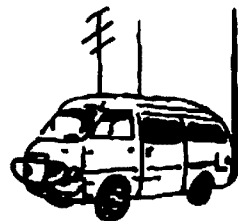
**IONOSPHERIC PREDICTIONS** Len Poynter VK3BYE



# WICEN NEWS

Ron Henderson, VK1RH  
FEDERAL WICEN CO-ORDINATOR

171 Kingsford Smith Drive, Melba, ACT 2615



This column, my 1982 Annual Report to the Federal Council and the WICEN & Emergency Communications Policy Statement all defined the four levels of amateur involvement in emergency or disaster assistance. May I remind you that these were:

*an active member of a SES,  
an active member of WICEN,  
an active member of TPTNs, or  
a responsible operator.*

This month I wish to draw your attention to the fourth group, the responsible operator, for I have not devoted much column space to this group in the past. The WIA Policy Statement above calls for an awareness service to acquaint members of the correct actions in emergency situations; this can be found in the general information pages of the Callbook and in the simplified operating guide published at intervals in this column.

An example of a responsible operator action came to my attention a few days ago, and even though the amateur involved may be reluctant to draw national attention to his actions, I feel his report which follows is worthy of publication.

Readers of QST will be aware of the Communications Service of the Month segment in their Public Service column. Whilst I don't think we need to go that far, reports of WICEN and community service incidents by amateurs are always welcomed in this column.

Dear Ron,

*This is a short note to advise you of an emergency radio communication provided by the amateur fraternity. It may be of some use to you as a talking point in your capacity as 'WICEN' Co-ordinator.*

*On Friday 8th October 1982, I was travelling north along the Federal Highway towards Goulburn with my family, when we came across the tail end of an accident where an elderly man had lost control of his late model sedan and overturned into the adjacent paddock.*

*On stopping and investigation of the lone occupant it was obvious that both ambulance and police were required to attend.*

*An urgent call was initiated on Channel 146.95 MHz FM to the Mt. Ginnini repeater and it was received by Peter VK2APP of Monteagle NSW. At this point a passing ACT police car on a return journey from Goulburn was flagged down for assistance. The police were approached to contact their base station. However this was not successful as the location severely attenuated their radio path.*

*The messages for assistance to both police and ambulance were carried out by Peter and the results were relayed back to the attending constabulary at the accident site.*

*A short time later, both the Goulburn police and ambulance arrived on the scene to take charge of the situation.*

*The man involved in the accident was not able to free himself from the vehicle and gained assistance from the attending officials. His condition seemed reasonably stable and without major injury. A severe risk of heart arrest was present and this possibility was constantly monitored by Sue (XYL) until relieved by the police etc.*

*No further contact or reports of this matter has been sought or received since this occurrence.*

*It is very pleasing to be able to provide assistance to the police and to demonstrate the versatility of the Mt. Ginnini repeater over the ACT police's excellent radio system. A very definite congratulations to the repeater committee for their efforts in providing this facility.*

*Let's hope that the continual button pushing and jamming that occurs on the repeaters in the major cities can be kept to a minimum or completely eradicated from this system.*

*Well Ron, that is all there is to report, I hope that you may be able to use some of the story to your benefit.*

Best 73  
Reg Dwyer VK1BR  
AK

## COMBINED VK4 EXERCISE

*When does a WICEN emergency exercise become an emergency?*

Brisbane operators found out unexpectedly during a combined exercise near Mount Nebo, west of the city, on Saturday, August 28.

The operators involved were John VK4QA, Dave VK4NLV, Phil VK4APA, Mark VK4ZJX, Alan VK4AL, Barry VK4KBM, Manfred VK4KHW, Miles VK4KBW, Doug VK4KSP and Geoff VK4AG.

Twice in previous weeks they had been involved in burn-offs in scrub and grassland on private property in the area as a precaution against a major bushfire later in the year.

This time, the operators with 2m hand-helds, met with the Mount Nebo and Samford bush fire brigades and the Pine Rivers State Emergency Service crews.

After a briefing, the fire was started with VK4KBW as base station in the Samford Valley with John VK4AQ liaison with the SES base at Jolly's Lookout high on the range above.

Various operators worked with the chipping parties, fire lighters and water wagons.

After about four hours on the steep mountainside, the chipping parties met and the fire was believed under control.

By now it was dark and the various operators made their way back to the mountain top for refreshments after a hard afternoon passing numerous unregistered messages as they worked.

At 7.25, after some operators had left for home, two parties were sent to investigate reports that the fire had jumped the break and was burning on another property.

Miles VK4KBW remained as base while Manfred VK4KHW and Doug VK4KSP went with the crews.

Doug took mountain climbing in the dark with extreme care as he had slid 10m down the side earlier when it was daylight.

The fire had jumped the break so Manfred and the rest of the team were called to join the fight.

All were kept busy, for as one blaze was put out another took hold. At least three large fires had to be extinguished.

The base did not close until after 10 pm when Geoff VK4AG acted as base from his home, phoning property owners to check the mountainside, as well as operators' wives.

Then it was a hard slog back up the mountain for Manfred and Doug to a cold drink and a rest before driving home after midnight.

The exercise proved that trained operators would not panic in an emergency. The net worked smoothly and efficiently with messages precise and to the point.

Spare battery sets proved a must for the hand-helds and they were charged via car lighter plugs during breaks.

At no time was any operator without communications and mostly all stations in the field could be heard.

Both fire brigades said they could not have done without the WICEN operators.

The SES group did a tremendous job. Their 27 MHz hand-helds worked efficiently but after some time they had difficulties with reception and transmission due to the terrain.

As a result, Miles, Doug, Manfred and Geoff were awarded WICEN certificates for their active participation in an emergency.

Doug VK4KSP

AK

## MAGAZINE REVIEW



Roy Hartkopf VK3AOH

34 Toolangi Road, Alphington, 3078

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

**73 Magazine, Oct. 1982.**

Visual Overmodulation Indicator. (P.N.) Safety with crank up towers. (G) Experimental Microwave antenna. (C) Low impedance tuner. (P.N.)

**Zero Beat, Oct. 1982.** (Youth Radio Clubs.) 2 Meter 'Fox' Transmitter. (P) Examination Test Questions.

**CQ July 1982.**

Special VHF Issue. Spread Spectrum Experiments. (G)

**CQ August 1982.**

Antenna Special. Long Wire Antennas. (G) Effective Grounds. (G)

**CQ Sept 1982.**

New angle on SSTV. (G) Holographic Video. (G) CQ DX Phone Contest. (G)

**QST Sept. 1982.**

Step Attenuator to 450 MHz. (C) Letter from Subaru representative in Columbia, USA, suggesting cures for preventing RFI to the car's electronics. Among the suggestions is shielding the antenna!

**CQ-TV No 119 Aug. 1982.**

FM television. (P) 70 cm Converter. (P) UHF Modulator. (P) 2C39 Power Amplifier. (C)

AK



# CONTESTS

Reg Dwyer VK1BR  
FEDERAL CONTEST MANAGER

Box 236, Jamison, ACT 2614

## CONTEST CALENDAR FOR DECEMBER

- 4- Ross Hull VHF Contest
- 4-5 ARRL 160 metre CW
- 4-5 Spanish Phone
- 11-12 ARRL 10 metre
- 11-12 Spanish CW
- 19 Canada Contest

## JANUARY 1983

- 9 Ross Hull VHF Contest ends
- 8-9 73's 40 and 80 metre contest
- 15 WCY Activity Contest Day
- 15-16 73's 60 metre Contest
- 29-30 White Rose SWL 3rd Test
- 28-30 CO WW 160 metre CW Test

## FEBRUARY

- 12-13 NZART National Field Day
- 12-13 John Moyle National Field Day
- 12-13 OCWA CW OSO Party
- 12-13 Dutch PACC Test
- 12-13 YL/OM Phone Test
- 19-20 ARRL CW DX Test
- 19-20 YL ISSB Phone Party
- 26 73's RTTY Contest
- 25-27 CO WW 160 metre Phone
- 26-27 YL/OM CW Test

Happy Xmas and a Prosperous New Year to all. — Reg. VK1BR.

## ARRL 160 METRE CW CONTEST

Starts: 2200UTC Fri., Dec. 3  
Ends: 1600UTC Sun., Dec. 5

This is the 13th year for this top band activity. Exchanges will be between stateside and VE and DX stations. DX to DX contacts, however, are not permitted.

**CLASSES:** Single operator and multi-operator.

**EXCHANGE:** RST and your ARRL section; country for DX and ITU region for maritime mobiles.

**SCORING:** Contacts between stations in ARRL sections count 2 points, with DX stations 5 points.

**MULTIPLIER:** Determined by the number of ARRL sections plus VE8/VY1 (maximum of 74) and DX countries worked (for W/VE participants. (DX use ARRL sections only.)

**FINAL SCORE:** Total OSO points times the ARRL section and DX multiplier.

**AWARDS:** Certificates to the top-scoring single operator station in each section and DX country, and to the top-scoring multi-operator station in each ARRL division and continent.

The ARRL 160 band plan requires that W/VE stations transmit only in the 1.800-1.825 and 1.830-1.850 MHz segments, keeping the "DX Window" (1.825-1.830 MHz) clear for DX stations. They will indicate where they will be listening for cross-frequency contacts.

The usual grounds for disqualification — violation of rules, excessive duplicate contacts, etc. — will prevail.

Logs with more than 200 QSO's must include dupe sheets.

All entries must be postmarked no later than January 4th and go to: ARRL Communications Dept., 160 Contest, 225 Main Street, Newington, CT 06111.

## ARRL 10 METRE CONTEST

Starts: 0000UTC Sat., Dec. 11  
Ends: 2400UTC Sun., Dec. 12

This is the 10th annual 10 Metre contest organised by the ARRL. It has become very popular because of the choice of entries available, so plan your strategy while conditions still prevail.

It's a worldwide activity in which DX stations are permitted to work other DX stations. You are not limited to working W/K's and VE's only.

The same station may be worked once on phone and again on CW; no cross-mode, however. A maximum of 36 hours operating time is permitted out of the 48-hour contest period for all stations.

**CATEGORIES:** Single operator, mixed mode, phone only or CW only. Multi-operator mixed mode only.

**EXCHANGE:** W/VE stations (including KH6 and KL7) send RS(T) and state or province. DX stations (including KH2, KP4, etc.) send RS(T) and QSO number starting with 001. Maritime mobiles send RS(T) and ITU region. Novice and Tech. stations must identify /N or /T.

**SCORING:** Two points per QSO; 4 points if it's with a Novice or Tech.

**MULTIPLIER:** Fifty US states, VE call areas, DX countries, and ITU regions.

**FINAL SCORE:** Total QSO points times the state, province, DX country, and ITU region multiplier.

**AWARDS:** Certificates to the top single operator in each category for each ARRL section and DX country, and to the top multi-operator station in each ARRL division and each continent.

Indicate the multiplier only the first time it is worked. Dupe sheets are required for logs with 500 or more QSO's. The usual disqualification criteria will be observed.

Mailing deadline for all entries is January 12th to: ARRL Communications Dept., 10 Metre Contest, 225 Main Street, Newington, CT 06111.

## 1983: A WORLD COMMUNICATION YEAR AMATEUR RADIO ACTIVITY

In support of WCY event, an amateur radio operating activity, sponsored by the Potomac Valley Radio Club (USA), is being announced. This activity will promote all forms of domestic and international amateur radio communications. The scoring will require knowledge of the location of the 3 ITU Regions and 75 ITU Zones for Broadcasting. The ITU Regions are:

- 1 Africa, Europe and USSR
- 2 North and South America
- 3 Asia and Pacific

The ITU Zones and amateur call-sign prefixes are listed in the IARU Radiosport Championship rules. You may send a SASE or IRCs to the address listed in paragraph 10 below for a copy of a map showing Regions and Zones.

## RULES

1. **ELIGIBILITY:** All licensed radio amateurs worldwide.
2. **OBJECT:** To contact as many other amateurs anywhere in the world using 1.8 MHz to 275 GHz excluding the 10, 18 and 24 MHz bands.

3. **DATE:** The activity will be the 24-hour period from 0001 UTC to 2400 UTC on Saturday, 15 January, 1983.
4. **CATEGORIES:** There will be two categories: single operator and multiple operators. Both categories are mixed-mode. Only stations using one transmitter are eligible for an award.
5. **EXCHANGE:** All stations will send their ITU Region and their ITU Zone. The following stations would send the listed exchanges:  
DL1AA 128  
W1AAA 208  
JA1AA 345
6. **VALID CONTACT:** The same station may be worked once on each band. Telephony (including SSTV) and Telegraphy (including RTTY) emissions count as separate bands. No cross emission contacts are allowed.
7. **MULTIPLIERS:** The ITU Zones worked on each band.
8. **QSO POINTS:** QSO points are as follows:  
4 Outside your ITU Region  
2 Inside your ITU Region:  
1 Inside your ITU Zone
9. **SCORING:** Multiply the total QSO points for all bands by the total zones worked for all bands.
10. **REPORTING:**
  - A. All entrants are to use a suitable log form and summary sheet of their choice.
  - B. Logs should indicate times in UTC, bands, calls, complete exchange and QSO points for each QSO. Multipliers should be clearly marked in each log. Cross-check sheets (dupe sheets) are required if more than 200 QSOs are made on any band.
  - C. Summary sheets should be a single page and show number of QSOs, QSO points, and Zone Multiplier for each band and the total score. The summary sheet must contain the entrant's callsign, Region, Zone, name and address. Multiple operator stations must list the name and call (if any) of each operator. Entries for the special UHF/microwave award should be indicated on the front of the summary sheet with a description of the basis of the UHF/microwave award written on the back of the summary sheet.
  - D. Entries must be postmarked by 28 February, 1983. Mail entries to PVRC, Post Office Box 337, Crownsville, MD, 21032, USA.
11. **AWARDS:** A plaque will be awarded to the high-score station of each category (single and multiple operator) in each of three ITU Regions. A certificate will be awarded to the high-scoring entrant of each category in each ITU Zone. In addition, a certificate will be awarded to one UHF/microwave station of each ITU Zone judged to have displayed the most outstanding achievement. Members of PVRC may not receive awards.

## 12. CONDITIONS OF ENTRY:

- A. Each entrant agrees to be bound by the provisions of this announcement, by the regulations of his licensing authority and by the decisions of the Amateur Radio Activity Awards Committee.
- B. An entry may be disqualified if the overall score is reduced by more than two percent. An entry will be disqualified if more than two percent of duplicates are left in the log. A penalty of 8 QSO points will be assessed for each duplicate QSO or for each miscopied call sign or exchange found during the Awards Committee log checking.

*from Potomac Valley Radio Club*

## HUNTING LIONS . . . in the air

Saturday, January 15, 1983 is the date of the 13th Annual "Hunting Lions in the Air" Contest, a world-wide project coordinated by the Arpoador Lions Club of Rio de Janeiro, Brazil. The Arpoador Lions will verify point totals on logs submitted to them by participants.

Planned as more than a contest, the real purpose of this unique programme is to promote international relations and to further friendship between individuals of different nationalities.

Non-Lions are most welcome to join Lions, Leos and Lionesses in this amateur radio operator event. It is expected that Lions, Leos and Lionesses will explain to non-members the purpose and ideals of Lionism and the significance of building international understanding and friendship through this programme.

## RULES

### OBJECTIVE —

The principal objective of the contest is "To Create and Foster a Spirit of International Understanding and Cooperation" among Lions and amateur radio operators through world-wide communications. The contest is held in tribute to the birthday of Melvin Jones, the founder of Lions.

### SPONSOR AND COORDINATOR —

The contest is sponsored by LIONS CLUBS INTERNATIONAL and coordinated by the Rio de Janeiro ARPOADOR (Brazil) Lions Club. The coordinating Club will appoint a Contest Committee of no less than three members. The functions of this committee will be to verify the logs, tabulate points and submit its findings to the coordinating Club.

### TIME —

The 1983 contest will be held on Saturday, January 15. It will start at 1200 UTC and continue for a 24 hour period.

### PARTICIPATION —

Participation in the contest is open to all duly licensed radio operators — Lion and non-Lion — except members of the Contest Committee of the Lions Club Rio de Janeiro ARPOADOR. There are two modes: Phone and CW. Participation in both modes is allowed; points are counted separately. All amateur stations participating must operate within their licensing regulation.

### CATEGORY —

(a) Single operator

(b) Radio Clubs and Radio Societies

Points of radio clubs and radio societies will be counted separately. Multi-operators may participate, but each prefix must be listed on the log.

### BANDS —

Bands used are 80, 40, 20, 15 and 10 metres, phone and CW. Associates of the Lions Club Rio de Janeiro ARPOADOR will operate mainly within the first 50kHz of each band, either CW or phone. Stations of Lions Club

ARPOADOR will also operate around 14.270 and 21.270 MHz, from 1500 to 2000 UTC.

### CALL —

The call should be made in the following manner: Phone — "CQ . . . Contest Hunting Lions in the Air, Lions Clubs International," together with his call sign: CW — "CQ . . . Test Lions." Participating Lions, Leos or Lionesses should identify their Club name.

### LOG —

One log for each mode. Each participant will note on his logs the call sign, reporting and the sequential number of the QSO. When contacts are made with Lions, Leos or Lionesses, the name of the respective Club contacted should be clearly identified on the log. Confirmation of contacts will be made by comparing log sheets, postmarked by air mail, not later than 30 days after the contest, to the Rio de Janeiro ARPOADOR Lions Club.

### POINTS AND BONUS POINTS —

Points and bonus points will be awarded in accordance with the following rules:

- (a) Only one QSO (Contact) with the same station in each band will be counted. Phone and CW will be counted separately.
- (b) QSO within the same continent: 1 point; QSO between different continents: 3 points.
- (c) Bonus: 1 extra point for QSO with member of a Lions, Leo or Lioness Club and 5 extra points for QSO with member of Rio de Janeiro ARPOADOR Lions Club. Contacts between Brazilian stations and members of the Lions Club Rio de Janeiro ARPOADOR will count only 2 extra points.

Contacts between members of the ARPOADOR Club will not count any bonus points.

### METHOD OF SCORING —

The Contest Committee will submit the results of the contest to the coordinating Club. It, in turn, will submit a report to the Chairman of the International Understanding and Programs Committee of the Board of Directors of the International Association of Lions Clubs before May 30 of the current year.

### AWARDS —

Lions Clubs International will present awards to amateurs in category "a". The top 3 in each mode will receive trophies. 4th to 10th places will receive plaques. The 1st place in each mode of category "b" will receive a trophy.

Participants sending logs showing a minimum of 5 contacts will receive a special Diploma issued by Lions Club ARPOADOR; in case the operator is a member of a Lions, Leo or Lioness Club, the Club will also be awarded a certificate.

The Contest Committee will also confer a special prize to the Lions Club demonstrating outstanding participation of its membership.

*For more information within Australia, contact: Allan Heath, Adelaide Flinders Lions Club 201 S3, Box 1904, GPO Adelaide, SA, 5001.*

Congratulations to Lindsay VK6SO, the winner of Category A phone section in 1982.

## INTERNATIONAL SHORT WAVE LEAGUE 14MHz SSB CONTEST

January 9th, 1983 0000-2400UTC. Single Station/Single Operator. Category (A) Licensed, Category (B) Short Wave Listener. 14MHz phone band, with spot frequencies 14.175 and 14.225MHz.

OBJECT: work/log also in six continents.

SCORING: 1 point per station worked/logged; 5 points per ISWL Transmitting Member, identifying by membership number; 10 points per LSWL League Officer, identifying by 'Lima Oscar' after membership number.

MULTIPLIER: number of continents worked/heard plus number of ISWL members worked/heard. Category (A) exchange serial numbers (from 001).

LOG: time, station worked/heard, serial number (A) sent (B) received, ISWL number, if any, R and S, points claimed.

LOGS TO: Send by February 20th to Archie Brown, G2WQ, Oakwood, Lower Frankton, Oswestry, SY11 4PB, England.

## EA DX CONTEST 1982

STARTS: 1600 UTC Sat. Dec. 4.

ENDS: 1600 UTC Sun. Dec. 5.

FREQUENCIES: CW only on all bands 3.5 through 28 MHz with activity between EA stations and the rest of the world.

CLASSES: Single operator both single and all bands, and multi-operator, single transmitter, all band only.

CALL: CQ EA TEST. The same station may be worked once on each band.

EXCHANGE: RST, 3 digit QSO number, starting 001. Province for Spanish stations.

SPANISH PROVINCES: EA1: LC, LU, OR, O, LE, ZA, SA, S, BU, LO, SG, AV, VA, PA, PO; EA2: BI, SS, VI, NA; EA3: B, T, L, GE; EA4: CC, BA, M, TO, CR, CU, GU; EA5: V, AL, MU, AB, CS; EA6: PM; EA7: J, CO, SE, HU, CA, MA, GR, AL; EA8: GC, TF; EA9: CE, ME.

SCORING: 3 points for DX stations.

MULTIPLIER: One multiplier per EA provinces worked on each band.

FINAL SCORE: Sum of total QSO points multiplied by sum of all bands multipliers.

AWARDS: Plaque to top overall scoring station. Both medal and certificate to the winner in each DXCC and WAE country.

LOGS: Must be received by URE, PO Box 220, Madrid, Spain, no later than Jan. 15, 1983. Include a summary sheet showing the scoring, call sign and licence class and name and address.

## 1982 RD CONTEST RESULTS

This was the first year of the new formula to determine the divisional winner of the RD contest. From the contest, a few points have arisen which are well worth a mention.

A very hearty congratulations to those of you who put in the effort to accrue a good score. Most of the logs were entered in the (A) Section and a noticeable downturn in the entry of (B) CW/RTTY Section probably due to the reduction of the scoring value of CW contacts.

A comment from one of the entrants points out that a CW contact takes twice the time of a phone contact but it is worth only the same value. This effectively reduces the scoring rate of the operator.

Although this point is valid, the number of contestants entering in the CW/RTTY Section is almost insignificant in comparison to the number of entrants in the phone section, therefore the contact/points made by the CW fraternity is a small contribution to the overall divisional score.

The entrants in each section of the contest effectively compete against the other entrants in the same section. There is no relationship to the entrants in any of the other sections with the scores or points gained for awards. This means that awards for individual effort in each section is evaluated separately and rewarded separately.

The rules published for this year's contest suffered at the hands of the publishers and resulted in much confusion. The logs received from those amateurs who bothered to read the rules were easily sorted out when received and in the main were correct.

When checking the logs it became obvious that the contest rules were being tested by some of the amateur fraternity to see how much leeway would be given. To overcome this bending of the rules it becomes necessary to produce copious rules of unending complexity which will result in more confusion of the rules

and the procedure. I feel that this should be unnecessary and the "amateur" is trustworthy and honest enough to act fairly to all others on the bands and in amateur radio.

Logs were received that were totally disgusting. Among these logs were the following faults:

- No front sheet
- No tally of the scores
- Unreadable handwriting
- No call sign or name

*Dirty, blotchy logs, that seemed "second hand"*  
*Rude and abusive remarks written on the logs*  
*Badly totalled results*  
*Incorrect points scoring (3 years old)*  
*Badly packaged logs.*

If your log has not been published it is because of one or more of the above.

Those of you who have relied on the light lawn coloured manilla envelopes may have lost any number of logs in the mail. Such items as 200 plus log sheets contained in a flimsy envelope were received in a very bad state, as the bins and boxes of Australia Post had taken its toll.

An estimate of 25 percent of all log envelopes received required major repair by Australia Post. A hearty thank you to the members of AP is well-earned.

To those of you who used the dupe sheets and prepared your log with some consideration to the recipient, thank you very much.

Some comments from the logs have highlighted the frenzied activity that occurs during a contest and the problems that the novice has to contend with:

*High powered lull calls dominating the novice segment, especially on 80 metres. Above the novice segment the contest activity was negligible and therefore the novices were almost non-existent in their portion of the band. Give them a go as well.*

*Demands of "This is my frequency" and the usual comments following.*

*Total refusal to converse with an overseas station during the contest. As if the rapid exchange of name report and QTH would severely hamper the contestant's effort. It would seem good manners to at least acknowledge the station and provide him with the necessary information.*

Apart from the whinges and bitches the contest was very well received by the vast majority of the entrants and the overall object of allowing and encouraging all amateurs to participate was reasonably successful.

The contest score formula was designed to encourage those divisions that have a low participation rate, to try to rally their amateurs and to put them into contention for the trophy and for those divisions with a high participation rate, to try harder and to increase membership.

The formula was taken from an average of the past eight years' participation and scoring rates, and projected to an expected level of activity for 1982. If little or no increase in activity was evident with the division, then the average score would be approximated. However the division which had been most active in communication, recruitment and participation throughout the year and the contest, would show the most improved score and then win the trophy.

The VK5s have again shown that they are superior in their efforts and have shown a set of very clean heels to the rest of the divisions. Congratulations to the VK5 Division.

VK2 has improved their participation rate and have increased to come into second place, well in the running for a try at the trophy. VK6 came a very close third and have shown

| DIVISION | TOT PTS / LICENCES | X WEIGHT FACT. | = | TOTAL SCORE |
|----------|--------------------|----------------|---|-------------|
| VK1      | 9882 / 352         | X 1.2          | = | 33.7        |
| VK2      | 17163 / 4289       | X 10.7         | = | 42.8        |
| VK3      | 23169 / 4592       | X 7.8          | = | 39.4        |
| VK4      | 12455 / 2137       | X 4.8          | = | 28.0        |
| VK5/8    | 43521 / 1732       | X 2.1          | = | 52.8        |
| VK6/9    | 33599 / 1182       | X 1.5          | = | 42.6        |
| VK7/0    | 11828 / 466        | X 0.9          | = | 22.8        |

that they are definite contenders for the trophy.  
 The rest of the scores speak for themselves.

(A) PHONE

| CALL SIGN | VK1  | SCORE       | ZAA/NCF | 148 |
|-----------|------|-------------|---------|-----|
| GB +      | 1009 | CAY         | 146     |     |
| BM        | 817  | AM          | 124     |     |
| TD        | 678  | RH          | 118     |     |
| BCE       | 609  | ZQR         | 115     |     |
| JN        | 574  | DG          | 100     |     |
| KAA +     | 460  | DL          | 90      |     |
| MX        | 345  | EP          | 80      |     |
| LF        | 324  | ZAT         | 77      |     |
| NEN +     | 316  | KV          | 75      |     |
| KAL       | 311  | NET         | 60      |     |
| KEN       | 302  | NEJ         | 42      |     |
| MM        | 253  | BB          | 38      |     |
| VP        | 247  | MF          | 35      |     |
| RK        | 231  | NOV         | 20      |     |
| ZAR       | 230  | ML          | 15      |     |
| UE        | 212  | NCB         | 10      |     |
| KAT       | 200  | TOTAL SCORE | 8411    |     |

(B) RRTY/CW

| CALL SIGN | VK1 | SCORE       | MM + | 10 |
|-----------|-----|-------------|------|----|
| NDM +     | 72  | TOTAL SCORE | 82   |    |

(D) OPEN

| CALL SIGN | VK1 | SCORE       | OK   | 210 |
|-----------|-----|-------------|------|-----|
| CC +      | 538 | FM          | 143  |     |
| IC        | 418 | TOTAL SCORE | 1309 |     |

CLUBS

| CALL SIGN | VK1 | SCORE           | 80 | TOTAL DIV SCORE | 80 |
|-----------|-----|-----------------|----|-----------------|----|
| ACA +     | 80  | TOTAL DIV SCORE | 80 |                 |    |

(A) PHONE

| CALL SIGN | VK2 | SCORE       | BMX   | 98 |
|-----------|-----|-------------|-------|----|
| BFR +     | 771 | ZZX         | 94    |    |
| DGX       | 752 | AIC         | 80    |    |
| DVU       | 695 | EPJ         | 80    |    |
| DUS       | 429 | KHZ         | 78    |    |
| DIX       | 406 | BYY         | 73    |    |
| ABM       | 391 | OH          | 65    |    |
| AOE       | 351 | AXJ         | 62    |    |
| DM        | 350 | VYP         | 61    |    |
| KDT +     | 278 | UC          | 60    |    |
| YVT +     | 262 | WT          | 59    |    |
| NW        | 251 | AZS         | 58    |    |
| BOO       | 242 | DUA         | 56    |    |
| DQR       | 232 | PGE         | 56    |    |
| AGF       | 210 | QC/M        | 54    |    |
| BID       | 198 | BAD         | 53    |    |
| PS        | 197 | AJH         | 50    |    |
| PNO +     | 196 | KHB         | 50    |    |
| AGB       | 179 | DFC         | 47    |    |
| EBM       | 179 | CBB         | 42    |    |
| ABC       | 176 | CF          | 40    |    |
| OV        | 156 | DFE         | 40    |    |
| NKN       | 149 | VVV         | 40    |    |
| VSN       | 147 | ZOC         | 36    |    |
| ANO       | 141 | HQ          | 31    |    |
| KAW       | 140 | BSB         | 23    |    |
| ACK       | 139 | AZR         | 23    |    |
| VEM       | 128 | VKP         | 21    |    |
| APP       | 125 | BDT         | 20    |    |
| OSM       | 125 | VMX         | 20    |    |
| DNT       | 124 | OR          | 18    |    |
| KCN       | 119 | DLH         | 17    |    |
| NAW       | 115 | AKX         | 15    |    |
| KCV       | 111 | EVM         | 15    |    |
| AZU       | 110 | ZVN         | 15    |    |
| BWT       | 106 | AOF         | 12    |    |
| FJ        | 102 | FD          | 12    |    |
| PMX       | 102 | XT          | 12    |    |
| PN        | 102 | BDT         | 11    |    |
| BCY       | 100 | CJ          | 10    |    |
| DEW       | 100 | LH          | 10    |    |
| VSF       | 99  | TOTAL SCORE | 10990 |    |

(B) CW/RTTY

| CALL SIGN | VK2 | SCORE       | 170  | AZR | 51 |
|-----------|-----|-------------|------|-----|----|
| EL +      | 144 | VM          | 35   |     |    |
| AYD       | 123 | HZ          | 28   |     |    |
| AOF       | 111 | NAW +       | 28   |     |    |
| II        | 108 | OI          | 21   |     |    |
| OL        | 105 | ABB         | 19   |     |    |
| ZC        | 103 | BRC         | 14   |     |    |
| DID       | 52  | TOTAL SCORE | 1112 |     |    |

(D) OPEN

| CALL SIGN | VK2 | SCORE       | 515  | PNI + | 79 |
|-----------|-----|-------------|------|-------|----|
| BD +      | 305 | OPZ         | 50   |       |    |
| BOS       | 200 | ARZ         | 41   |       |    |
| BON       | 200 | BO          | 40   |       |    |
| SU        | 89  | OLD         | 11   |       |    |
| IV        | 85  | TOTAL SCORE | 1615 |       |    |
| RJ        |     |             |      |       |    |

(A) CLUB

| CALL SIGN | VK2 | SCORE       | 909  | DXG | 250 |
|-----------|-----|-------------|------|-----|-----|
| DCL +     | 615 | AUX         | 153  |     |     |
| BTP       | 348 | IF          | 54   |     |     |
| WG        | 340 | BWI         | 25   |     |     |
| AOA       | 273 | TOTAL SCORE | 2967 |     |     |
| BFZ       |     |             |      |     |     |

CLUB OPEN

| CALL SIGN | VK2 | SCORE       | 131 | WI | 119 |
|-----------|-----|-------------|-----|----|-----|
| ABZ +     | 131 | TOTAL SCORE | 250 |    |     |

CLUB RX

| CALL SIGN | VK2 | SCORE       | 229 | TOTAL SCORE | 229 |
|-----------|-----|-------------|-----|-------------|-----|
| AROX      | 229 | TOTAL SCORE | 229 |             |     |

(A) PHONE

| CALL SIGN | VK3 | SCORE | 1052 | AFX | 138 |
|-----------|-----|-------|------|-----|-----|
| WP +      | 917 | KCC   | 125  |     |     |
| BRM       | 887 | DG    | 114  |     |     |
| BGW       | 823 | KDA   | 112  |     |     |
| ADW       | 777 | BOB   | 111  |     |     |
| OCA       | 652 | YRN + | 108  |     |     |
| YRN +     | 614 | BUC   | 107  |     |     |
| OXE       | 609 | SV    | 105  |     |     |
| YIW       | 596 | BOD   | 104  |     |     |
| XQ        | 526 | ZJ    | 102  |     |     |
| ATN       | 477 | DGV   | 101  |     |     |
| WJ        | 438 | YGX   | 101  |     |     |
| ZNE       | 412 | BNK   | 100  |     |     |
| DSI       | 403 | JY    | 100  |     |     |
| NLD +     | 374 | ABP   | 90   |     |     |
| AVV       | 357 | DMG   | 90   |     |     |
| BID       | 347 | KBB   | 80   |     |     |
| PD        | 345 | OZ    | 75   |     |     |
| YPL       | 336 | DIP   | 73   |     |     |
| NIA       | 323 | ARJ   | 70   |     |     |
| SZ        | 314 | BMV   | 70   |     |     |
| PBA       | 310 | CBB   | 63   |     |     |
| AYF       | 302 | DD    | 62   |     |     |
| SM        | 286 | OHN   | 58   |     |     |
| OAK       | 274 | AXQ   | 57   |     |     |
| YFZ       | 273 | ZBB   | 55   |     |     |
| BII       | 264 | FG    | 52   |     |     |
| AEX       | 240 | YKT   | 52   |     |     |
| XF        | 235 | ZFI   | 51   |     |     |
| BFN       | 232 | PR    | 50   |     |     |
| KJH +     | 210 | WY    | 50   |     |     |
| OKP       | 200 | XB    | 47   |     |     |
| YGT       | 200 | OGN   | 44   |     |     |
| ZI        | 199 | AMW   | 43   |     |     |
| KAV       | 195 | BGB   | 40   |     |     |
| BKN       | 179 | BIR   | 38   |     |     |
| KEM       | 172 | BEE   | 36   |     |     |
| ODX       | 170 | BSO   | 36   |     |     |
| RV        | 165 | POZ   | 36   |     |     |
| NBP       | 164 | KS    | 31   |     |     |
| AEQ       | 151 | VAN   | 27   |     |     |
| OMC       | 150 | DVT   | 26   |     |     |
| NAY       | 149 | BYA   | 25   |     |     |
| DDV       | 138 | BSR   | 23   |     |     |
| DNC       |     |       |      |     |     |





# 40 Metre Antenna System

From Mel Riddell VE3QU  
Waterdown, Ontario

leads from each of the slopers, the TA-33, 80 and 160 metre dipoles and two Beverage antennas! What a mess! A better way to feed was needed and the answer was found in the ARRL Handbook . . . it works well and the evidence is in the fact that the log sheet shows that the log shows over 160 countries on 40 CW and 150 on SSB. This was almost as much fun as my first real DX on 40 . . . G5YG in February 1936. He was in Scotland then and I was running 10 watts to a pair of 45s.

I have tried to reproduce the Handbook drawing . . . bear in mind even a single 1/2 wave sloper will perform well in the direction of the slope and does not require the same ground space as a regular dipole.

As pointed out in the article . . . the reflector effect of the unusual sloper is because the floating 36 ft. of coax looks inductive to the antenna thereby lowering its resonant frequency approximately 5 per cent. No mention is made of the antenna lengths . . . this will vary from location to location, installation elements, etc. . . . not to mention tower coupling and proximity to other wires. IF YOU HEAR ZL4BO you might like to ask him about his sloper array . . . ask him to demonstrate it.

### NOTE:

The braid of coax is also open circuited when not in use, and the braid on these 36 foot lines to dipoles is connected to lower half of each antenna.

This antenna system is as designed by K1THQ and appeared in the ARRL Antenna Handbook, page 200, 13th edition. ■

Reproduced by arrangement from "Jimmy", April/May 1982 (Journal of Royal Signals ARS — VK/ZL Chapter).

Perhaps I should tell you that I received my licence on April 16th, 1933. Since that day it has been a series of dipoles, tripoles, uni-poles, verticals, G5RVs, WSDZZ, W8JKs, Lazy Hs, ZL Specials, Vee beams, long wires, Bob-Tail beams, short beams, long beams, trap beams and some with no name!!

I am a keen advocate of 40 metres and it is on this band that my antenna interest lies. During 1977 the DX potential during summer months attracted my attention and I wondered what would be needed to get through to Europe in the late afternoon and evening. However, on June 30, 1977, listening on the low end of 40 I heard a CQ from VK3MR . . . and made the contact through the long path. A period of trials with various antennas followed with VK3MR . . . he was always there. Then came the half wave sloper. It was followed by another and another until there were 5 . . . all around the tower which was doing duty as a 160 metre vertical.

The shack now looked as though a family of spiders had invaded it . . . coax

| (B) CW/RTTY   |       |                 |
|---------------|-------|-----------------|
| CALL SIGN VK6 | SCORE |                 |
| HQ +          | 168   | HX 20           |
| BO            | 104   | ABR 19          |
| RF            | 84    | RU 16           |
| AJ            | 64    | UF 11           |
| GA            | 59    | TOTAL SCORE 545 |

| (C) RECEIVING |       |                  |
|---------------|-------|------------------|
| CALL SIGN VK6 | SCORE |                  |
| L60036 +      | 669   | J Greenway 15    |
| L60228        | 329   | TOTAL SCORE 1013 |

| (D) OPEN      |       |                  |
|---------------|-------|------------------|
| CALL SIGN VK6 | SCORE |                  |
| FE +          | 822   | IW 152           |
| ED            | 517   | AN 132           |
| NS            | 415   | RZ 106           |
| JK            | 409   | FH 54 AKO 19     |
| KY            | 408   | TOTAL SCORE 3034 |

| (A) CLUB      |       |                  |
|---------------|-------|------------------|
| CALL SIGN VK6 | SCORE |                  |
| SAA +         | 516   | SR 82            |
| ARG           | 328   | ML 64            |
| API           | 154   | ANW 19           |
| SO            | 152   | TOTAL SCORE 1404 |

| (D) CLUB      |       |                 |
|---------------|-------|-----------------|
| CALL SIGN VK6 | SCORE |                 |
| SH +          | 107   | TOTAL SCORE 107 |

| (A) PHONE     |       |                  |
|---------------|-------|------------------|
| CALL SIGN VK7 | SCORE |                  |
| PC +          | 829   | WZ 117           |
| GE            | 715   | GF 102           |
| KX            | 527   | WP 102           |
| BF            | 467   | NOV 100          |
| KC            | 427   | NTM 100          |
| GG            | 369   | SG 100           |
| KJ            | 357   | LR 92            |
| HD            | 313   | FD 90            |
| PL            | 254   | RM 88            |
| FL            | 246   | NOX 82           |
| JU            | 210   | TC 69            |
| RP            | 210   | BM 50            |
| RN            | 207   | AS 49            |
| NRD +         | 201   | MG 49            |
| SA            | 201   | WL 43            |
| WN            | 200   | BJ 35            |
| ZPK +         | 200   | RY 34            |
| WNWR          | 178   | AM 26            |
| LD            | 165   | MM 24            |
| FR            | 163   | MX 23            |
| JE            | 160   | NEC 22           |
| NNV           | 155   | KHS 21           |
| KKV +         | 154   | NBF 19           |
| DG            | 153   | PR 18            |
| KMA           | 153   | OK 16            |
| AL            | 145   | TOTAL SCORE 8830 |

| (B) CW/RTTY   |       |                 |
|---------------|-------|-----------------|
| CALL SIGN VK7 | SCORE |                 |
| RD +          | 192   | GB 60           |
| CH            | 170   | RO 29           |
| NBF +         | 75    | WL 11           |
| RY            | 73    | TOTAL SCORE 640 |

| (C) RECEIVING |       |                          |
|---------------|-------|--------------------------|
| CALL SIGN VK7 | SCORE | CALL SIGN VK7 CLUB SCORE |
| L70217 +      | 262   | NW + 772                 |
| TOTAL SCORE   | 262   | TOTAL SCORE 772          |

| (D) OPEN      |       |                 |
|---------------|-------|-----------------|
| CALL SIGN VK7 | SCORE |                 |
| KIH +         | 200   | BO + 15         |
| ZYL +         | 194   | TOTAL SCORE 409 |

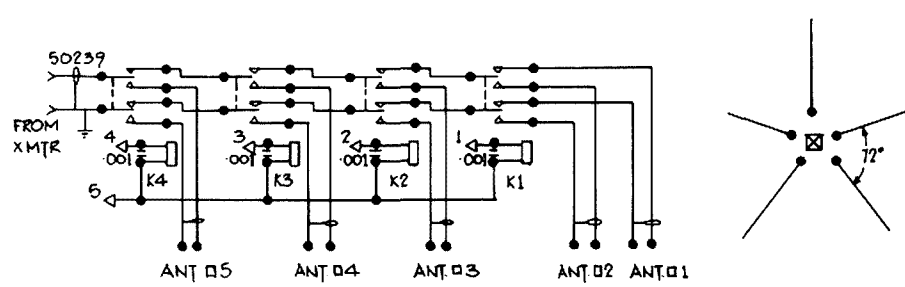
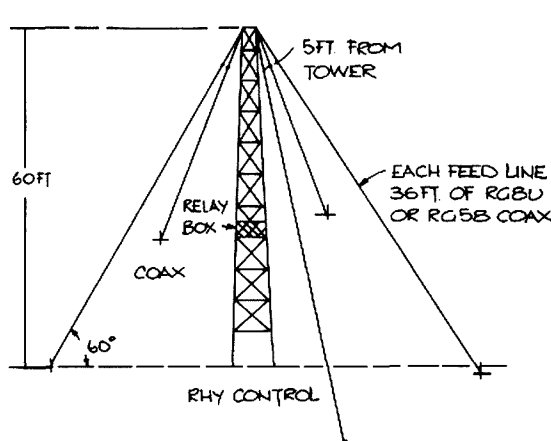
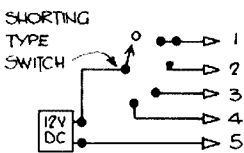
| (A) PHONE     |       |                  |
|---------------|-------|------------------|
| CALL SIGN VK8 | SCORE |                  |
| KRD +         | 564   | NHR + 62         |
| 5XZ/8 +       | 344   | NTT 34           |
| AC            | 83    | TOTAL SCORE 1087 |

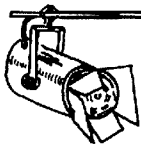
| (B) CW/RTTY   |       | (D) OPEN      |       |
|---------------|-------|---------------|-------|
| CALL SIGN VK8 | SCORE | CALL SIGN VK8 | SCORE |
| HA +          | 29    | DM +          | 171   |
| TOTAL SCORE   | 29    | TOTAL SCORE   | 171   |

| (A) PHONE     |       | (A) PHONE     |       |
|---------------|-------|---------------|-------|
| CALL SIGN VK9 | SCORE | CALL SIGN VK0 | SCORE |
| XW XMAS IS +  | 141   | AN +          | 848   |
| TOTAL SCORE   | 141   | AB            | 67    |
|               |       | TOTAL SCORE   | 915   |

| (A) PHONE     |       | CLUB          |       |
|---------------|-------|---------------|-------|
| CALL SIGN P29 | SCORE | CALL SIGN P29 | SCORE |
| P29 NSF +     | 267   | P29 CPM +     | 1022  |
| TOTAL SCORE   | 267   | TOTAL SCORE   | 1022  |

| (A) PHONE    |       | (D)          |       |
|--------------|-------|--------------|-------|
| CALL SIGN ZL | SCORE | CALL SIGN ZL | SCORE |
| ZL3 ABC      | 494   | ZL1 AGO +    | 105   |
| ZL1 AKY      | 380   | TOTAL SCORE  | 105   |
| ZL1 IM       | 186   |              |       |
| ZL3 PE       | 40    |              |       |
| TOTAL SCORE  | 1100  | TOTAL SCORE  | 105   |

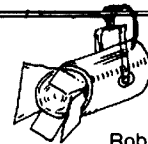




# SPOTLIGHT

## ON

## SWLing



Robin Harwood, VK7RH

5 Helen Street, Launceston, Tas. 7250

Well, 1982 is rapidly drawing to a close, and what a momentous year it has been on short-wave. In April, we saw open warfare erupt between Argentina and Great Britain, over the Falkland/Malvinas chain of islands in the South Atlantic, just east of the tip of the South American continent.

So the tiny local radio station in Port Stanley, which is a real DX catch at any time, took on a new significance, and sophisticated receiving equipment was hastily dispatched to monitor what was going on under Argentine Military Rule, to Punta Arena, in Chile, some 600 kilometres from the Falklands.

As the majority of Latin American opinion was pro-Argentinian, the BBC External Services' were expanded to bring the latest developments on the crisis. In particular, Latin American transmissions were increased to give the British view, as Argentine media sources were heavily censored. It wasn't long before the Junta in Buenos Aires start jamming all BBC Spanish language news and current affairs programming, as well as expanding their own external programming over RAE, to put their side of the conflict. As well, clandestine broadcasting stations also emerged into the scene. One station — "Radio Liberty" came on in English and broadcast programmes to the Task Force, their style and presentation being reminiscent to that of Tokyo Rose, a voice of another conflict. Yet it is doubtful that any members of the Task Force were influenced, let alone actually heard these transmissions, because the choice of frequencies and propagation were extremely poor for this pro-Argentine outlet, which some suspect came from outside of South America, and was only spotted by chance by a British DXer.

The British Ministry of Defence as well requisitioned one of the BBC's Ascension Island Relay transmitters, to carry a programme in Spanish, mainly directed to the Argentine garrison on the Falklands. So effective was the psychological warfare programming, that the Argentine telecommunication authorities immediately commenced

jamming the station known as "Radio Atlantico Dell Sur" or Radio South Atlantic, and threatened anyone caught listening to the transmission with court martial.

We were able to follow the conflict on short-wave via the BBC World Service, which undoubtedly provided the most extensive coverage of the campaign. Unfortunately, we were not able to receive the Argentine External Station — RAE, but the all-night Home Service on 6.030 MHz from Buenos Aires could be easily heard in Spanish.

We now know that the British were successful in recapturing the Falklands from Argentina, but at a cost of 277 lives, the majority being at sea. The Argentines also lost heavily, over 1,000 killed and several hundred still unaccounted for. Economically, the cost to both nations was enormous, with Argentina coming off worse. Today, the Falklands have quietened down considerably, and the "Kelpers" are trying to regain the peace and tranquility of before April, but the situation has altered, with large portions of the islands still being mined, and it is estimated that it could take 50 years or so to clear them of the debris and explosives left by the conflict.

As the conflict in the South Atlantic came to its conclusion, another trouble spot erupted into warfare — the Middle East. Following the attempted assassination of its ambassador to the UK by Palestine terrorists, Israel invaded Lebanon and laid siege to Beirut, its capital, wiping out PLO emplacements en route. The war of words hotted up on shortwave, as the crisis deepened in intensity. The PLO radio transmitters of the "Voice of Palestine" were destroyed. Kol Israel in Jerusalem were forced on to the defensive by the universal condemnation of Israeli actions, especially after the horrific massacre of innocent Palestinian refugees were discovered. The BBC World Service news broadcasts were the first ones to break with this significant development, and ironically the Voice of Lebanon—the voice of the Christian Falange was one of the last to admit that it had taken place.

Incidentally this station on 6.220 MHz is reportedly back on the air once again, after suffering considerable damage in the fighting. The other Lebanese outlet — the quasi-religious Voice of Hope radio station, broadcasts from an Israeli enclave under the control of Major Haddad, in what is known as "Free" Lebanon, which is virtually a separate state.

Now the multi-national peace-keeping contingent is in place, and the bulk of the PLO scattered throughout the Middle East, the Lebanese are getting back to rebuilding their nation after nearly a decade of continuous conflict. Yet, the BBC Monitoring Service reports that the Voice of Palestine is likely to be back on the air, from transmitters in Baghdad, Iraq, very soon. So the war of words will continue unabated.

The other major development on shortwave, has been the proliferation of the Over-the-Horizon Radar systems on HF over the past twelve months. With the Americans opening up an OTHR site in Moscow, Maine recently, it is now very common to be experiencing heavy QRM from these "woodpeckers" hammering away on shortwave frequencies in the electromagnetic spectrum.

And talking of "Spectrum" — the Radio Australia communications magazine, which up till now has been aired fortnightly, has been aired on a weekly basis since the 7th November at the usual transmission times.

The United Nations' have designated 1983 as the International Year of Communications. I expect that there are several activities planned to celebrate this event, both in Australia and overseas. I am sure that "Amateur Radio" will provide details of what is happening over the next couple of months.

Well, it remains for me to only wish everyone the compliments of the coming season, and hope that the New Year will bring you happiness and health to you and your family.

With best 73's — Robin VK7RH.



# QSP

## SPECIAL PREFIX

A special event prefix will be used on the occasion of 35 years amateur radio in Syria.

Four stations will be operating SSB using all the five bands 80, 40, 20, 15, 10 metres. The call signs are: 6C35A, 6C35M, 6C35N, 6C35O. Operation will be for two periods:

- Saturday December 25 0300 UTC to Sunday December 26 1300 UTC.
- Thursday December 30 0300 UTC to Friday December 31 0800 UTC.

Special QSL cards will be available, and can be claimed from PO Box 35 Damascus Syria by sending the QSL card with 3 IRC's and a self addressed envelope. As the number of amateurs in Syria is very small and taking into consideration the high cost of printing we have to ask that all cards for this special event, sent via the QSL bureaus by accompanied by an equal number of IRC's.

## 10 METRES

At 3pm EDT, Thursday, 28th October, FCC released the major portion of the 10MHz band for use by amateurs in its jurisdiction. Effective immediately, USA amateurs holding general, advanced and extra class licences may use up to 250 watts input and A1 and F1 emissions in the band segments 10.100 to 10.109 and 10.115 to 10.150MHz.

These emissions include CW and RTTY operation, voice modes are not permitted. The segment 10.109 to 10.115 MHz is not available at this time because of daily use by a priority government radio service. Amateur stations must avoid interfering with stations in the fixed service, because the band is allocated on a primary basis to the fixed service and these stations have priority. The amateur allocation is on a secondary basis.

Bud VK4QY  
AM

# LETTERS



Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

Moorabbin & District Radio Club  
PO Box 88, East Benteigh, 3165  
4th October, 1982

Federal Secretary  
Dear Sir,

Having been alerted to the facts surrounding Geelong Amateur Radio Clubs entry in the John Moyle Field Day Contest, the Committee and members of Moorabbin and District Radio Club would like to return our first place certificate as we do not honestly deserve it.

Enclosed is a copy of an announcement put over the Victoria Division Sunday Broadcast by our President, Mr. Ted Holmes, and we would appreciate it if this statement could be published in "Amateur Radio" magazine in the near future.

Trusting you will give this matter top priority,  
Yours sincerely,  
TREVOR HAINES  
Secretary

AM

## THE JOHN MOYLE MEMORIAL COMPETITION — 1982

For the information of those who were not at the General Meeting held at the Clubrooms on Friday 20th August, 1982, we reproduce below the text of an announcement which was broadcast on the following Sunday in reference to the above.

"This is Ted Holmes, VK3DEH, President of the Moorabbin & District Radio Club. Last Friday evening, 20th August at our General Meeting my attention and the attention of members was drawn to a letter addressed to the Editor of Amateur Radio from Barry Abley, Secretary of the Geelong Amateur Radio Club in reference to the John Moyle Memorial Competition held on 6/7th February, 1982. The matter was discussed at the General Meeting and a vote was taken on a motion proposed by Bill Yates (VK3SB) and seconded by Alan Doble (VK3AMD). This was to the effect that there is no doubt that GARC, by dint of a valiant and magnificent effort, scored far more points than we did with our Club station, VK3APC.

It was also felt that, due to circumstances outside the control of GARC, they had been deprived of what was their due right, namely the receipt of the appropriate certificate as outright winners. Our Club considered that it would be inequitable for us to retain the certificate and it certainly give us little pleasure to have it displayed in our Clubroom.

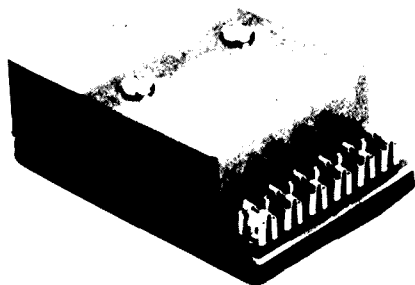
It was therefore unanimously agreed that the Committee would address appropriate letters to the Federal Executive and the Editor of Amateur Radio requesting that the award be given to GARC and returning the certificate which we received.

Hopefully, this will result in the right thing being done and the accolade being awarded to the station which really won the contest fair and square.

May I add that in 1983 MDRC will no doubt again enter the contest and it is to be hoped

# AR

# SHOWCASE



watts / 150 watts) and two meter indication of power and SWR. The frequency range is 130-500 MHz and the SWR Measuring Range is 1:1-1:3. It is fitted with M-type connectors, operates at 50 ohms impedance, is compact (220 (W) x 70 (H) x 110 (D) mm) and weighs only 1070 grammes. Accuracy is within  $\pm 10\%$  on both Power and SWR functions. With the evergrowing popularity of UHF transceivers, the MALDOL HS460 is certain to find a ready market for checking transceiver output power and antenna systems. Further information may be obtained from Imark Pty Ltd., 167 Roden Street, West Melbourne, 3003. Phone (03) 329 5433.

## News Release

Electronics whiz, Dick Smith, is not resting from his gruelling record solo helicopter flight but is breaking new ground in the publishing field.

Released this week is 'Dick Smith's Australian Radio Frequency Handbook' — a unique book on the newest and fastest growing hobby in the world.

Dick says Australians are rapidly joining the hobby of scanner radio listening and hearing, what has been up until now, 'secret radio'.

The hobby enables anyone to join in the excitement of fire crews racing to a city skyscraper, a jumbo jet obtaining clearance to land after an international flight, and even two-way telephone conversations from mobile telephones.

The listening possibilities using a scanner radio on the VHF and UHF bands are endless.

Dick said: "Obviously the average person can gain access to an incredible range of information on community happenings.

"Far from being concerned about people listening in on their transmissions, many law enforcement officers now feel that scanner radio use should be encouraged — if only for the direct assistance that people can give authorities.

"For example, imagine how many extra pairs of eyes are on the lookout for stolen cars — or how quickly news crews can be on the spot if they hear an emergency as it happens.

"I believe that responsible use of scanning receivers can only do the community good."

Dick's new book explains, in simple terms, every aspect of scanner radio listening, how to use a scanner receiver, when and what to listen to, and lists never before published information.

A comprehensive frequency directory is included and contains frequencies in use by a wide range of services and organisations.

Scanner radios are already being used extensively.

Police, SES, Bay Search and Rescue Groups, and Fire Brigades find them handy to keep track of various communications.

Scanners can also be invaluable for volunteer firefighters and farmers wanting to monitor local rural fire brigade channels for early alerts of fire outbreaks.

For further information telephone: Dick Smith (02) 888 3200.

Issued by Select Communications 18/10/82  
AM

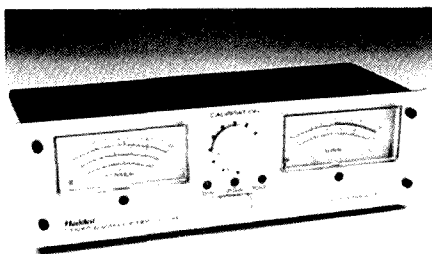
## ACOUSTIC DISTURBANCE PROTECTOR

The Leemah LM 102601 Acoustic Disturbance Protector safeguards headset-wearers against potential loss of hearing caused by steady, impact or impulse noises by inhibiting high-level sound and attenuating undesirable frequencies, whilst increasing operator comfort and efficiency by offering a low idle noise and low distortion for operators between calls.

This unit is compact and features standard impedances and voltages, compatible with operator headset circuits and is easily installed in -24 VDC to -48 VDC circuits without modification to the existing equipment. Polarity reversal protection eliminates the possibility of damage caused by polarity reverse during installation.

The LM 102601 exceeds Osha standards for industry safety requirements and has an AGC circuit output of less than 85 dB SPL. Studs are provided for screw mounting on equipment panel or it may be secured by double-sided tape.

For further information contact: Scalar Distributors Pty. Ltd., 20 Shelley Avenue, Kilsyth 3137. Ph: (03) 725 9677.



## NEW MODEL UHF POWER/SWR METER

The MALDOL HS460 SWR and Power Meter has just been released.

This unit, (which supersedes the model HS450) incorporates three power ranges (0-5 watts / 20

that on that occasion the unfortunate situation which obtained in 1982 will not be repeated.

I thought it appropriate that this announcement should be made now, as Moorabbin Club is keenly interested in the promotion of good will and harmony with all amateurs, not only as individuals but as clubs or groups.

Nevertheless, in 1983 we shall do our best, as in other years, to win the competition but hope to do so by scoring more points than anybody else, not by reason of an unfortunate error such as existed in 1982 and resulted in the true winners becoming the losers."

AR

Post Office Box 38,  
Magill, SA 5072

The Editor,  
Dear Sir,

"JUST WHO IS ALLOWED TO USE REPEATER 8". Last Sunday, (October 17th) after monitoring Repeater 8 for some time and noticing that it had been inactive for quite a while, I decided to make use of it. So I called CQ and had a short contact with a mobile and a bit later on I made contact with another mobile and, from our resultant conversation, I found out that my contact had only recently received his full call and that this was his first time on 2 (two) metres.

While the conversation was proceeding, I tried more than once to see if I could receive my contact direct (repeater reverse) without any luck, not knowing at the time that my contact was bypassing the repeater and was transmitting direct until someone came up and informed me of this.

However, while trying to explain repeater operation and then go over to a simplex channel was when all hell broke loose, (to coin a phrase) as firstly someone came up and angrily demanded that we "B---Y" well go to a simplex channel and this was followed by 2 (two) mobiles wanting to use the repeater. Remember, up to this time, that no one else had wanted to use the repeater. As for the 2 (two) mobile stations they finished up on channel 40 (146.00MHz) where they had a session about my location and me claiming that no one but new-comers to the band would talk to me as everyone else considered that I suffered from a very bad case of "VERBAL DIARRHOEA".

Granted I do not make as many contacts as I used to, as I have been spending most of my radio time in the listening mode, usually monitoring Repeater 8.

Now I would hardly term making use of a repeater twice over a weekend when no one else was using it excessive. As for the "VERBAL DIARRHOEA" claim, I could not care less and if there are those that do not like talking to me then they need not do so, and it will not worry me the least bit, as I can find other things to do to pass time if need be. However, this was the "JOTA weekend" and I have no doubt that there were many in and attached to the scouting movement along with parents etc (including many "Potential Amateurs") listening to amateur transmissions including those taking place on the 2 metre band. I wonder just what anyone (non-amateur) on hearing the above events would have thought? Hardly good PR. Well enough said for now.

Yours Sincerely,  
Graham J. Muirhead. VK5ZCM.

AR.



# QSP

## FINGER IN THE SKY

The Cruising Yacht Club (CYC) was so impressed with amateur efforts during the Sydney to Rio Yacht Race, that amateur radio looks like competing with the commercial ship/shore networks. Guy VK2BBF is currently running a Novice course at the CYC for yachtsmen aspiring to the 10, 15 and 80m bands.

from QUA Sept. 82  
AR

# Silent Keys

*It is with deep regret we record the passing of--*

Rev. R. GUTHERLET VK5 YRCS  
Co-ordinator  
Mr. T. HAMAR VK5HL  
Mr. H. KINZBRUNNER VK4HK  
Mr. T. W. STARKIE 4NW 1927  
Mr. K. W. WARDLEY VK3IS

# Obituaries

VIVIAN FREDERICK MAIDMENT  
VK2VFM

Viv Maidment ex-VK2VFM died, still holding his microphone, during a QSO on Sunday morning, 3rd October, 1982, aged 75.

Viv had been a devoted and active amateur, and was very popular on the Novice Bands over the past three years.

His first interest in radio communications began when he became an SWL member of the Marrickville Radio Club in 1927. When the club was disbanded due to lack of membership, Viv was presented with the club's wooden radio mast, which he still has standing at his home at Penshurst, supporting his HF antenna.

Throughout Viv's working life he earned his living servicing refrigerators, domestic radio sets and car radios, then, later, TV receivers.

His thirst for knowledge in the radio-TV industry led him to completing many training classes with the Marconi School of Wireless, always being one of the early birds to attain his Certificate of Proficiency to keep abreast with the latest technology.

Due to the rapid rate of technical progress occurring in the electronics industry over Viv's working career, he decided to become an associate member of the IREE to further his knowledge. He remained a member up to the time of his passing.

Just prior to the passing of Viv's XYL, who had suffered a long illness, he prepared himself for the lonely years ahead — he commenced studying amateur radio to attain the NAOC.

With a little help from local amateurs Viv passed his NAOC exam at the first effort three years ago just after he lost his XYL. I am sure the fellowship of amateur radio comforted and assisted Viv to beat his loneliness.

I am proud and honoured to have been his first and last QSO and will not be the only one to miss his cheery voice "on air".

He is survived by his only son Ron (an SWL), Joy, his daughter-in-law, Linda and Greg, grandchildren.

Derick VK2AZS

AR

TOM. W. STARKIE 4NW 1927

Tom, who was a foundation member of the Toombul Radio Club, passed on at Talbudgera Nursing Home on 4th July, 1982, after a heart attack. He was born in 1906, the year of so many prominent VK4 amateurs, and in 1928 to early 1930s he was a prominent and regular broadcast band operator, who used UV200 then UV201A and UX210 tubes with chemical rectifiers in the power supply, consisting of lead and aluminium plates in a borax solution. Tom had of late lived on Tamborine Mountain.

Peter VK4PJ

AR

# CHANGE OF ADDRESS

If you have changed your address or if you intend shortly to change address —

## PLEASE

Notify the Executive Office as early as possible:

Do not leave this to be done when you pay your subscription at the end of the year.

EXECUTIVE OFFICE  
P.O. Box 150, Toorak, Vic. 3142

# HAMADS

\* Please insert STD code with phone numbers when you advertise.

**PLEASE NOTE:** If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed

- Eight lines free to all WIA members  
\$9 per 10 words minimum for non-members
- Copy in typescript please or in block letters to P O Box 150, Toorak, Vic. 3142
- Repeats may be charged at full rates
- Closing date: 1st day of the month preceding publication  
Cancellations received after about 12th of the month cannot be processed
- QTHR means address is correct as set out in the WIA current Call Book

## TRADE HAMAOS

Conditions for commercial advertising are as follows: The rate is \$15 for 4 lines, plus \$2 per line (or part thereof) minimum charge \$15 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

**Amidon Ferrromagnetic Cores:** Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R. J. & U. S. Imports, Box 157, Mortdale, NSW 2223 (No enquiries at office: 11 Macken St. Oakley, 2223)

**CB Radios \$69:** walkie talkies, short wave radios, military outback, business, amateur, marine, repairs. RTTY Siemens 100A printer \$120; base mic., \$45; ultrasonic alarm. \$35; all ham bands on a single 6 ft. whip, 1.8 to 30 MHz, for base or mobile. \$300; aeriels, installation, demonstrations, 40 ch. CB conversions, accessories, new rgs weekly Bndge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW Mail order service and all enquiries to 2 Grlfith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066.

## EXCHANGE — OLD

**VINYL COVERED ALBUM** of first day covers — Aug 79 to latest issue. Includes odd supplements and duplicates. Also some period souvenir packs of mint stamps. Large album of single & multiple mint, and smaller album of used stamps — all Australian. Exchange for HF or VHF mobile ng VK40X QTHR.

## WANTED — ACT

**ICOM IC2A** or similar 2m hand held synthesised Txcvr. Small size a must. Also Dick Smith Level II System 80 computer Prefer Blue Ribbon or disk based system. Mike VK1VW Ph (062) 45 3161 (BH), (062) 88 7225 (AH)

**WANTED — NSW**

**CIRCUIT DIAGRAM** and/or handbook for Colonial Radio Corporation Sig. Gen. model I-130A also wanting power supply and leads. Circuit diagram and/or handbook for Cossor 339 Oscilloscope. RCA Transmitting Tube Manual. QVQ02/6 valve, socket for QVQ06/40, 200Pf & 350Pf wide spaced variable caps., 1kV 1000Pf feed thru caps., 10.7MHz valve type IF transformers & discr. Trans. If you can help please send prices to VK2XPB Box 131 Cooranbong, NSW 2265.

**COLLINS KWM-1** and power supply. Must be in reasonable condition Ph. (02) 502 1096.

**LINEAR AMPLIFIER**, legal limit on 20m and 15m (minimum), good home brew OK. VK2ATK. QTHR. Ph: (02) 80 4000.

**MORSE KEY:** PMG hand key wanted by CW enthusiast VK2DET Blackheath NSW Ph. (047) 87 7003

**PHILIPS TV TUNER**, type NT3016 for parts, particularly small plastic final gear wheel engaging with eccentrics on each channel for fine tuning (PCB biscuits). VK2AFU. QTHR. Ph. 53 5774

**RETIRED AMATEUR**, off air awhile, needs work on an FT100 to get back. Pay commercial rates. Book and circuit avail. Has Trio TR-2E 144/8 tunable AM valve job with book. Trade 6m unit or whatever. VK2AEM. 33 Flannelflower. Shoal Bay 2315 Ph (049) 813 4138

**WANTED — VIC**

**COPY OF PROJECT** "VK Powermate" 5A power supply in Electronics Australia, May 1978. Send article and cost to M. A Martin VK3VSM, 8 Taylor Ave. Reservoir Vic 3073.

**DATA AND CIRCUITS** of wide band amplifiers MF-HF-VHF other than OM350 TV amp. Interested in personal experience, experiments, etc. I will pay for copies, postage, etc. VK3VWV. Box 115, Heathcote 3606

**KENWOOD DG-5** digi-display. Also HF/VHF signal generator with calibrated output. To use when writing equipment reviews for AR. VK3QM QTHR Ph (03) 560 9215

**RECORDS:** 78's of jazz, dance bands, and popular music from the 1930s and 40s urgently required. Genuine collector. Can provide a tape copy if desired. VK3NJ QTHR Ph (03) 546 4924

**TRANSMITTER:** AT5 transmitter and cables, mic etc. Also regd FT221 VK3APZ. Ph. (03) 786 1536 (AH), (03) 647 3780 BH

**432MHz RIG** Belcom or similar. Buy or swap for new TS520SE, never fired up. VK3XEX. QTHR

**WANTED — OLD**

**TS120V** or **FT7** Price and condition to VK4FX QTHR Ph: (071) 71 3968

**WANTED — SA**

**ANTENNA.** 18AVT Vertical \$50. FT620 6M SSB/AM/CW Tcvt, condition to South-East Radio Group Inc. VK5SR QTHR

**WANTED — TAS**

**REMOTE VFO:** "Urgently" required for Kenwood TS520 series. Consider any state, anywhere. All replies answered. Also Kenwood MC50 desk mic. Top price for good gear. Contact VK7NSB QTHR. Ph. (003) 44 8972

**FOR SALE — NSW**

**ANTENNA.** 18AVI Vertical, \$50. FT620 6M SSB/AM/CW Tcvt, \$320 ONO. Ring Steve. Ph (02) 674 2104 after 7 PM EDST.

**ANTENNA:** TH3 JR fully assembled, 12 months use. \$120 John VK2DEJ QTHR Ph. (02) 80 5886

**COMPUTER.** TRS-80 16K Level II, all manuals, 32K mem, add-on unit and 60 recorded tapes, \$500 or swap for Kenwood R1000 "Helay" power monitor 150-50W, new, \$50 Exatron "stringy floppy" with 20 wafers (recorded) and manuals, \$270 VK2BBD Les. Longford Station, Bendemeer 2352

**DEEKO MAST.** 7 x 6ft sections, heavy duty guys, insulators, turnbuckles, \$150 VK2ATK, QTHR. Ph: (02) 80 4000

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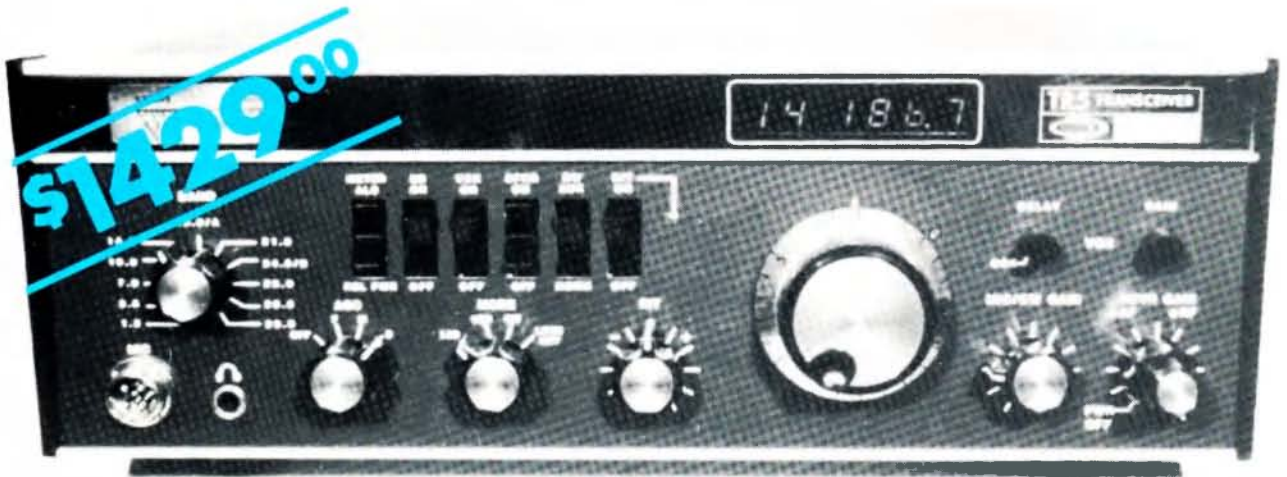
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