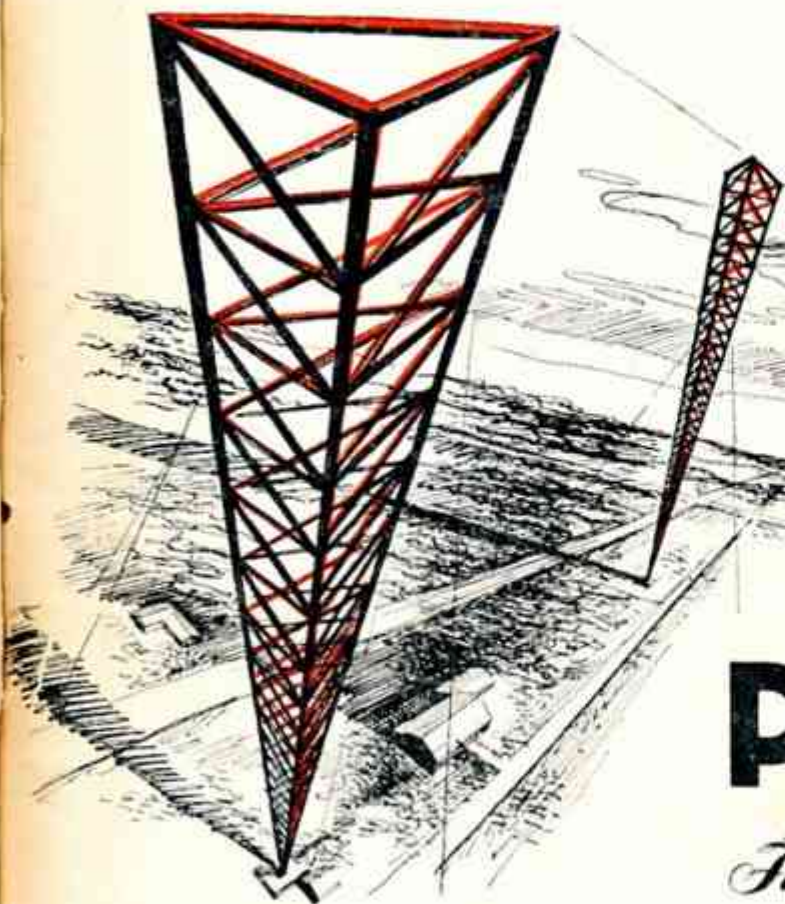


AMATEUR RADIO

JANUARY
1948

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



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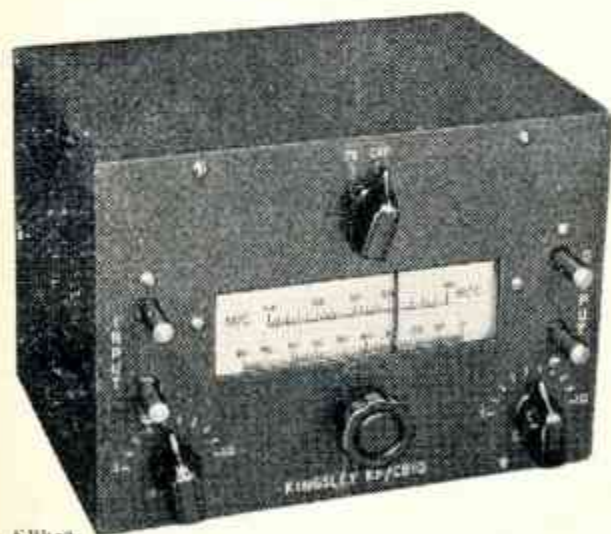
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EDITORIAL



Where once the v.f.o. was considered the obvious starting point for the beginner, and the crystal controlled transmitter the acme of finesse for the "old timer," the positions have been reversed as operating procedures have advanced and techniques have developed. The v.f.o., properly constructed and used, can do much to save needless calling, QRM and operating time. However, to achieve these worthy objectives, it must be cunningly devised and sensibly and unselfishly used.

On the other hand, in the possession of the wrong person it can become a selfish convenience. A practice which seems to be gaining favor in some States among some of the "funny boys" of Amateur Radio, and has been brought to our notice by the P.M.G.'s. Department. is that of "sliding" their v.f.o. up on to the frequency of either one of stations in QSO. and impudently butting into the conversation at the appropriate moment.

To say the least of it, this practice is neither funny to the station whose transmission is interrupted and is far from being treated as a joke or good operating practice by the P.M.G.

Further, it is a direct contravention of Section 98 of the "Handbook for the Guidance of Amateur Operators" (1946). This practice is not to be confused with unintentional interference which is such a common experience on our crowded bands today. Neither is it to be confused with one station being called into QSO with another on the same frequency with both stations' acquiescence.

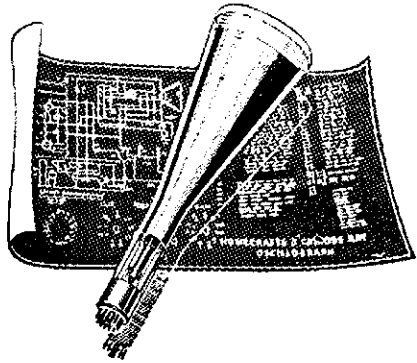
It is the deliberate interference being caused, to which the Department and we likewise, refer and if persisted with, a serious view will be taken followed no doubt by disciplinary action. It rests with those who have been using this method to playfully or otherwise make contacts, to cease this practice at once. Enough unintentionally bad signals and practices are at present being heard daily without resorting to deliberate selfishness of this kind.

All Amateurs can help by frowning upon such procedure, as ostracism is called for in such circumstances. To those who have been offenders, we can only conclude by saying — "YOU HAVE BEEN WARNED."

W.T.S.M.

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DUAL BAND OPERATION WITH THE SCR522

By H. SCHOLZ*, VK4HR

When an SCR522 was recently acquired from Disposals it was decided to alter it to cover both the 50 Mc. and 166 Mc. bands. In its original form the receiver was crystal controlled, on frequencies from 100 to 156 Mc., four spot frequencies being available from four low frequency crystals.

THE RECEIVER

Instead of using the low frequency oscillator and subsequent frequency multiplying stages, it was thought that a high frequency oscillator would be stable enough with the i.f. channel of 12 Mc. This proved so in practice.

The final arrangement of the tuning end was as follows:—At 50 Mc., the harmonic generator and harmonic amplifier became the r.f. and mixer stages respectively, and a 6K7 oscillator was added. On 166 Mc. the existing r.f. and mixer stages were used, and another oscillator added.

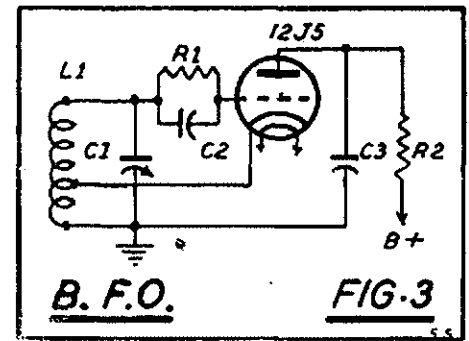
The r.f. and mixer stages are ganged and separate tuning used for the oscillators in each case.

The original low frequency oscillator was one section of a 12AH7 valve, the other half of which was used in a squelch circuit. These stages were removed entirely. In some sets a 12H6 valve will be found mounted underneath the chassis, and this stage was also eliminated. The block diagrams, Fig. 1, show the old and the new circuit arrangements.

The Audio Circuit.—Some complications occur in the audio circuit, as these stages were used for intercommunication between members of the plane crew, in addition to their normal functions. Transformer 295 was removed and the 12C8 was rewired in a conventional audio circuit as shown in Fig. 2. The audio squelch circuit comprising half of the 12AH7, the relay 246, the potentiometer 237

and associated resistors and condensers were removed. The 3 x 0.1 mfd. facing the r.f. portion of the set was also removed, two sections of this condenser were found to be wired into the squelch circuit, the third section being used for a.v.c. bypass; a 0.1 mfd. tubular condenser was fitted right at the terminal of i.f.t. 292.

Mainly to use convenient grouping of tubes and choosing those on hand, a 6J5 was substituted for the 12J5



R1—50,000 ohms
R2—0.5 Megohm.
C1—40 pF. trimmer & 3 plate midget
C2—100 pF.
C3—250 pF.
I.1—See text.

audio output, and its heater wired in series with the 6K7, 50 Mc. oscillator.

An octal socket was mounted in the position vacated by transformer 295, and the 12J5 used as a b.f.o., see Fig. 3. The circuit is conventional, and sufficient stray coupling was obtained without any coupling condenser.

One of the coils from the oscillator plate circuit was rewound to bring out a tap, approximately one third from the bottom end and was tuned by approximately 40 pF. of capacity. The coil (unshielded) was mounted under the chassis, next to the associated valve socket. A three-plate midget condenser, mounted on the front panel, is used to control the beat note.

I.F. Channel.—This was left in its original state.

166 Mc. R.F. and Mixer.—These circuits were left undisturbed except for increasing the spacing of the turns to reach the band.

166 Mc. Oscillator.—This is an addition to the set. Its circuit is shown in Fig. 4. The tube, the

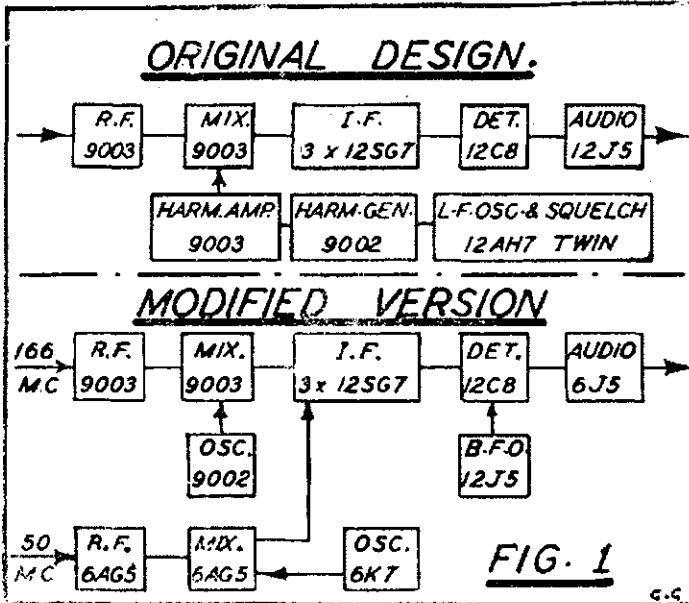


FIG. 1

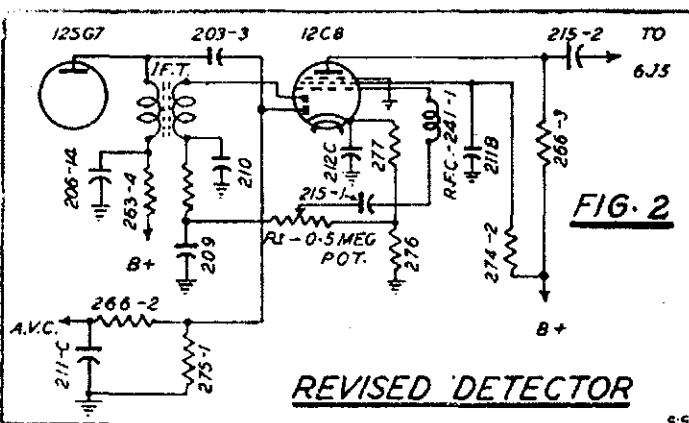
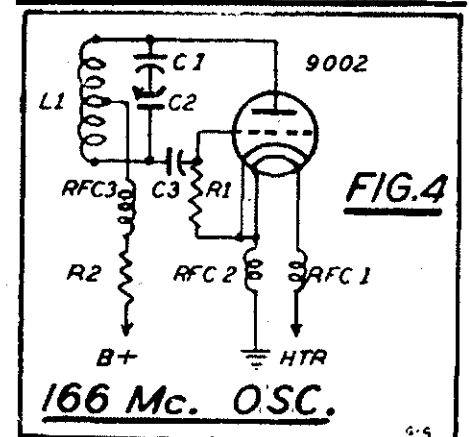


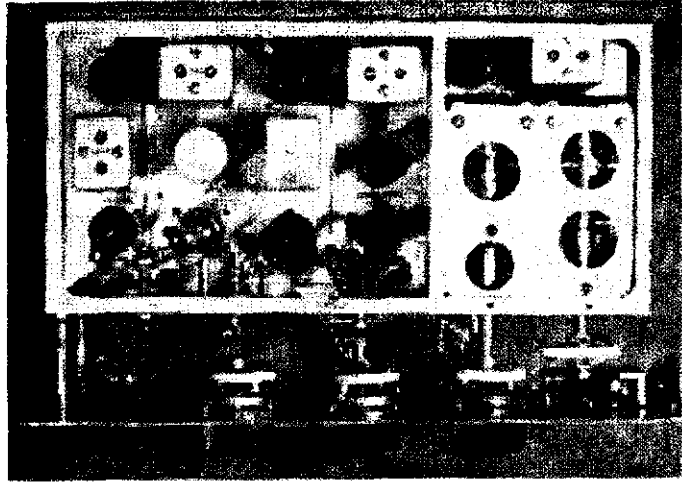
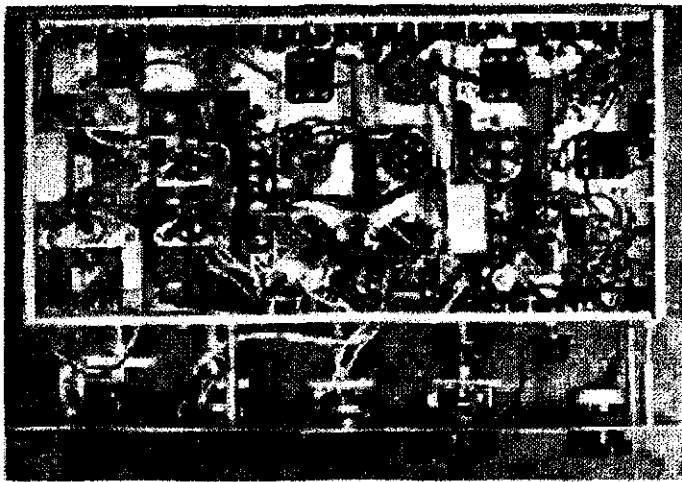
FIG. 2

REVISED DETECTOR



R1—50,000 ohms
R2—25,000 ohms
C1—Two plate midget.
C2—5 pF.
C3—50 pF.
RFC1 and 2—Parts No. 241-2, 241-3.
RFC3—similar choke as above.
L1—7 turns, pencil diameter.

* Jellicoe Street, Coorparoo, Queensland.



original 9002 harmonic generator, was mounted on a bracket attached to the rear of the original front panel. The plate pin of the socket was soldered direct to the lug of the two plate tuning condensers. The coil is mounted below the condenser and every effort made to keep the leads short. It will be noted from the circuit that a 5 pF. condenser is used in series to help band spreading.

The tuning condenser must be insulated from the panel. The heater chokes were parts No. 241-2 and 241-3, and will be found on the male portion of the power input connector. These chokes were found to be necessary in the heater circuit to give smooth oscillation over the band. They are mounted vertically beneath the 9002 socket, and projected through and anchored to the 12AH7 socket (this socket is otherwise unused). It was found essential to join the cathode to the filament above the choke, that is right at the 9002 socket.

A similar choke was obtained from other equipment for the plate choke, or one could be wound on a high-value resistor.

The tuning coil was of 7 turns, wound on a pencil and spaced to hit the band.

Considerable experiment was necessary to obtain optimum injection of the oscillator, and the final arrangement was a stiff piece of insulated wire hooked into the grid end of the oscillator coil, passing through the hole at the side of the 12AH7 socket, thence under the chassis and running close to the mixer coil, and one turn around the mixer valve.

The 50 Mc. Tuning Stages.—Before commencing on this it is essential to remove the section containing the two gang condenser. Remove the bolt and two nuts on top of assembly and disconnect the wires leading to the terminal strip at the side of the assembly. This will permit removal of two gang condenser, valve sockets

and associated resistors and condensers as an entire unit.

The circuit of these stages is shown in Fig. 5. In place of the 9000 series, two 6AG5s were used, with considerable improvement in performance. The harmonic amplifier becomes the mixer, and the harmonic generator the r.f. stage. Grid leak biasing is used on the mixer.

The value of plate dropping resistor on the r.f. stage was considered too large and was replaced by one of 5,000 ohms. The screen circuit had to be added to the r.f. stage, as the socket was wired for a triode. The tuning circuits are naturally transferred from the plates to the grids.

Coils are air spaced and wound with heavy gauge wire. They are mounted behind the valve sockets, thus enabling the grid connections to be reduced to a minimum.

The oscillator is a 6K7 and is mounted in the hole which was previously occupied by relay 246. The circuit is quite straightforward and requires no explanation.

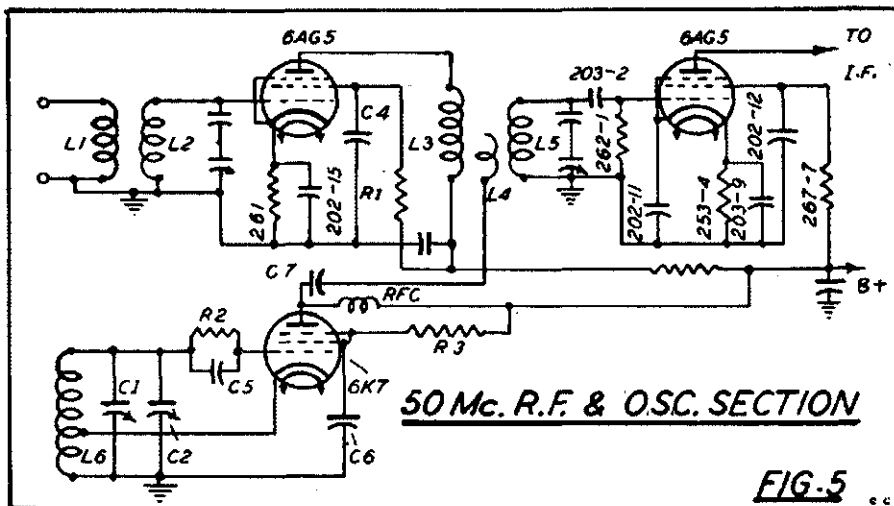
A common connection to the first i.f. transformer is made from the plate of both mixers.

Injection to the mixer is obtained by coupling from the oscillator plate through a 100 pF. condenser and a one-turn coil dropped into the mixer coil and adjusted for optimum injection. Coupling from the plate of the r.f. tube to the mixer is obtained by dropping a two-turn coil into the mixer coil and adjusting for best results.

Heater Circuits.—To operate on 166 or 50 Mc. it was decided to switch either the 166 or 50 Mc. mixer, r.f. and oscillator heater circuit by means of a d.p.d.t. toggle switch as shown in Fig. 6.

Due to the fact that the 6K7 50 Mc. oscillator valve is in series with the 6J5, its plate and screen high-tension supply was switched by means of two spare contacts on the switch.

The 9002 requires a resistor of 42 ohms in series with its heater. In



L1—2 turns
L2—6 " } 3/4" diameter.
L3—2 " }
L4—1 " }
L5—6 " }
L6—7 turns, pencil diameter.
RFC—Four-tier RFC.

C1—5 plate.
C2—3 plate, double spaced.
C4, C6—0.005 mfd. Mica.
C5, C7—100 pF. Mica.
R1—0.1 Meg., 1 watt carbon.
R2, R3—50,000 ohms, 1 watt carbon.

POLYTHENE

Polythene, discovered in 1933 by research workers of I.C.I., is a general term for a range of solid polymers produced by subjecting ethylene gas to very high pressures. It has outstandingly good electrical insulating properties.

First produced towards the end of 1939, polythene immediately became of vital importance as an insulator for radio-location or "Radar." While Radar—another triumph of British wartime inventiveness—would no doubt have been developed without polythene, it is equally certain that it could not have done so with such rapidity as it did.

Today polythene is employed all over the world in the manufacture of telecommunication and submarine cables, and is also finding a variety of applications, ranging from chemical plant components to lamp shades.

RESEARCH AND DEVELOPMENT

Polythene was discovered through a programme of fundamental scientific research undertaken by I.C.I.'s Alkali Division. This work was unrelated to any processes then being operated, and was directed purely to broadening the field of knowledge of the mechanism of chemical reactions under extreme physical conditions.

Early experimental work on high pressures was carried out by the French scientist Amagat over half a century ago. Brunner, Mond & Co. (the parents of I.C.I.'s Alkali Division) became interested after the First World War through contact with Prof. A. M. J. F. Michels, of Amsterdam, University. Several of Brunner Mond's staff worked with Prof. Michels, who was doing a great variety of work at high pressures, and he frequently visited their laboratories at Winnington, Cheshire. From this collaboration grew I.C.I.'s decision to undertake research on the effect of extremely high pressures (from 15,000 to 300,000 lb.) on certain chemical reactions.

Despite the world depression, this project was embarked upon in 1930. Work started in 1931, and over a year was spent developing the technique of making and handling the laboratory apparatus. The chemical studies began a year later. The first period was one of great disappointment and it was not until 1933 that anything novel was found. Early that year, when carrying out a series of reactions involving ethylene—the reactive gas well-known to organic chemists—a trace of a white solid was found in the reaction vessel. This was polythene, a solid polymer of ethylene.

Another two years elapsed before improved technique for dealing with the enormous pressures, and larger and more efficient apparatus, made a systematic study of this entirely new material possible. Almost immediately a whole series of setbacks were encountered. Attempts to repeat initial experiments resulted in violent

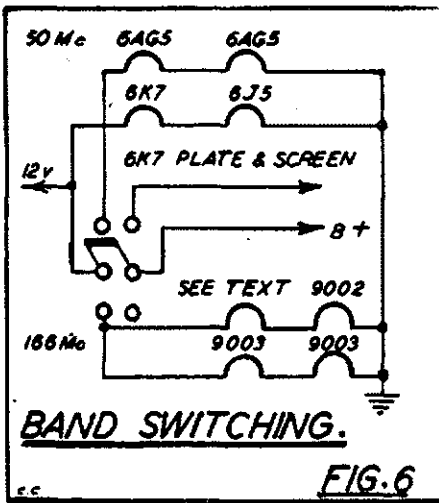
and inexplicable explosions in the reaction vessels. There was a constant danger of the apparatus being wrecked. On one occasion the laboratory was, in fact, badly damaged.

At length, however, through studying the reaction conditions and paying particular attention to the purity of the ethylene gas, the process was brought under control. By 1936 important advances had been achieved, and the first beginnings were made towards devising a continuous process of manufacture, which was essential if an ultra high-pressure process was to be a practical proposition.

Development was not easy. Work at pressures above 15,000 lb. per square inch made it necessary to design novel gas compressors, joints, valves, tubing, reaction vessels and similar equipment. As the pressures were similar to those occurring in a gun on the explosion of the charge, the technique used in the manufacture of artillery was adopted.

The many difficulties were finally overcome, mainly by devoted teamwork, and in 1937 continuous running on a small pilot plant in the laboratory was achieved. The following year saw the construction of a proper pilot plant unit, capable of demonstrating the basic ideas of a full-scale manufacturing process.

During this period of technical development, a study was also being made of the properties of this wholly novel product. Its outstanding electrical characteristics—great toughness, flexibility, lightness and water resistance—augured a promising future in electrical engineering. In 1938 contact was made with the Telegraph Construction & Maintenance Co., who had many years' experience in the processing of gutta-percha, particularly for under-sea cables. They were quick to realise the possibilities of polythene and adapted some of their machinery to the new material. An experimental length of submarine cable was made at the end of 1938, and a mile length in 1939. Even at this early, imperfect stage, great interest was shown by the British Post Office. Further experience indicated that polythene was not only promising for telephone and telegraph cables, but also for high-



my case I had on hand a 9006, which was mounted underneath the chassis at the side of the 50 Mc. r.f. assembly, and its heater wired in series with the 9002.

THE TRANSMITTER

As there appears to be some uncertainty regarding the 166 Mc. band being retained or changed to 144 Mc., a detailed description of the conversion of the transmitter will not be given.

For 166 Mc. the final tank coil had to have its turns spread considerably.

The plate lines to the 832 second tripler were shorted approximately half way and the grid coupling condensers moved about 1 inch nearer the plates.

One turn was taken off each end of the 12A6 tank coil. The plate and screen of the 6G6 were disconnected from B+, and the plate end of the tank coil also disconnected. A 7-turn, one inch diameter, space wound coil was soldered across the tuning condenser and link coupled to the main transmitter exciter at a frequency of 28 Mc.

The 12A6 tripler now becomes a doubler to 56 Mc., the 832 remaining a tripler to 168 Mc. By this means an abundance of drive was available for the final amplifier.

BACK WAVE

'Tis just fifty years since the Universal (International to you) Morse Code was introduced in Australia. A P.M.G. circular of 1897 reads:—

"On and after 1st July, 1897, the Universal Morse Code is to be used in all the Australian Colonies.

"Every operator in the service must make himself thoroughly acquainted with the new code and be quite proficient in its use by the date specified.

CHARLES TODD,
P.M.G. and Supt., Telegraphs,
G.P.O. Adelaide,
6th April, 1897."

frequency work, especially in television.

Results were so satisfactory that I.C.I. too decided to design and erect a full-scale manufacturing unit. This came into production on September 1, 1939—the very day Germany invaded Poland—but polythene had already given such evidence of its potentialities that the decision to double the capacity of the plant had been taken even before it started.

The first ton of polythene from the full scale unit was used in experimental work with radio-location or Radar, which had been developed during the same period. The outbreak of war brought the two inventions together. Although, in early 1940, polythene was mainly being developed for the insulation of special submarine cables, by the time of Dunkirk, when the second unit of the original plant came into operation, the bulk of the output had already been diverted to the manufacture of Radar cables. To quote Sir Robert Watson-Watt, F.R.S., the pioneer of Radar, Polythene "transformed the problems presented by airborne Radar from the almost insoluble to the comfortably manageable," and "played an indispensable part in the long series of victories in the air, on the sea and on the land, which were made possible by Radar."



Group of Co-Axial Cables with Polythene insulation.

To assure supplies, an entirely new plant was designed in 1940 and came into production in 1942. A continuously rising output was maintained, even though operating difficulties were still not entirely overcome.

Meanwhile, in 1940, I.C.I. had shipped polythene to America. It was processed by the Du Pont Co., and a cable made by the Western Electric Co. was laid on a section of the Bell Telephone Co.'s trunk telephone lines. The United States had also experienced difficulties over the insulating of Radar cables, and in 1941 it was decided to standardise on polythene. Accordingly, an American delegation visited I.C.I. and were given full information about manufacture. Production started in America in 1943.

Polythene's wartime contribution to Radar overshadowed everything else, but it had other important uses, as

sleeving in radio equipment, in the fuses of rocket shells, and, as strip or transparent film, for packing the anti-malarial mepacrine—this sensitive drug had tended to deteriorate in the hot damp climates of the malarious battle areas to which it was sent. It was found, however, that polythene packs kept it in perfect condition, even when it was actually immersed in water.

With the end of the war, polythene once more became important in the field of telecommunication.

PHYSICAL CHARACTERISTICS

Polythene may be described as a solid comprising a large number of ethylene units, five hundred or more, linked together under the combination of extreme pressure temperature and a catalyst. Ethylene can be produced in two days—from alcohol via molasses by catalytic dehydration, and also from petroleum cracking gases. The ethylene is purified with the utmost care, and then carefully and accurately mixed with oxygen in a very small concentration. The mixture is compressed in two main stages to 1,200 atmospheres and finally enters the reaction vessel at 200°C. During the polymerisation a considerable amount of heat is developed and the removal of this has been the subject of ingenious design in the manufacturing plants. The liquid polythene emerges from the reaction vessel in the form of a pellucid stream. It is then cast into blocks.

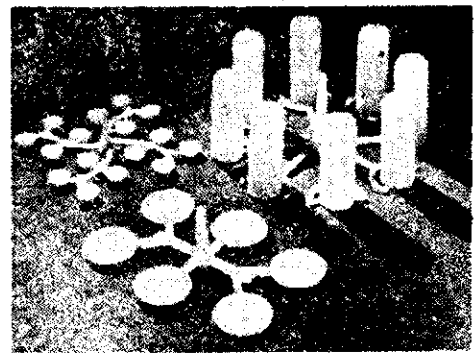
"Alkathene," I.C.I.'s brand of polythene, is a tough, waxy-looking material—normally white, though sometimes slightly grey or pink—made in the form of sheets, rods and granules or chips.

It has a remarkable combination of insulating properties—i.e. great dielectric strength, great toughness and flexibility, lightness and extreme water resistance. Chemically, it is very inert and is usually only attacked by acids or alkalis at high temperatures. It is thermoplastic and can be extruded or moulded by compression or injection. No special tools are needed for machining or welding. Its tensile strength falls with increasing temperature and it melts sharply at about 115°C, the yield-point being reached at about 90°C.

PERFORMANCE

The generic name polythene covers a whole range of products with gradations in properties, and I.C.I. manufactures various grades of "Alkathene" suited to the performance required of the finished article. Hard grades are less liable to attack by chemical reagents than the soft, which are easier to process.

"Alkathene's" outstanding combination of electrical properties makes it very valuable for all types of electrical equipment—e.g., for solid insulated and airspaced high-frequency cables, where the power loss is required to be as small as possible, and for submarine and power cables. Other electrical applications include



Group of mouldings produced from "Alkathene" by injection moulding process. Note injection runners or "sprues" which are cut off after mouldings are removed from press.

moulded parts, such as cable ends, high voltage brushings and condenser dielectrics.

The suitability of "Alkathene" for electrical purposes should not, however, be allowed to overshadow its other applications. Compounded with waxes, the soft grade raises their melting point and reduces the tendency to crack or flake. Its good water resistance makes it an excellent wrapping material, especially for hot or humid climates. It may also be used for moulded containers and general fancy goods. Its translucent white appearance is attractive, and it is easy to colour by the addition of pigments.

PRODUCTION AND SUPPLY

In the United Kingdom, polythene is manufactured by I.C.I.'s Alkali Division and marketed by I.C.I. Plastics Division under the trade name of "Alkathene."

Despite the fact that plant capacity has reached two hundred times the output of 1939 and two thousand times that of 1938, practically all production is absorbed by high priority requirements, such as cables and industrial mouldings. Plans for new plants and increased output are in active preparation.

LATEST DEVELOPMENTS

"Alkathene" has recently been developed as a coating for papers and fabrics. Materials treated in this way are glossy, tasteless, odourless, and almost water white. Tests indicate that they are likely to be of value for many applications and particularly for the packaging of foodstuffs and chemicals.

Polythene is also finding a wide range of industrial uses, where its chemical inertness and toughness are of great importance. It is, for instance, being moulded for press tools for metal pressings, chemical plant components and mouldings.

Other uses range from tubing in cold-water plumbing and beer-pumping installations in bars and breweries, to suspenders, and liners for bottle closures. Attractive and delicately tinted lamp shades are being made from another form of polythene known as "Crinothene."

SOME MEASUREMENTS OF THE IMPEDANCE MULTIPLICATION FACTOR OF FOLDED DIPOLES

The folded dipole has proved very popular amongst the Ham fraternity. We have, in the past, published comprehensive details of this efficient antenna and for interested Amateurs the following observations, made by VK3YC, agree with information contained in the articles of May issue, 1947, of "A.R."

By J. O'SHANNASSY*, VK3YC

I had been using, with some measure of success, a formula for the Impedance Multiplication Factor of folded dipoles which has been passed on to me by Mr. E. J. Wilkinson (A.M.I.R.E.), of the P.M.G.'s Department, and was therefore very interested in the article by George Choules (VK3AHB) in February "Amateur Radio." His formula disagreed with the one I had been using because of his assumption that the current distribution between the elements was proportional to the ratio of the cross-sectional area of the elements, whereas Jim Wilkinson's formula was based on the assumption that the current was distributed in the ratio of the surface area of the elements.

After a discussion of VK3AHB's article, it was decided that the best way to solve the problem was to actually measure the Impedance Multiplication Factor of various folded dipole arrangements and so settle the argument for all time.

After the measurements had been proceeding for some time we found that neither formula was right, although Jim Wilkinson's was much nearer the mark than George Choules', particularly for the higher multiplication cases where it was found that the high multiplication factor given by George's expression could certainly not be attained in practice. While we were considering these results and trying to evolve an expression which would satisfy them, the articles by Kevin Magee (VK3KM) and Dr. Guertler appeared in May "Amateur Radio." We immediately applied their results to our figures and obtained quite good agreement, as will be seen later.

These measurements involve only apparatus which is easily accessible to almost every Amateur, so I will describe in some detail the method of measurement and the apparatus used. The set up of the apparatus is shown in Fig. 1.

For convenience in making and handling the folded dipoles a frequency in the region of 150 Mc. was used. As a source of r.f. power the transmitter portion of an SCR522 V.H.F. Transceiver was used. This transmitter is crystal controlled and

delivers a power of 10 watts in the band 100-150 Mc. It was decided to use a source of this nature rather than a low powered oscillator so that a fairly insensitive Standing Wave Indicator could be used.

The open wire line consists of two lengths of $\frac{3}{8}$ " diameter copper tube spaced 1-17/32" apart on Polystyrene insulators. This wire diameter and spacing gives a Characteristic Impedance (by calculation) of 252 ohms but, as will be shown later, the actual value of the Characteristic Impedance does not matter for our purpose. However, a value in the region of 250 ohms is convenient because it does not lead to excessive Standing Wave Ratios.

When the measurements were first tried, the apparatus was set up on a bench inside a room but it was found that movements of the operator had a marked effect on the Standing Waves, so the folded dipole was mounted outside the hut, with the corrugated iron wall acting as a shield. The presence of this earth plane affects the input impedance of the aerial but as we only wanted to determine Impedance Multiplication Factors, this does not matter as long as every antenna under test is mounted exactly the same distance from the wall.

Each antenna was first adjusted to be non-reactive. This is easily done by trimming the antenna until, on connecting and disconnecting the antenna to the line, the positions of the standing wave maxima and minima do not change (although their magnitude will). Under this condition, the antenna input impedance (Z_1 , Z_2) is then equal to the Characteristic Impedance (Z_0) of the line multiplied or divided by the Standing Wave Ratio (SWR_1 , SWR_2) depending upon whether the antenna impedance is greater or less than Z_0 . Thus for an ordinary dipole trimmed to length to have a non-reactive input impedance, the impedance—

$$Z_1 = \frac{Z_0}{SWR_1}$$

(Z_1 is approx. 80 ohms, Z_0 equals 252 ohms, SWR_1 is greater than 1).

When a folded dipole is connected and its length trimmed to make it

non-reactive, its impedance $Z_2 = Z_0 \times SWR_2$ (because Z_2 is greater than Z_0 , and SWR_2 is greater than 1). Therefore the Impedance Multiplication Factor = $\frac{Z_2}{Z_1}$

$$= \frac{Z_0 \times SWR_2}{\frac{Z_0}{SWR_1}} = SWR_1 \times SWR_2$$

A set of measurements was first carried out with fixed element spacing and varying diameter ratios, then another set with a fixed diameter ratio and varying element spacings. These results are listed in tabular form below, together with the calculated values using the expression:—

Impedance Multiplication Factor = $(1 + x)^2$

$$\log \left\{ \frac{\text{spacing}}{\text{smaller radius}} \right\}$$

where $x = \frac{\log \left\{ \frac{\text{spacing}}{\text{larger radius}} \right\}}{\log \left\{ \frac{\text{spacing}}{\text{smaller radius}} \right\}}$

as given in May "Amateur Radio." It can be seen that quite a fair agreement exists between the measured and calculated values (better than 10% in all cases).

Constant Spacing

Dia. A	Configuration		Impedance Multiplication Factor	
	Dia. B	Spac. C	Measured	Calculated
1/8"	3/8"	1 1/2"	3.96	4.0
1/8"	1/2"	1 1/2"	5.7	5.3
1/8"	3/4"	1 1/2"	6.08	5.7
1/8"	1"	1 1/2"	8.3	8.9
1/2"	0.19"	1 1/2"		

Constant Diameter Ratio

Dia. A	Configuration		Impedance Multiplication Factor	
	Dia. B	Spac. C	Measured	Calculated
1/8"	1/2"	1"	8.89	9.0
1/8"	3/4"	1"	6.19	6.25
1/8"	1"	1 1/2"	5.67	5.75
1/8"	1 1/4"	2"	5.48	5.5
1/2"	1"	2 1/2"	5.25	5.3

In the above Table A and B are the diameters of respective elements. C being the centre to centre spacing thereof. With the exception of 0.19" element which was of solid copper, elements used consisted of copper tubing.

Further measurements are in progress with a view to finding the practical upper limit of Impedance Multiplication and some results should be available shortly.

Owing to a misunderstanding the illustration accompanying this article will not appear until the February issue.

* 8 Park Ave., Glenhuntly, S.E.9.

"MY RIG AND WHY"

BY E. A. CHARLES*, VK5YQ

Being VKs, a full explanation is in order on the "Why." So we (apologies to VK5MD) must take you back to 1946. The "we" is used because VS2BC/E/G and BZ all, on some occasions, operated VS2BF before getting/making use of their own calls. As the first active post-war VS2 our return to Amateur Radio could only be described as "de luxe." We had no competition (excluding the J and KA kilowatts) and we were DX—it chased us and not vice versa as now! The transmitter was a BC610 (Halicrafters HT4) running an input up to 600 watts; the antenna a half-wave dipole twisted pair feed, up on 70' steel masts. So, W.A.C. on 14 Mc. phone was somewhat easy—the first page of the log showing 24 QSOs comprising 14 countries (the only VK then being VK6DD).

Now here is the point to make clear. On the BC610 is a hi-power/low power switch which cuts the input to the final down to 90 watts—a carrier output of only 25 watts compared to approximately 500 watts with an input of 600 watts—as accurate as we could measure it. The greatest reported change in signal strength when switching from 500 to 25 output was only ever 2 (two) S points. So, with the advent of the return of the civilian amateurs (and a visit from the R.I.) the BC610 was normally run on the low power setting! Our results stayed the same! You triers modulating an 813 with Class B 811s have a long way to go.

However, many of our reports could undoubtedly have been improved with a beam antenna. There is no denying the signal VS2BU puts in with 25 watts to a simple rotating half-wave doublet almost any night.

And so we returned to VK land. The teething troubles of putting a rig on the air are omitted, as we all very rapidly learn that the circuits we put together so nicely are like the multi-element rotary beam you adjust according to theory—they never ever work properly until adjusted under actual operating conditions.

After installing the 807 at maximum ratings with all mod. cons., many hours were spent calling before we again struck conditions that got us a few Gs and Ws. Then what happened? "Your sig is S7 but your modulation sounds a bit thin OM"—and I'm watching the 100% trapezoidal pattern on the VCR139A! (used continuously since receipt of a pro forma B after idly using the Type 3 Mark II one day). "Say OC could you please QSY a few Kcs. either way to dodge that S9 ZS QRM?" And so it went on.

The decision to rebuild was to be

delayed no longer. However, perhaps a rotary beam was the secret. So we (thanks to the QRM boys) put one up. It worked—down to S1 off the ends, S5 off the back. Good, now we're set. Improvement most noticeable on reception though. We work a little of that elusive DX—conditions must be good. They are, for so is our friend around the corner using 20 watts to his 807 and a full-wave zepp. But again, "Your modulation is down OM, please QSY."

We will rebuild. Since 28 and 14 Mc. appear to be the only post-war bands to put one again in fairly reliable communication with the friends we made while away, the new Tx shall be for 14 Mc. and above. The sturdy little Type 3 Mark II is quite OK for intra and interstate QSOs on 3.5, 7 and 14 Mc. bands at most times with any antenna.

The addition of a pre-selector and bandspread leave only a crystal filter to be desired to equal the performance of almost any communication receiver. The building of the latter is held in abeyance pending results of the W.I.A. Disposals negotiations!

A metal table console Tx was considered until the size and weight ruled it out—it covered most of the table which sagged somewhat. Since we were building for results and not display, reasonable compactness could be obtained without any noticeable loss of efficiency. This reduced size, using steel chassis and panels enable the complete station to be housed and operated in an angle iron (welded old bed rails) rack measuring 66" x 19" x 12½". Should we ever need an antenna tuner it can sit on top with the frequency meter/monitor. (Present aerial feed system is co-ax feed to single turn loop.)

The r.f. chassis: 16" x 12" x 2½"; 6V6 e.c.o. on 1.75 Mc., 6V6 buffer-quadrupler to 7 Mc. with voltage regulated separate power on this chassis (just as stable with the VR tube removed). 6L6 doubler-driver to 14 Mc. to Push-Pull 807s (Push-Pull for 28 Mc. when the Rx gets there).

The a.f. chassis 16" x 5" x 3"; 6J7, 6SN7, 6H6 (peak limiting), 6V6 triode driving AB₂ 807s. No longer is my modulation down, although we have not as yet completely removed the resultant distortion when she is fully wound up.

The power supplies are on same shelf as modulator but on separate chassis. 5Z3s are all that is necessary for a 100 watt Tx.

The third 9" shelf holds up the 45 volt bias battery and the simple c.r.o. modulation checker. You know just how you are operating—something meters alone can never ever tell you. And why inflict horrible

noises on the long suffering ears of your fellow Hams (4EJ and 5LG please note) or use up many more Kcs. than the R.I. will soon let you know you may not so do?

The v.f.o. exciter, located next to the receiver, is no doubt very nice and convenient but it is a temptation to wander about the band and produce a few more letters to our Editor. Now it is just out of reach in the sitting position so we find it easy to stay there ("there" being absent on the BCL set next door) unless QRM is reported.

The fourth shelf down, a masonite operating table, that will house the receiver at the back (Disposals willing).

The antenna.—You will ultimately put up a complex rotary beam to put a better signal where you want it, to cut down received QRM and, last but by no means least, to cause less QRM yourself, on the "Golden Rule" principle. And all the others you've been trying that are doing unskilled duty as parasitic reflectors, directors and absorption wavemeters will be eventually taken down to rest. Alas, at time of writing, we plead guilty with a vertical, the simplest while the beam is undergoing repairs and additions for 28 Mc.

And now, the results! Last week we contacted 90% of all called, and began to lose interest—too easy! But that was last week—using a Reinartz square loop pointing (theoretically) to VK7, ten countries in three days (14 Mc. phone) from VU via XE to ZL and 50% at S9 reports. This week, not so good!—guess we'd better get to work and put up that beam again! But 5LW contacted 4 Ws on his Type 3 Mark III! So what can we really say?

At least you know you have sufficient power and it is easy to make full use of it.

Boy, oh boy, have I any ideas for the next new rig! Say, does anyone know a good antenna that will get DX? 5JK need not reply.

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on 15th January, 1948. Lectures are held on Monday and Thursday evenings 8-10 p.m. Persons desirous of being enrolled should communicate with the Secretary Box 2611W, G.P.O. Melbourne; Phone FJ 6997 from 9 to 5, or the Class Manager on either of the above evenings.

* 193 Young Street, Unley, S.A.

R.S.G.B. CERTIFICATES

Prior to the war the Radio Society of Great Britain issued a series of Proficiency Certificates for long distance work. These Certificates were based on an Empire theme and all were keenly sought after by members and non-members alike. The Council wisely decided to wait awhile before reviving these awards. That time has now arrived and claims may again be submitted.

In the light of experience it has been decided to tighten up the requirements of the H.B.E. and to issue a set of General Rules for all Certificates with short Rules governing individual awards.

GENERAL RULES GOVERNING ISSUE OF ALL CERTIFICATES

The following general rules and conditions apply to all certificates issued by the Society, and should be read in conjunction with the conditions which govern the award of the individual certificates.

(1) R.S.G.B. Certificates will be issued free to corporate Members of the Society, and on payment of a fee of 2/6 (or an equivalent amount in other currency) to non-members of the Society.

(2) In the case of transmitting awards, claimants must certify, in writing that their licenced power was not exceeded in effecting the contacts upon which their claim is based.

(3) All claims must be sent by

registered post and addressed to the—

General Secretary,
Inc. Radio Socy. of Great Britain.
New Ruskin House,
28 Lt. Russell St., London, W.C.1.

and each such claim must be accompanied by documentary proof in the form of letters or cards showing that two-way communication has taken place. A minimum Readability report of R3 and a Tone report of not less than T8 must be recorded on each card or letter submitted.

(4) Contacts with mobile stations (other than ships) located in the British Empire will be accepted providing that the exact location of each such station at the time of contact is clearly stated in the evidence submitted.

(5) British Mandated Territories and Protectorates will be regarded as forming part of the British Empire.

(6) Holders of an R.S.G.B. award are authorised to use the initial letters of the award followed by (C.H.)

in personal correspondence. The letters C.H. signify Certificate Holder.

(7) In the case of any dispute concerning a claim, the decision of the Council of the Society will be final.

BRITISH EMPIRE RADIO TRANSMISSION AWARD (B.E.R.T.A.)

(1) The British Empire Radio Transmission Award may be claimed by any fully-licenced radio amateur who can produce evidence of having effected two-way communication on amateur frequencies, with Amateur Radio stations in at least 25 of the British Dominion Call Areas listed in Appendix I, and with at least 15 of the British Colonial Call Areas listed in Appendix II. Contacts may be made either on Telegraphy or Telephony. If all the contacts are made on telephony, the award will be annotated accordingly.

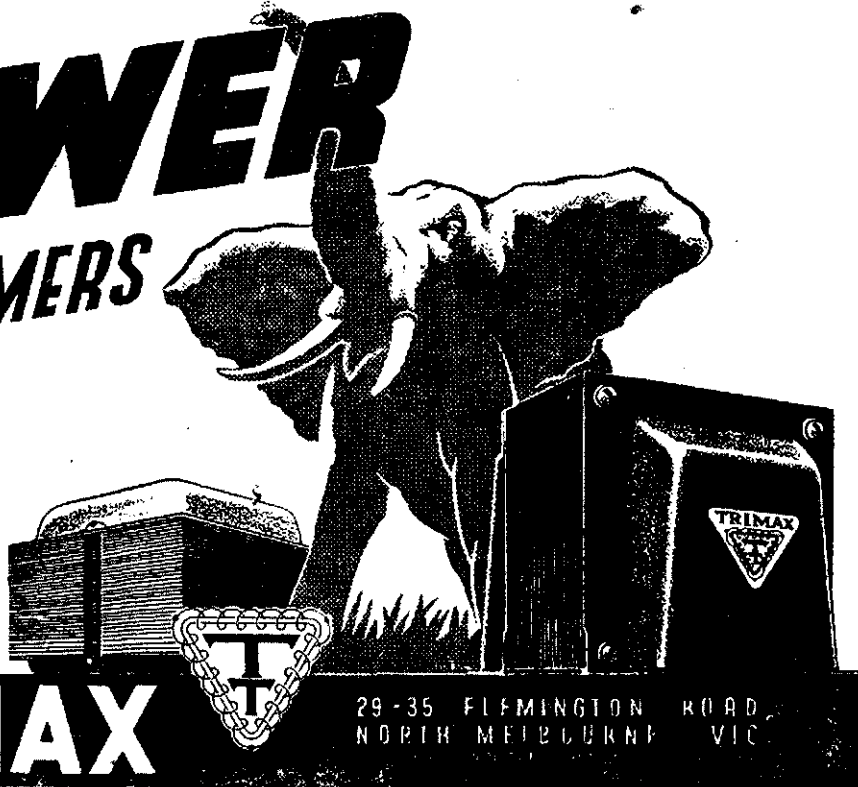
HEARD THE BRITISH EMPIRE CERTIFICATE (H.B.E.)

(1) The H.B.E. Certificate will be issued to any radio amateur who has received signals from Amateur Radio transmitting stations located in at least 25 of the British Dominion Call Areas listed in Appendix I and from at least 15 of the British Colonial Call Areas listed in Appendix II.

(2) In the case of licenced amateurs, confirmation of two-way contacts will be accepted as evidence of the reception claimed.

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VALVES.—We have large quantity of all types of Valves. Transmitting and Receiving.

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AMERICAN TYPE C.R.V. 52233. 6 valve, covers 40 and 80 metres Bands. Valve line-up, 2-6N7's, 1-807, 1-VR150 into 2-815's. Two slide in Coils. Phone M.C.W., C.W. An excellent buy at £10, less power supply.

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HIGH-FREQ. TRANSMITTERS and OSCILLATORS.

We have in stock several of these units, which may be useful to high-freq. experiments. Also have a quantity of incomplete units for wrecking purposes.

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REMOTE CONTROL UNITS, complete with mic. and phones. Morse key. Can be used for house phones, &c. Condition as new. To clear £1 each Order now.

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TRANSMITTERS. 3B.Z. A.W.A. Xtal controlled, 6 holders, band coverage 3.5 Mc. and 7 Mc. Tubes used, 4.6V6's-1-807, Vibrator operated off 12-volt battery. Meter for all stages. This set operates on phone of C.W. Price £17/10/0

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WORKED THE BRITISH EMPIRE CERTIFICATE (W.B.E.)

(1) The Certificate will be issued to any fully licenced radio amateur who can produce evidence of having effected two-way communication on amateur frequencies with at least one British Empire Amateur Radio station located in each of the five recognised Continental Areas as defined by the International Amateur Radio Union (North and South America count as one Continental area).

(2) Separate Certificates will be issued for:—

- Two-way Telegraphy communication on any amateur frequency band.
- Two-way Telephony communication on any amateur frequency band.
- Two-way Telegraphy communication on the 28 Mc. band.
- Two-way Telephony communication on the 28 Mc. band.

THE EMPIRE DX CERTIFICATE

The Council takes pleasure in announcing that a new certificate—to be known as the Empire DX Certificate—is to be issued to those who submit evidence of having established:—

- Two-way contact on 14 Mc. with amateur stations situated in 50 Empire countries or call areas; and
- Two-way contact with amateur stations in 50 different Empire countries or call areas irrespective of the band used other than 14 Mc.*

A list of Empire countries and call areas upon which claims are to be based appears below as Appendix I and II.

When the new 21 Mc. band becomes available to amateurs a special Empire DX Certificate will be issued to those who submit proof of two-way contacts with (a) 50 Empire countries or call areas on that band, and (b) 50 Empire countries or call areas irrespective of the band used, other than 21 Mc.

Up to now the British Empire Radio Transmission Award (B.E.R.T.A.) has been the only R.S.G.B. Certificate that compares with the well-known A.R.R.L. DX Century Club Certificate. The requirements for the B.E.R.T.A. are, however, rather less stringent than those for the DX C.C.

It is hoped that the Empire DX Certificate will become a yard-stick for measuring the achievements of amateur stations.

* Only one station in each call area may be entered irrespective of band, i.e. if VK2 on 7 Mc. is claimed a card from VK2 on 28 Mc. cannot be entered. In such a case it is, of course, in order to enter a card for VK2 under (a) for 14 Mc. and one for VK2 under (b) for one of the other bands.

W.B.E. AWARDS ONLY

The Council of the Incorporated Radio Society of Great Britain may, at their discretion, and on receipt of formal application, authorise the Secretary of a recognised Overseas Amateur Radio Society to approve claims from non-members of the Society. In such circumstances the Society in question will assume responsibility. All claims for the B.E.R.T.A. and H.B.E. Awards must be submitted to R.S.G.B. Headquarters.

APPENDIX I

The following is a list of the British Dominion Call Areas upon which claims for the "Empire DX Certificate," the "British Empire Radio Transmission Award," and the "Heard the British Empire Certificate" must be based:—

England G	South Australia VK5
Channel Islands GO	West. Australia VK6
Isle of Man GD	Tasmania VK7
Northern Ireland GI	New Guinea VK9
Scotland GM	Newfoundland VO1-5
Wales GW	Labrador VO6
Eire EI	Nth. India (above 15° Lat.) VU
Maritime Provs. VE1	Sth. India (above 15° Lat.) VU
Quebec Province VE2	Burma XZ
Ontario Province VE3	New Zealand, North Island ZL1
Manitoba Prov. VE4	New Zealand, North Island ZL2
Saskatchewan Province VE5	New Zealand, South Island ZL3
Alberta Province VE6	New Zealand, South Island ZL4
British Columbia Province VE7	Cape Prov. ZS1, ZS2
Yukon Territ. VES8-L	S.W. Africa ZS3
N.W. Territ. VESM-Z	Orange Free State ZS4
New South Wales VK2	Natal ZS5
Victoria VK3	Transvaal ZS6
Queensland and Papua VK4	
Northern Territory VK5	

APPENDIX II

The following is a list of the British Colonial Call Areas upon which claims for the "Empire DX Certificate," the "British Empire Radio

Transmission Award," and the "Heard the British Empire Certificate" must be based:—

Aden VS9	Kouya VQ4
Andaman Islands VU5	Kuwait VP2
Antigua VP2	Leewards ZK1
Ascension ZD8	Lord Howe ZK1
Bahamas VP7	Malaya VS1
Bahrain VU7	Maldives Islands VS2
Barbados VP6	Malta ZB1
Basutoland VP6	Mauritius VQ8
Bermuda VP9	Montserrat VP2
Bechuanaland VP3	Nauru ZD2
British Guiana VP3	Nigeria ZK2
British Honduras VP1	Niue ZK2
Brit. Somaliland VQ6	Nth. Rhodesia VQ2
Brit. North Borneo & Labuan VS4	Nyasaland ZD8
British Solomons VR4	Palestine ZC6
Brunei & Labuan VS5	Pitcairn VR6
Burma XZ	St. Helena ZD7
Caymans VP5	St. Kitts VP2
Ceylon VS7	St. Lucia VP2
Chagos Island VQ8	St. Vincent VP2
Christmas VP2	Surawak VS4
Cocos Island ZC2	Seychelles VQ9
Cook Islands ZK1	Samoa ZM
Cyprus ZC4	Sierra Leone ZD1
Dominica VP2	Solomons VR4
Falklands VP8	Sth. Rhodesia ZE1
Falklands Dependencies VP8	Sudan ST
Fanning Island VR3	Swaziland VQ3
Fiji VR2	Tanganyika VQ3
Gambia ZD3	Togoland (British Mandate) ZD4
Gibraltar ZB2	Tonga VR5
Gilbert and Ellice Islands VR1	Trinidad and Tobago VP4
Gold Coast ZD4	Turks and Caicos Islands VP5
Grenada VP2	Tristan da Cunha ZD9
Hong Kong VS6	Uganda VQ5
Jamaica VP5	Windwards VP2
	Zanzibar VQ1

MILLION-VOLT GENERATOR

We are informed that the Philips Laboratory at Eindhoven, Holland, has just completed the construction of a million-volt generator for the Oxford University. This high-tension installation is to be used at Oxford in the department of nuclear physics for converting one kind of atom into another. Meanwhile Eindhoven have already started on the construction of another new installation.

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FIFTY AND UP

COMPILED BY VK3QO

We have been requested by G5BY to publish the following:—

Any VK who was sending on 50 Mc. c.w. between 1000 and 1030 GMT on November 16-17 at the low frequency end of the band, would they please submit call sign, time, data sent, and frequency to G5BY or via VK5KL c/o. Dept. Civil Aviation, Darwin, N.T.

G5BY heard a DX signal and quite a bit of call, etc., and things sent, but so as to be authentic would like the stations who were operating to send above details as requested.

Only Interstate DX to report this month, and due to the fact that the "Mag" has to go to press earlier than usual, reports are rather incomplete.

On the afternoon of Saturday, 22nd November, 7XL and 7AB were both keeping a watch every half hour or so, when 7XL heard a signal and, on turning his beam, it appeared to come from VK5; it proved to be VK5QR testing. When he went over, 7XL gave him a call and a QSO, S9 both ends, resulted. After an over each the signals faded out at 1610 hours.

This contact is of interest, as it is believed to be the first VK5-VK7 contact on 50 Mc. Congrats, fellers. On the same day at about 1800 hours, 7AB heard several VK4s QSOing on about 52.5 Mc. 7AB called them without luck. 7XL's XYL was listening during that evening when 5QR "belled" through for about 10 seconds, talking about his contact with VK7XL! Both 7XL and 7AB keep a very close watch on the band whenever possible.

The band opened again on Friday, 5/12/47 from about 2000 hours to 2120 hours from VK3 to VK4. There were not many VK3s on that evening but a number of good contacts were made. Those active were VK3RZ, 3RR, 3HK, 3PG, 3FF, 3KX. The VK4s included 4CU, 4FB, 4ZU, 4RY, 4PG, 4AF and 4HE. It appears that at 2010 4ZU and 4HB were heard QSOing, and the strange voices attracted the notice of the VK3 boys, who promptly turned their beams North and "hopped in for their whack."

Signals were not as good as they have been before, running on an average about S8 with some QSB. It is interesting to note that it is just a year since the band opened to VK4 and VK3HK worked VK4RY again on the anniversary of their first contact!

On Saturday, 6/12/47, DX started early and 3RR, who had been unlucky in not making a contact the previous night, atoned by working them all on his own. Starting at 1745 he had a 20 minute S9 contact with 4FB (who was using a ground plane antenna only eight feet high). At about 1810 he heard VK2SL who did not answer a call. At 1820 4KK was

worked, and then at 1850-1900 4RT, followed by 4CU at 1940. 3KX also worked several VK4s. On the same evening 5QR heard 3RR but did not contact. The band was also open from VK5-VK2 as 2OC, 2MQ, 2NO, 2TA, 2LX and 2FL were heard by VK5s.

The band seems to be improving slowly especially to the westward and sundry weak carriers are building up, so we never know but that VK6s will romp in!

After the sensational reports in the last issue it would be sacrilege to write a great scrawl about VK4 activity and that is about all we have to write about at the moment. As fast as a fresh page was written last month new DX came through and made the dope obsolete. However it was good while it lasted, and no regrets this end. Several of the gentry were caught with unselective receivers and paid rather a terrible price. The most amazing part of the whole show was the way the VK7s came through night after night at good strength. Unfortunately only a couple of VK4s (4HR was one) succeeded in working 7CW, but practically all 50 Mc. addicts in VK4 had contacts with 7XL and 7AB. A letter from 4RF in Dalby tells of reception by 4XN on 50 Mc. of several VK3s, and Fred also mentions that in a QSO with OK1LM in Prague the European mentioned that he was receiving W6s on 56 Mc. Possibly he meant 50 Mc., although he was quite adamant about the frequency given.

VK3 FIELD DAY NOTES

At a previous V.H.F. meeting in Melbourne it was decided to hold an exclusively 166 Mc. field day on 7th December, 1947. However for some unexplained reason, all the boys, save 3ABA took only 50 Mc. gear, with the result that 3ABA, who adhered to the decision of the meeting, had the splendid total of only two contacts on 166 Mc. for the day. 3ABA was located at two miles north of Warrandyte, height 600 feet and he worked VK3ACM and 3EM with S9 signals both ways. Jim and Fred used their usual xtal rig with about half watt output on 166 Mc.

The "unofficial" field day on 50 Mc. was rather willing owing to the presence of 3PK (no free ads!) up on Mt. Buffalo. He was located at "The Horn," and his best contacts were with 3RR at Macrae (145 miles) and 3VL, portable at Mt. Buninyong, near Ballarat. The 3VL-3PK contact was best with 165 miles approximately with S7 signals both ways, but was not line of sight due to higher ranges in between.

3PK worked also 3LS, portable at Mt. Macedon, 3HK at Mitcham, 3HT and other Melbourne stations, 3UI and 3ABG at Tatura and Avenel.

Colin (3PK) is very rarely on the band but he sure put out a swell signal from Buffalo. He used a 1832 tritet into a 6V6 doubler into a 807 doubler final, with plate and screen modulation with 6A6 class B and 6A6 driver and audio with a carbon insert. Receiver was a converter. His power was from twin vibrator power packs.

3LS, at Mt. Macedon, used his usual portable 50 Mc. rig and worked 3RR, 3VL, 3RZ, 3ABG, 3PK and others.

3VL at Mt. Buninyong used an e.c.o. driving a 6V6 as straight final with 6V6 modulator and 5½ watts input; receiver was a super regen. He worked everything that was going and that's fair enough! Rex, 3VL, is on holidays and will be in Gippsland after Christmas. He expects to leave a trail of interest on 50 Mc. behind him!

3RR worked fixed portable at Macrae with usual xtal rig running 60 watts on 50 Mc. and 3 tube converter into a b.c.l. set.

3ABG, portable located 10 miles east of Avenel, was also a very interesting contact. His rig consists of a 1K5 c.o. on 6373 Kc., 1K5 doubler, 6SN7 two doublers, 807 straight driver and an 807 linear p.a. 1K6-6V6 mod. This unusual set up has the advantage that it only takes 30 Ma. at 70 volts in the exciter for 2 Ma. grid drive to final. Vibrator power supply is used. P.A. final uses Type 3 Mark II pack giving input of 10 watts. 3ABG got at least S8 from everyone he worked (and was he kept busy) and his phones, hanging on the steering wheel, were well and truly chattering.

3UI, at his home location, uses 40 watts to p.p. 807s and worked 3RR at Macrae, but it was not 100%, the signals were very weak. It is understood he worked 3HZ at Warrigal. He also worked 3ABG, 3LS, 3VL and 3PK. 3UI, at Tatura, is not in a very good location but it seems likely that consistent contact will be established soon between Tatura and Melbourne.

Taken on the whole a thumping good day was had by everyone and a lot of most interesting contacts were made. The strange thing is that 3XA on Mt. Mackay, only 20 miles away from Buffalo, and using about 60 watts, failed a fortnight ago to get through to Melbourne and only worked 3HZ at Warrigal. Don had the advantage of extra height (I think) also.

50 Mc. GENERAL NOTES

3RR continues to wear a big hole in the band and is the most consistent on the band. He calls at 12 noon, 3 p.m. and has a nightly sked with 3GM at Ballarat. He has a good receiver and keeps a close watch on the band.

3BQ is another of the regulars, but is feeling a bit sore because he bought a nice new mike and though

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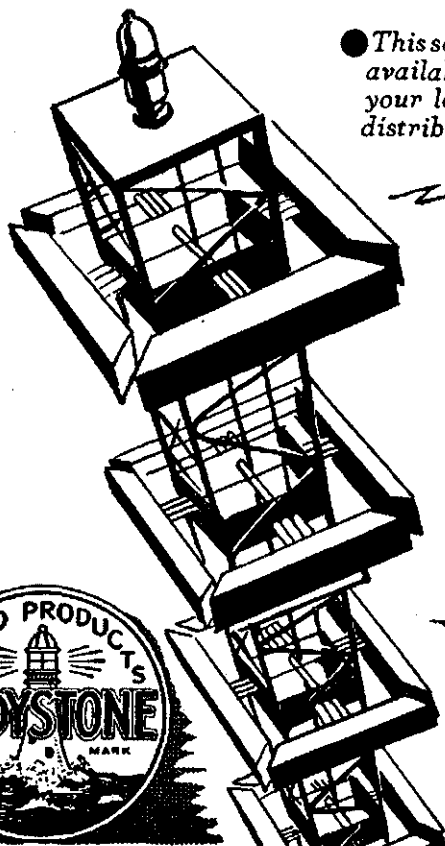


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he has had it several weeks, no one has noticed any difference! His beam is still up, though a butcherbird was seen sitting on it in a contemplative sort of way!

3VL, at Red Hill, also does his share in keeping the band open. His XYL, Gwen, has got her ticket now—VK3US. Whacko, two Hams in the family now! Rex collected a scalded foot just before his holiday so he must have done his journeying under some disadvantage.

3ZL has his rig going on 50 Mc. again from Ballarat and it will be

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interesting to see how his signals compare with his old rig. Some of the Melbourne boys get 3GM best, and some get 3ZL best. In fact 3HK can hardly copy 3GM usually.

Keith, 3HK, listens a good deal and puts in much hard work on his receiver which he now has covering from 3.5 Mc. to 56 Mc; he has just finished calibrating it. His 50 Mc. converter now uses 6AK5 r.f., 955 as triode mixer and 6V6 oscillator.

3YS is on occasionally, also 3GG and 3CP. 3RZ and 3FF are two very good new signals and 3YJ is back on the air again with very nice quality and strength.

166 Mc. JOTTINGS

3ACM kindly provides a good service on 166 Mc. by relaying 3WI's Sunday morning bulletin. He has just moved into a brand new shack while around Xmas time a few recruits were wanted to hoist the new toothpick.

3MB was on with his portable rig working 3ACM and 3MN.

3QE, 3ZT and 3EO should be on this band by now and possibly 3BW. 3EM is on three or four times a week while 3AKI is busy rebuilding on 28 Mc. 3FB is another just starting in by wrapping his dipoles up on a 80 foot neon sign.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Many expressions of surprise and regret have been received from overseas stations over the non-inclusion of ZL in the recent international contest staged by the W.I.A. There probably are good reasons for the absence of ZL from the contest, but DX stations seem to expect the contest to be VK-ZL and are disappointed to find such is not the case. Might be worth reconsidering when next year's contest is being framed.

Stamp collectors please note that F8BS, P. Bonichon, 134 Boulevard, Victor-Emmanuel 111, Bordeaux, is desirous of exchanging stamps with an Australian contact.

Recently had the pleasure of viewing the QSL card of W7ACS/KH6 confirming the then record breaking contact on 50 Mc. with VK5KL in Darwin—despite the fact that three-quarters of a million cards have passed through my hands in the last fifteen years, I got quite a kick out of seeing this one.

Frank Hine, VK2QL, keeps the PK6HA ball rolling by stating on 18th November that despite sending two cards to Lt. Hagers none has come back. Guess Lt. Hagers will give you special attention Frank. VK2QL also states he did the right thing by XU1YR (see paragraph in November issue) and hopes his card is one of the four received by XU1YR.

Cards still continue to come in for VK1 stations wherever they are. Would like some information if any

FEDERAL NOTES

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

VK2AJB—G. C. Curle
 VK3DQ—J. D. Morris A.M.F.
 VK3HN—J. McCandlish A.M.F.
 VK3IE—J. E. Mann R.A.N.
 VK3NG—N. E. Gunter M.N.
 VK3OR—M. D. Orr R.A.A.F.
 VK3OW—G. L. Templeton R.A.A.F.
 VK3PL—J. L. Colthrup R.A.A.F.
 VK3PV—R. P. Veall A.M.F.
 VK3SF—S. W. Jones A.M.F.
 VK3UW—J. A. Burrage R.A.A.F.
 VK3VE—J. E. Snaddon R.A.A.F.
 VK7LP—L. P. Hyland A.R.P.

The above names and details are the only ones yet received by Federal Executive, of Hams who lost their lives due to War Service. Anyone knowing of further names that may be added to our Honour Roll, please communicate with Federal Executive at the earliest. Any corrections to the above list would also be appreciated.

LIST OF CALL SIGNS

Alterations

VK3AJB—J. Batchler, Transmitting Centre, Diggers Rest, Vic.
 VK3ML—R. H. Cunningham, Bruarong Road, Frankston.
 VK3PD—G. D. Clarke, 83 Queen's Road, Melbourne, S.C.3.
 VK6FW—F. W. Beadle, 34 Woodroyd St., Mt. Lawley, W.A.
 VK6QF—Q. F. Foster, R.A.A.F. Station, Pearce.

New Issues

VK2ACM—M. Cowan, 68 Ocean St., Woollahra, Sydney, N.S.W.
 VK2APW—A. F. W. Taylor, 262 Gardiners Rd., Kingsford.
 VK2AJE—B. L. Mills, Newington College, Stanmore.
 VK2ARR—G. du M. Conolly, 24 Moore Street, Roseville.
 VK2VB—R. E. Wood, 17 Downing St., Epping.
 VK3AW—A. W. Oakes, 1 Palmer St., Oakleigh.
 VK3AWW—W. A. Wells, 23 Waterloo Street, Camberwell.
 VK3EE—C. E. Fredrickson, 44 Westley Street, Carrum.
 VK3PT—V. S. Thomas, 315 Malvern Road, South Yarra.
 VK3TC—J. M. Renshaw, 66 Donne St., West Coburg.
 VK3VA—W. B. Bridges, 4 Lexton St., Ballarat.
 VK3VC—R. K. Wicks, 25 Berry Ave., Edithvale.
 VK3WM—J. K. Cosgriff, 9 Donald Rd., Burwood.
 VK7LT—L. E. Templeman, 3 West Tamar Rd., Trevallyn, Launceston.

available. Can any VK2 stations help out?

Recent advices show that VK3IU and VK3QH are having a great time in the U.S.A. and have enjoyed meeting numbers of the Ws.

The old, old reminder again. Please don't forget to send that stamped addressed envelope to your State QSL Manager. It helps him more than it helps you. Also let him have your change of address promptly as supplements to the call sign list will only appear quarterly.

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DIVISIONAL NOTES

NEW SOUTH WALES

Secretary: Peter H. Adams, VK2JX
Box 1734 G.P.O., Sydney.

Meeting Place: Science House, Gloucester and Essex Streets.

Meeting Night: Fourth Friday of each month.

NEWCASTLE DISTRICT

A visitor to 2FP was 2TY who passed on news of the Maitland gang; result, 2FP will make 166 Mc. 2TY, 2ADX, 2AKP and 2JZ (making a comeback) are all on 166 Mc, S9 all ways. 2DG must be congratulated on his 14 Mc. DX contest effort and should be near the top, congrats Keith. 2OS, of Thornton, is doing good work on 7 Mc. phone. 2VO, an old-timer who is going to stage a comeback, has some fine home-made gear and will make a lot of noise when big switch is closed. 2BZ is holidaying at Nelson's Bay and should have some good fish stories for 50 Mc.

2AHA mainly on 50 Mc. with a nice signal. 2AFS is missed from the air, has been in hospital; early comeback expected. 2ANG now has his beam really working on 14 Mc. 2PQ has just fixed up wogs in the modulator and is now f.b. 2TE, nil heard lately. 2WU what's doing Lou? 2AGD sticks to 28 Mc. and is building a fine Rx. 2CI has a converter

on 50 Mc. and is busy with Tx. 2CS has Rx and v.f.o. finished, won't be long now. 2FP is going to put a new rig on 28 and 166 Mc. and would like some notes from Maitland monthly. Season's greetings to all from 2FP.

COALFIELDS AND LAKES ZONE

2KZ's motto is "W.A.S. or bust," that's on 28 Mc., ask Max about his S meter; expects a visit from W6ZOX in January. 2YO is heard on 7 Mc. and has definite ideas on over-modulation. 2KF mostly on 14 Mc. and will shortly make 28 Mc. A nice pole is erected, maybe a beam is under way. 2TY seems to work 28 Mc. regularly and makes 166 Mc. at times. 2XT spends most of his time on 7 Mc. phone; what about that combined 7, 14 and 28 Mc. beam? 2MK not active, has gear dismantled. 2PZ is another 7 Mc. fan talking of rebuilding some of the disposals gear on hand.

2ADT devoting much time to 50 Mc. and has VK3, 5 and 7 contacts plus many VK2s as a reward; uses a 3 element beam either vertical or horizontal. He was in Sydney for the last V.H.F. meeting. 2YL putting in most of his time on 50 Mc. with nothing startling to report. 2OC has some really fine gear going, the shack is really a Ham's paradise. Has a three element rotary on 50 Mc. 2RU has also some fine gear and devotes most of his time to 50 Mc. Little news of Lakes chaps, 2KR mainly on 7 Mc., 2AEZ and 2AIO on 14 Mc. Merry Xmas and plenty of DX in 1948—73 2YL.

WESTERN ZONE

2NS has been heard working portable from Sydney. 2JC on 7 Mc. with a 816 plate modulated (how do you plate modulate a mercury vapor rectifier—Ed.) and AR8. 2BT is on 7, 14 and 28 Mc. with a separate Rx and Tx for each band. Uses a 4 element on 28 Mc. and a 2 element vertical on 14 Mc. 2ALX has his AT20 on 28 Mc. now. 2AWR intends rebuilding using p.p. 807 audio and r.f. 2TH using AT5/AR8 combination with batteries. He has a separate rig on 28 Mc. 2AMR still rebuilding his shack, should be some shack!! 2II uses a selsyn indicator on rotary and has car number plates same as his call sign. 2ACT still on 7 Mc., power comes from engine-driven alternator. 2WH still likes gaseous discharge valves.

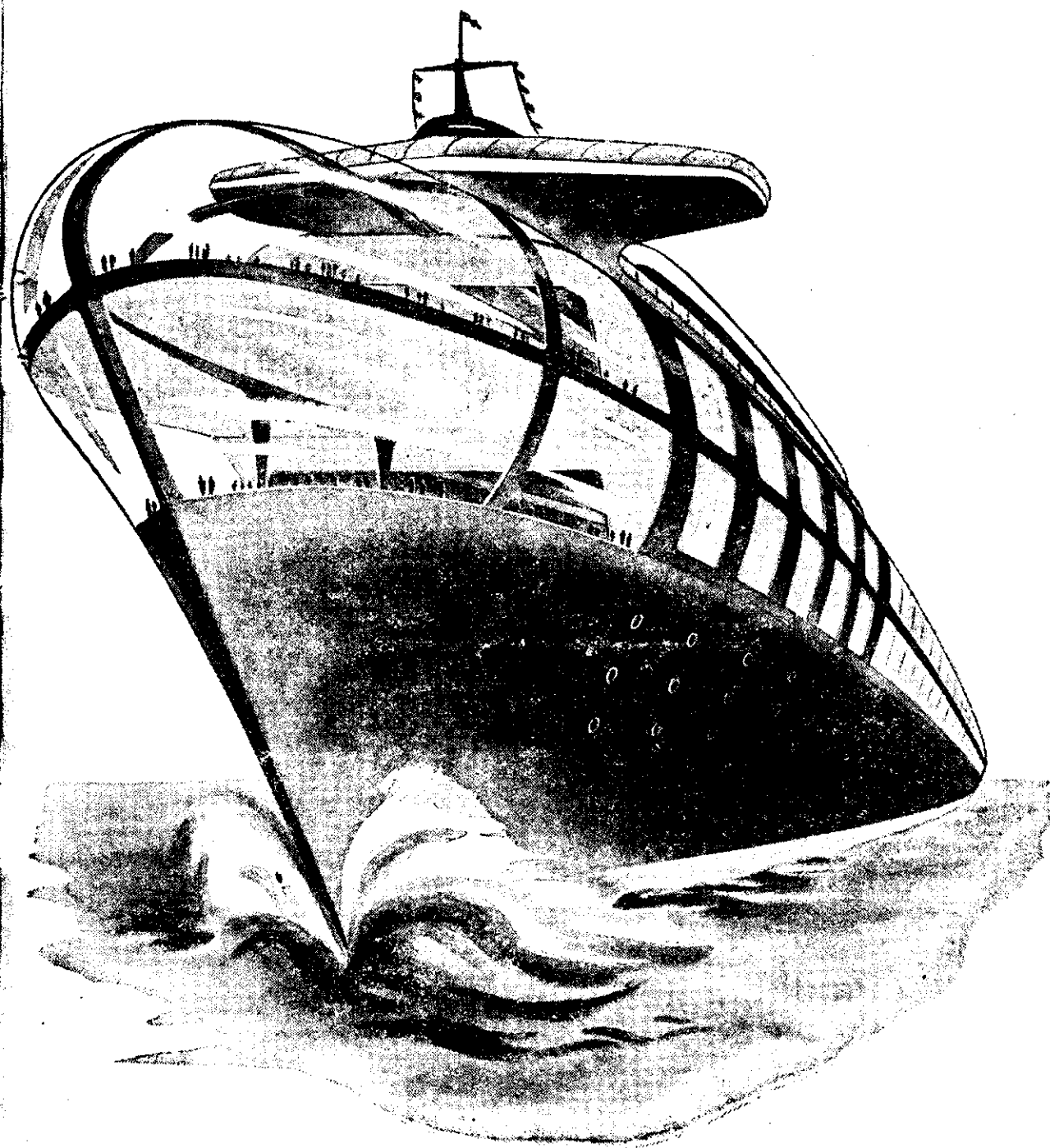
2PN has established a 50 Mc. channel with 2TA. 2QA rebuilding receiver and dreaming antennae. 2AFV using commercial Tx (motor tuned), powered from engine and alternator. 2ACP on 7 and 14 Mc. c.w., surely can pound the key. 2LY still rebuilding, is on 7 Mc. with new mike and speech line up. 2AFO does some good work in getting out from a shielded QTH on 50 and 166 Mc. 2ALR uses a 2 element rotary on 14 Mc. when XYL allows respite from gardening. 2LZ on 50 and 166 Mc., complains of power leak. 2HZ's receiver will be ready for Xmas; which one? Season's greetings from 2QA.

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SOUTH COAST AND TABLELANDS ZONE

Big news is that 2TA, in Young, has worked 2JU, in Sydney, on 50 Mc. and 2PN, in Tumut, has heard 2JU. These distances are 170 and 200 miles respectively. Contacts such as these greatly encourage 50 Mc. work in the country and already several Amateurs in this Zone are building for 50 Mc.

2ALS is building small Tx to replace the l.f. portion of his AR8. 2DO worked ZM6AI on 7 Mc. phone, has quite a list of DX on this band. 2GU also heard 2JU on 50 Mc. and is building for that band. 2AKE is get-

ting busy with fire emergency gear. It is reported there are 13 new Hams in Canberra, thanks to a class conducted by VK2ALD. If you have any news whatever about Zone activity please send it to 2ANN, Box 73, Bega.

SOUTHERN ZONE

Wanted at Albury monthly is news of the Wagga gang, forward to 2OJ early each month please. 2OJ is holidaying at Cronulla and is due back shortly. 2ANQ returned from Western Victoria where he met 3TA, 3NY, 3KR and ex-3RG; is now the proud possessor of a 10 tube super. 2VK is a man of leisure since 2ANQ returned; dancing has taken over from radio. 2AIS was last sighted headed towards Yarra seeking disposal bargains. 2EU is progressing with building new QTH. Ham Radio is out and definitely doesn't like "Gremlin." 2APW a busy man since becoming proud father of Bronwyn Margaret, rather modest about it. 2AIZ will be holidaying at Bathurst soon—73 2APW.

VICTORIA

Secretary: A. B. D. Evans, VK3VQ,
Box 2611 W.G.P.O., Melbourne.

Telephone: FJ 6997

Meeting Night: First Wednesday of each month.

Meeting Place: Radio School, Melbourne Technical College.

The Victorian Division State Convention will be held on Saturday, 7th and Sunday, 8th February.

Full details of the Convention have not yet been worked out but will be forwarded to Zone Secretaries as soon as possible and broadcast over 3WI. All members have suggestions for improvement in the general organisation of the Division and the facilities it offers are invited to submit them to Zone Secretaries in the case of country members, and for metropolitan members to the Honorary Secretary of the Division by letter no later than 21st January, 1948.

Intensive discussions have taken place to review the official organ "Amateur Radio" and from these talks it is intended to give to Amateurs and Radio Enthusiasts alike, that which they seek in the magazine.

In the February issue it is hoped to present the first of the many proposed changes to take place in the layout and text matter with future issues to be still brighter and better.

Whilst the annual dinner of the Division, at which Mr. L. Pearson and Mr. F. Punch of the Wireless Branch of the P.M.G.'s. Department were guests, was an unqualified success from a fraternity point of view, our President (Mr. R. Cunningham) pointed out at the last general meeting the desirability of more complete co-operation and willingness on the part of all to participate in not only at these functions, but also in other directions to assist in the workings of their divisional interests.

It is with sorrow that we learn of

the ill-health of our Treasurer, Mr. Jim Marsland. His enforced absence from work for some months, we feel sure, will restore him to good health once more, and a letter expressing our sentiments and good wishes has been forwarded to Jim from this Divisional H.Q. It will be difficult indeed to fill the position of Treasurer, temporarily, that has been so efficiently and capably handled by him. "We all wish you 73 and speedy recovery Jim."

A major note of interest is that permission has been granted the use of a tower for the erection of a new antennae system for VK3WI. With this new installation a full coverage of transmission is expected to bring news of divisional interest widely throughout the country.

"FOOD FOR BRITAIN" APPEAL

We have at last reached the 200 mark in parcels despatched to the R.S.G.B. after nine months of operation which is most gratifying to the Committee, and is much appreciated by the recipients in Great Britain.

Our total receipts to the Fund have also passed the £200 mark. The total stands at £216/19/5 received, total expenditure on food parcels is £179/1/10, and the cash in bank at £37/17/7. We wish to express our appreciation to all who have helped in any way in the Appeal, and trust that the New Year will see the same unanimous spirit of co-operation that pertained in the old.

At the December meeting of the Division, a Class C Wavemeter was raffled and was won by VK3ZC (this is getting to be a habit with John), the draw being made by a visitor, VK7KA. The raffle yielded the sum of £7/10/9, not up to the usual total (no doubt due to the amount of Disposals gear in the offering) and the box collection resulted in a further sum of £7/12/-.

We acknowledge with thanks a donation of £4/13/- from the Central Western Zone, being money left in hand from the old Western Zone before its sub-division into three Zones. We extend our thanks to all concerned. The Zone Organisers are still waiting to receive your donations, so keep them posted. We hope to have details of further raffles, etc., for the next issue of "A.R."

CENTRAL WESTERN ZONE

These notes are going to be thin this time as the writer has not been very active and time is so much shorter, however we have all recovered from the Maryborough convention.

3TA has a new twin beam, 3 element 14 and 28 Mc. perched on top of a 40' telephone pole. Byron is going very nicely and now has about 50 countries up by using a v.f.o. No doubt about it, beam plus v.f.o. equals DX. Byron at present has regular skeds with two or three Gs, for the present he has laid aside the 50 Mc. beam as his time is limited, and he does like to work a few. He is also

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CANTERBURY, E.7.

building a separate p.a. for each band in the near future.

3WC is still listening on 50 Mc. using a beam; heard much yet Claude? 3AGB is now plate modulating his Type 3 Mark II and putting out an f.b. signal on 3.5 and 7 Mc. Pete thinks 3.5 Mc. is by far the best band for a good rag-chew and no doubt many will agree with him. He is putting together a new receiver and a 50 Mc. converter to go ahead of it. This, with the necessary doublers, etc., after the Type 3 will put War-racknabeal on the 50 Mc. map. He will run this outfit as a home rig (not portable) and should hear some signals as hills just don't exist up that way.

3XG, a new-comer to the Zone, is at present busy on 14 Mc. but hopes to be on 7 Mc. phone soon. Be pleased to hear you in the hook-up Ben.

3GN well where have you been George. Heard a ZL calling you on 3.5 Mc. one Saturday night but no you, maybe he was calling a pirate. Ye scribe of these notes got sick of 7 Mc. and scrambled off down to 28 Mc. the other night and was pleasantly surprised after about 12 months absence to find the band still there and doing business very nicely. Even found the new 21 Mc. band on the way there, but that is by the way. After ambling around 28 Mc. for a while, went back to 14 Mc. c.w. and had a nice quiet time working Cs and KHs.

3AKW was worked the other night

on 3.5 Mc. A nice signal Bill and Carmel can sure modulate the Tx very nicely. 3AX is having a spot of bother, but no doubt is clear of it by now.

Cheerio gang till next time and may we all make the DX C.C. next year.

QUEENSLAND

Secretary: R. Thorley, VK4RT, Box 638J, G.P.O., Brisbane.

Meeting Place: State Service Building, Elizabeth Street, City.

Meeting Night: Last Friday in each month.

Preparations are well in hand for the election of a new Council, etc., for 1948 and country members are reminded that nominations for Office-Bearers must be to hand by the last Friday in January. Ballot papers will be forwarded to members and these must be returned by the last Friday in February, when the election of Office-Bearers will be held, so if you want your member to get in, please return the papers back promptly.

We are advised that numerous certificates are in the course of preparation in the south, including membership certificates, W.A.S. Certificates for 50 Mc. and above, DX Contest Certificates and Trans-Tasman Certificates. We know of quite a few VK4s with greedy eyes on that W.A.S. for 50. At long last the Institute log books are to hand and if you want one it might pay to hurry up the application for same—price is ap-

proximately 6/6. They are 11" by 9" loose leaf style and should be quite good for the job.

An associate member, who prefers to remain anonymous, has presented an Admiralty Handbook (Vol. 1 and 2) to the Institute's Technical Library. Our thanks OM, and in passing we would like to thank Charlie Walker (4CU) for his recent gift of magazines to the Library. A welcome is extended to several new members: 4DB, 4LD, 4WO, 4DC and associate members C. Rosser, A. Addis, A. Warren, R. Wilson and M. Dwyer. Glad to have you with us OMs.

The Disposals news this month is that we have at long last taken delivery of the SCR522s, new and used varieties. The Class C Wavemeter position which seemed so secure is a little uncertain at the moment, but promising at least. It has been the finding of the Disposals Committee that unless the gear is actually taken delivery of, it is liable to be snatched away at the last moment. A very high degree of patience is called for when dealing with these people. They are a "darned sight" worse than Hams.

An illustrated description of 4WI will be published in this magazine in the near future. The operator, 4FN, reports that the frequency measuring service is immensely popular with interstate Hams. The frequencies of 4WI were wrongly reported in the November issue of "A.R." and the good gen is 7100, 14342 and 52004 Kc.

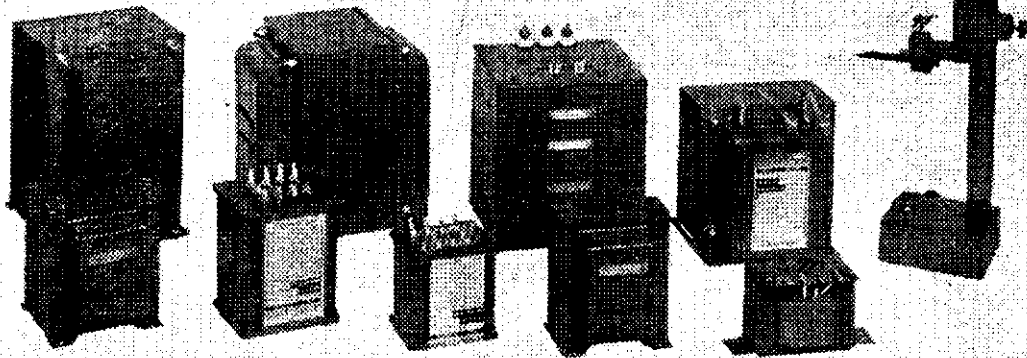
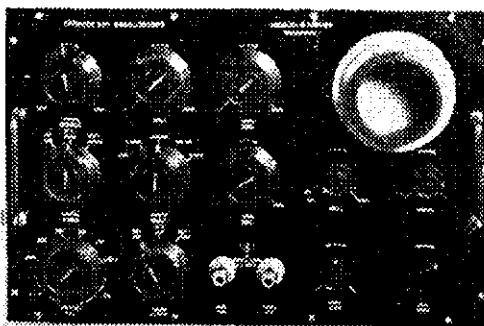
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SOUTH AUSTRALIA

Secretary: E. A. Barbier, VK5MD,
Box 1234 K, G.P.O., Adelaide.
Meeting Place: 17 Waymouth Street,
Adelaide.
Meeting Night: Second Tuesday of
each month.

Included in the same envelope as my three figure fee last month was a short note from the Editor to the effect that all copy for this issue should be in hand a least a fortnight ahead. This was something of a blow because my spies, investigating officers, and "yes" men were not due back for at least three weeks. Coupled with this was the fact that I had been counting on the general meeting and also the annual Xmas dinner for some copy, but these two events were not due until after copy would be in the printer's hands. Therefore all this "splurge" is but a lead up to an apology for the somewhat short notes in this issue.

When the enormous enthusiasm over nominating the new year's Council members had subsided, it was found that the same old reliables

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI, Sundays—

1100 hours E.S.T., 7190 Kc.
2000 hours E.S.T., 50.4 Mc.
No spot frequency checks will be available from VK2WI.

VK3WI, Sundays—

1130 hours E.S.T., 7196 Kc.
Spot frequencies every fourth Tuesday on 7 Mc. between 7000 and 7200 Kc., every 10 Kc. Individual frequency checks of Amateur Stations given when 3WI is on the air.

VK4WI, Sundays—

0900 hours E.S.T., 7100 Kc.
0900 hrs. E.S.T., 14358 Kc.
0900 hours E.S.T., 52.4 Mc.
Frequency checks are given two nights weekly. Hours are announced during the Sunday broadcasts.

VK6WI, Sundays—

Station used is VK6WH (for official news).
0930 hrs. W.A.S.T., 7168 Kc.
No frequency checks are available.

VK5WI, Sundays—

1000 hrs. S.A.S.T., 7195 Kc.
Spot frequency checks may be obtained from VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK7WI, 2nd and 4th Sundays—

1030 hours E.S.T., 7174 Kc.
No frequency checks are available from VK7WI.

had been voted in again with the exception of Ross Harris (5FL) who had previously signified his intention of not standing for office due to the expected complexities of house building. Joe Kilgariff (5JT) was another Council member who was a non-starter and we extend to both these gentlemen our appreciation of their worthy efforts. One of these days some member is going to make a mistake and nominate somebody new as a Council member with severe shock to the nervous system of all the regular Council members who, year after year, shoulder the executive work of the W.I.A., S.A. Division. Of course it could be that the Council is doing such good work that the members do not want any change!

Council members are Hon. Secretary, "Doc" Barbier (5MD); Hon. Treasurer, Cec. Baseby (5BZ); President, Hal Austin (5AW); Custodian of Test Instruments, Frank Wreford (5DW); Members' Organiser, Joe McAllister; Disposals Officer, George Ramsay (5GD); Programme Officer, Gordon Bowen (5XU); and Publicity, "Pansy" Parsons (5PS).

Mr. Ross Harris (5FL) is handling the disposals material of which brief mention was made at the November meeting. No information as yet to hand but record applications are reported for gear ranging from crystal blanks to caterpillar tractors.

A suggestion to these high speed expert c.w. blokes who are creeping into all bands. High speed does not necessarily mean good sending and don't forget that quite a few Hams are in this grand old hobby for relaxation. Quite a few of them are using a key all day at their vocation and probably sending and receiving at intelligent speeds far above your capabilities. To the few speed merchants who have forgotten to remove their boots, might I point out that a better grip can be secured with the boots off. The secret is all in the big toe.

Several members in VK5 will not be receiving this copy of the magazine because annual subscriptions and the magazine go together. Of course they will "wing" and "howl" but you cant shut your eyes to the fact that "no subs," "no magazines."

Gordon Bowen (5XU), who is a cane wielder at Woodville High School, is also responsible for the amateur licence granted to that school. If you hear 5WH on the air at anytime give them a shout.

Joe McAllister is organising a sports day for members and their families to be held on 25th January, 1948, which will coincide with the National Field Day. Joe was one of the Committee who did such a good job with the last outing, so a good time is assured for all. A strict watch will be kept on Cec. Baseby (5BZ) to see that he does not roll up his pants to the knees as he did last year near the ice-cream stall for the kiddies!

You all thought I was joking when I told you that Jack Lester (5LR) was going around at night with an axe looking for any masts higher than 20 feet in his neighborhood. Well Alan Gooley (5AO) does not think it a joke as his 40 feet mast crashed a couple of days after publication of these notes. Look out Brian (5FQ).

Just by the way of starting a controversy, commercial stations 5DN and 5RM (Renmark) are fully manned on the technical staff by amateurs, ten in all, including the chief engineer. Can anybody beat that.

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Having reached the depressing age when the sweet young things at the office call me "Sir," when my Boer War wound aches in damp weather, and when I recognise the enthusiastic ideas of the young associate member as something I tried out years ago, you can imagine my pleasure at the last general meeting when two very obvious young associate members seemed quite anxious to engage me in conversation. Aha! I thought, somebody has pointed me out as the ace correspondent for "Amateur Radio" and possibly they want my advice. With the whole 26 chapters of the A.R.R.L. Handbook flashing through my mind, I smiled and said "Could I help you." "Well," they said, "we were having an argument which only you can settle." "Certainly," I said, "go right ahead." Taking a step forward one of these charming associate members gently prodded me in the "bread basket." "I win," he said, turning toward his friend, "there's no pillow there," and with that, these two disgusting examples of modern associate membership walked off still arguing volubly. Can I help it if I have a fallen chest?

At the last Council meeting a vote of appreciation was recorded in the minutes for the splendid work that Reg Harris (5RR) is doing at the official W.I.A. South Australian Division Station (5WI). Only those connected with this Station realise the amount of work involved and a special pat on the back should go to Joe McAllister for the amount of work he puts in behind the scenes.

"Wick" Bayly (5WM) is having trouble in getting a hat to fit him since he contacted a D4 on c.w. with a 5-8-9 report. Good work "Bendix."

With the advent of the new year most Amateurs have made and broken a few new resolutions. Might the suggestion be offered that "Hi, Hi" on phone be cut out, "we" do this and "we" do that could be forgotten, and when the beginner gives you QRS don't lose him in the "QRM."

VK5 Amateurs wish all VK Amateurs "A Happy New Year" and loads of DX, and don't forget if you pass through Adelaide at any time we will make you more than welcome.

WESTERN AUSTRALIA

Hon. Secretary: W. E. Coxon,
VK6AG, Howard St., Perth, W.A.
Meeting Place: Builders' Exchange,
St. George's Terrace, Perth.
Meeting Night: Second Monday in
each month.

As "A.R." went to press early, notes for the December meeting will not appear until the February issue.

The Annual Dinner, held on the 5th of the month, proved to be an outstanding success, and we feel sure that everyone left feeling well-fed, and at peace with the world. The Committee wishes to thank all those



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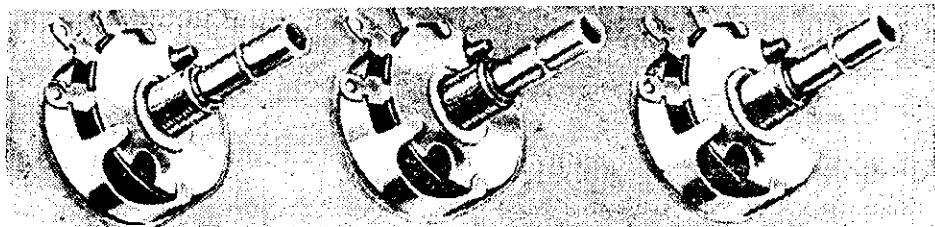
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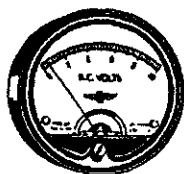
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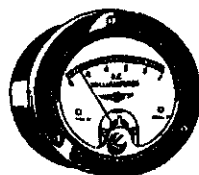
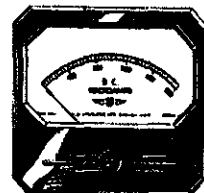
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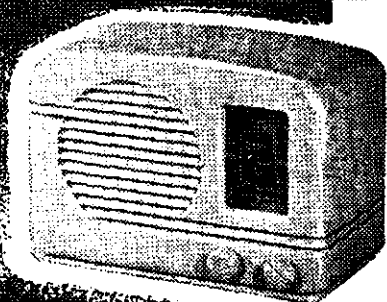
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H1.FP.

who attended, especially the Country Hams, for helping to make the evening enjoyable.

The office of Surplus Gear and Exchange has now been considered to be unnecessary, so from now on this activity will cease to exist. All those wishing to purchase second-hand gear, or having some for sale, are advised to give full details to the Secretary, who will insert the advertisement in the monthly Bulletin, at a small cost.

PERSONALITIES

6RU has gone v.f.o., using a Bendix type Transmitter as a source of signal. 6MB has now a new 28 Mc. beam, which seems to be working out very well. Been heard lately working some f.b. European DX. 6MY often heard working 7 Mc., among the rag-chewers. What about a bit of DX Mal? 6FW has now found a new use for a bedstead. Yes, believe it or not, Fred is using his bed for antenna, and it doesn't work too badly either for the local contacts. Marriage has caused a cramping of the quarters somewhat—eh, old man? 6WT has been very busy erecting new antennae. Dave reckons to give the DX boys a run for their money, shortly. 6KW has now re-built his entire beam, and has also gone v.f.o., using the same type of signal source as 6RU.

Since shifting to his new QTH, 6TW has been very quiet. However we believe he is going ahead with a new antenna system, and should be heard shortly. 6IG makes a surprise visit to 7 Mc. occasionally, and works a few of the locals. 6JS has now two new long-wire antennae, and is on the air properly at last. Heard working regular skeds with 3KU and 3DH. 6WH still a regular on 7 Mc. and still doing the W.I.A. broadcast on Sunday mornings.

6AG has quite a fine turn-out in his "hills QTH." Some of the local boys, especially Subiaco-ites, envy Wally's freedom from local QRM. 6HL is still experimenting with 28 Mc. beams. His latest we believe is a 4 element job having a second reflector 0.15 above the driven element. 6SA, the State's c.w. hound, regularly works 14 Mc., and works some fine DX without a beam. 6FL, another c.w. expert, although heard on 28 and 14 Mc. phone quite regularly.

6JW is a newcomer to VK6 with quite a f.b. 14 Mc. phone signal. 6LM is a 7 Mc. band warmer—always there for a rag-chew at week-ends. 6YZ can always be worked on 7 Mc. 6CM has a new Junior Operator, so has a new pastime as nurse-maid once again. 6BC spending quite a lot of time lately with his new Bendix receiver, which we believe he is now using quite nicely on 14 Mc.

DX OF MONTH BY VK6RU

For the last two weeks now, conditions on both 28 and 14 Mc. have been anything but desirable except for an occasional day or so when a few continents put in an appearance.

28 Mc. Phone.—This band showed good promise early in the month, when day after day DX was coming through from all directions. But by about the 15th of the month, the band became very spasmodic and the anticipation of a bumper month of DX fell through.

Europe.—Gs once again have been in the majority, and from the Continent F8YW, 8EO, 8TU, 8XT, 9WT, 3GL, 9BE from France; I1PB, 1LW, Italy; LX1JW, Luxembourg; D4AWJ, 4AVI, Germany; GM3XB, 6MS, Scotland; SV1RX, Greece; HB9FU, Switzerland, have all been good QSOs. A couple of rare ones in LZ1AB, Bulgaria, and EA1MO, Spain, were heard but sad to relate not worked—nevertheless they'll be heard again.

Africa.—From the Union, in the south, a few of the boys were worked but not with the signal strength only too well known during the past winter months. ZS2CI, 1DJ, 5BZ, 6CM were the only QSOs resulting. From East Africa VQ4ASC, Kenya Colony, was a nice catch—6RU being his first VK on 28 Mc. phone, and from the North, ST2JF Khartoum, MD5AF Suez Canal Zone in Egypt provided the remaining African contacts.

Oceania.—The ZLs have been in the minority this last month—ZL1HY being the only one worked and as far as the rest of the Pacific area is concerned, only the usual signals from KG6 and KH6 put in an appearance.

Asia.—Quite a few new calls are appearing from this area, V5s in particular and not forgetting the VUs. While on the subject of VUs it is believed that Pakistan is about to be classified as a new country in the eyes of the DX Century Club and this independent state almost bristles with Hams from the number worked recently (information from VU2KP). HZ1AB, Sandi Arabia, has re-opened again; as the chief op. there puts it "an entirely new crew has taken over" and what's more they like working VKs. They also have a different type of QSL so he's worth working. MD6AR, Iraq, was a nice contact—it may be remembered that YI was their previous prefix.

North America.—The Ws have been fairly regular during week-ends from about 0630 onward, and many QSOs have resulted S9 plus both ways from W1 to W0 (North Eastern States). VEs from Canada have also been numerous, those worked being 7KH, 3LB, 7UW, 7EB, 7ZM. One or two VE8s from the Yukon were heard but not worked. KL7LO, Alaska, was the only other North American worked.

Central America.—VP9F, Bermuda, worked across Canada was a surprise one on a Saturday morning about 0750, when the QSO was held for 50 minutes. According to great circle observations, Bermuda is the same distance from Perth irrespective of what direction is taken and this

country is always an interesting contact as the signal path can vary. VP9F has been worked in the early evening on 14 Mc. to the South East, in the early morning on 14 Mc. to the North West across Europe, and now on 28 Mc. to the North East across Canada. It only remains now to work him on 28 Mc. in the late evening across Europe.

14 Mc. Phone.—Very little this last month has been done on this band, as conditions generally have been so poor, but what has been worked has been the "pick."

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this coming month in the late evenings according to last December's log and the only contacts made last month were GI6TK, Northern Ireland; OZ5HQ, Denmark; SV1WE, Greece; and OK1KX, Czechoslovakia, who was worked early one morning, and G8IG and G2MZ were the only two from the old country.

North America.—Few Ws have put in an appearance in the evenings but the early morning activity across South Africa is showing promise and within the next few weeks the "before breakfast" QSOs with this country should be getting regular. VE1BV was the only Canadian worked at 0610 one morning across Europe.

Central America.—Two nice QSOs were TI2MA, Costa Rica, and VS1JR in San Salvador.

South America.—Our friend Victor—HK1FQ—has been still the most consistent, and another catch was YV5AY, Venezuela.

Oceania.—The only two from this Pacific area were VR3A, Washington Island (adjacent to Fanning Island), and KP6AA, Palmyra Island.

One item of interest to VK6s is that VK3AMG has changed his QTH to Heard Island (Antarctic Expedition) and should, according to press reports, be down there early in the New Year, so who is going to be the first VK6 to work Antarctica—thought there were only six possible continents but maybe there will be seven with the gang going to Heard Island.

TASMANIA

Secretary: J. Brown, VK7BJ
12 Thirza Street, New Town.
Phone W 1328.

Meeting Place: Photographic Society's Rooms, 163 Liverpool Street, Hobart.

Meeting Night: First Wednesday of each month.

Owing to this issue's early deadline, there is not much to report apart from the catas—er—field day which took place on 23rd November.

Expecting the worst, after 7KA had been given the job of planting the transmitter, most of us took care to add "sense" to the loops this time. In one or two cases, it seemed to make them feel a bit happier about going in the wrong direction.

The grassy slopes of Queen's Domain as usual attracted everyone for the first bearing. Some worried minutes went by before the Type 3 Mark II, with its call sign and dash disc, was heard to start up and then began the big dispersal.

To deal with the brighter side first, 7CW couldn't have done much better had he been told where it was. Up to Risdon, over on the ferry, along the Richmond road and then about a mile up a gully behind Mount Direction went Crosby, to be confronted with KA's van and lots of thick bush. He was joined shortly by LJ and TR working together. Be-

tween them they quartered the underbrush for an hour, passing sometimes within a few yards of Syd, who was vainly trying to get some buzz out of an electric fence—nice chap. CW eventually ran into the aerial and came in first, his time and distance making up 185 points. LJ and TR followed a quarter of an hour later with 294 points, having covered a few more miles before crossing the river. Then followed a long, hungry wait before Barney Watson appeared a little after 1 p.m.

Meanwhile, even other cars were doing it the hard way, up around Bridgewater and in on back roads. BJ found one he "wouldn't have taken a jeep over in cold blood," cleaned some surplus metal off the bottom of the Vauxhall, called it a day and came in per envelope. YY dropped his receiver early in the piece, knocking some paint off a nice new car in the process and topped the day off with a visit to a farm on a dead-end road before consulting his envelope. He came up with OM twice in the course of a 37-mile trip, but OM still won the booby prize (log book) with 54 miles on his speedo! The same things in varying degrees happened to CT, AF and the others.

KA introduced some interest for the ladies in the form of a sweep, each car being considered a racehorse for the purpose of the exercise. "Beam, from Three Element by Rotate," 7CW in other words, brought home the bacon for Mrs. 7AF.

Messrs. Laurence and Hanson donated a prize for the champion loop-swinger, a high-voltage filter condenser.

The past few days have seen stirrings among the old-timers, with a round table QSO between 7LJ, 7CW, 5BY and 3CN. And, last but not least, 7AH whose dots are as clean as any we've heard in spite of eighty birthdays, may soon be having a go.

NORTHERN ZONE

This month we have much pleasure in announcing that Messrs. Don Brooks and Bill Carter have successfully passed their A.O.C.P. examination and will shortly be on the air. It is to be hoped that in the near future we will have sufficient members to enable us to hold occasional meetings.

Prior to writing these notes I contacted various members with the object of finding out their activities. In two instances I found that I had started a first-rate "hate" session. The subject—phone versus c.w.

It is to be deplored that this bogey should again come up and cause ill feeling in our ranks at a time when it is imperative that we stand united to keep our already over-crowded bands intact. It is not the purpose of these notes to try and solve this problem as using both phone and c.w. I like to consider myself neutral, how-

ever I do think that some stations could be more careful. 14040 Kc. is hardly the frequency to use when trying to raise DX on phone. As for the 7 Mc. band, well it could be likened to a side-show alley at its best.

Could we not come to some gentleman's agreement on the use of phone and c.w. on our DX bands? Then let the W.I.A. conduct an advertising campaign and let it be made known what they consider fair for all so that we can keep our bands clean AND our ranks united.

This month there is very little station activity to report. 7JW is at present building up a new receiver using a crystal filter and 1900 Kc. i.f. 7LZ has been forced off 28 Mc. owing to bad power leaks, but is working a bit of DX on 14 Mc. 7DS now using a half wave 14 Mc. single wire feed antenna, and, like 7RK, has found it works out very well.

7BQ is still finding time to work his skeds on 7 Mc. and to yarn with 3ACR every Sunday morning. 7GD has just completed a new transmitter using push-pull 809s in the final. 7TE is still managing to keep to himself so we have no news from Bill.

As these will be the first notes to be published for the New Year we will take the opportunity to wish all the gang, "Good Hunting" for 1948 with the best wishes of the Northern Zone members.

CORRESPONDENCE

12 Cromwell St., Hobart, Tas.
Editor, "A.R."

Mr. Vale's letter in November "A.R." seems to reflect the attitude of those who indulge the old human failing of pulling down a standard, be it telegraphic or technical ability, or anything else, if for some reason they don't reach it.

The business which occupied the years 1939 to 1945 brought such a demand for telegraphists AND technicians that it was necessary to try to mass-produce them. As in anything which requires patience and application, many of them remained "sausages," so many, in fact, that I fear some of us began to regard the "sausage"—only the telegraphist ones in Mr. Vale's case—as an accepted standard. The loss of many precious hours of communication, under conditions which would not permit of anything but solid and intelligent manual operating, can largely be credited to that attitude.

Now, I don't want to be hard on Mr. Vale—he errs in good company—but it seems to me that a technician is more worthy of the name if he can make full use of his equipment. The simplest and sometimes most effective use is to break up that beautiful carrier into Morse characters.

Yours faithfully,

W. W. WATSON, VK7YY.

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FEBRUARY

1948

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



The advertisement features a central illustration of a white boat on a dark sea, with two glass vacuum tubes (valves) mounted on the deck. To the left, a box of Philips valves is shown, with the Philips logo and the text 'PHILIPS VALVES' visible. The background is a dark, textured surface. The text 'full steam ahead' is written in a white, cursive font across the top right of the boat. A white rectangular box on the right side contains the text 'TO BETTER RADIO with PHILIPS VALVES'. At the bottom, a line of text reads 'PHILIPS ELECTRICAL INDUSTRIES OF AUSTRALIA PTY. LTD. Sydney, Melbourne, Perth, Adelaide, Brisbane'.

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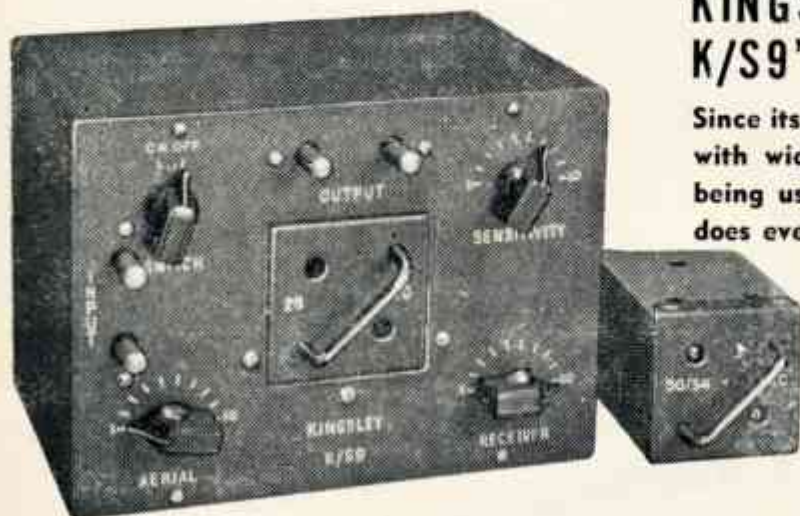


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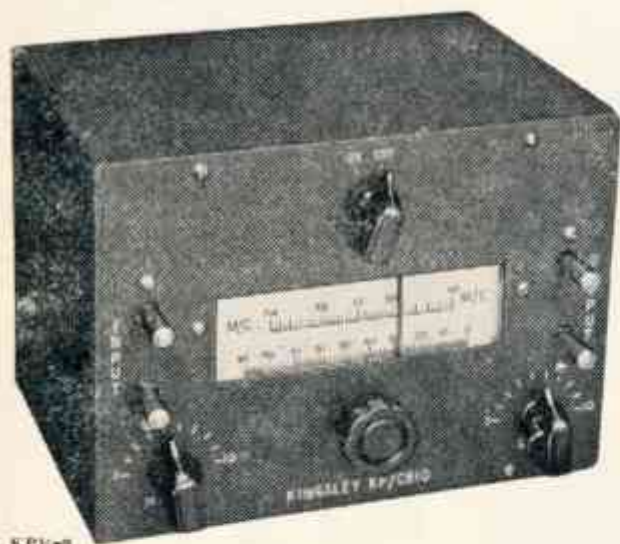
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EDITORIAL



"The danger to our civilization lies in the disparity between Man's wisdom and his power."—Joad.

With the present trend towards development of new equipment and techniques, we are sometimes apt to forget the advances that can be made in making our equipment safe against shocks and electrocution. In our enthusiasm and knowledge we can easily overlook the danger of our potential lethal machines.

Now is the time for all to become safety conscious and really do something about that "hay-wire." Many of us have young children, inherently curious, who must be protected against such dangers. Don't imagine that YOU or YOU are immune—we can all make ONE mistake. Even the late Ross Hull, who energetically conducted a safety campaign through QST and the A.R.R.L. for some years, made only one.

First you will want that isolating switch which cuts off power to every piece of equipment in your shack, preferably located near the door and out of the reach of children. Desirable also is another switch in series (and in a concealed position) at the operating position. A separate switch for each power supply in the primary circuit is another essential for isolating equipments from each other. Pilot lights are good indicators—use green for filaments, red for h.t.

Be liberal with the use of relays for switching and especially for keying. If you must make adjustments to the rig with the power on, do so with one hand in your pocket—you at least won't receive such a serious shock. Remember always when behind the rig that while you may be careful to watch what you do, you never know when a fainting turn might occur—all your care is then worthless should you bridge the h.t. Remember also that good filter condensers hold their charge for some time—you can get a nasty shock from this source even with all your switches off. Make sure you have all your chassis connected to a good earth—it's cheaper to replace fuses than blow your own.

Learn resuscitation and see that members of your family know what to do if needed. Acquaint them with the right switches to throw—you wouldn't want them electrocuted too.

While we have made no attempt to cover this important subject other than in general terms, we commend to all the excellent articles written in QST* and other publications. Study them well and do something about it NOW. Write an article on it for the guidance of your fellow amateurs—make them safety conscious too. There are always some who won't take heed, but don't let that B.F. be YOU. Make your gear safe NOW.

W.T.S.M.

* QST for Feb., Mar., April, 1939.

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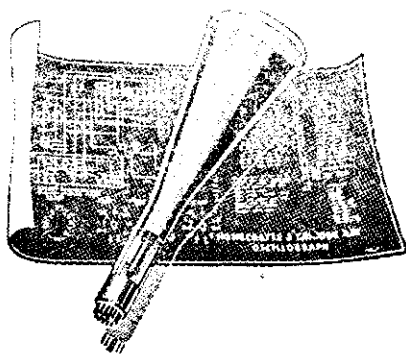
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PHASE MODULATED NARROW BAND F.M. EXCITER

By R. W. SANDON*, VK₃ABS

F.M. enables an increased output efficiency to be obtained so that for a given radiated power, the d.c. input power is considerably reduced. In the case of a.m., an output power amplifier must be capable of dealing with a peak signal of amplitude twice that of the unmodulated carrier, but the average depth of modulation being approximately 25% for speech, the stage is normally being under run. An f.m. signal has constant amplitude and hence the output power amplifier can be fully loaded and will, therefore, be more efficient. For the same d.c. input to the output power amplifier, the radiated power is twice as great on f.m. as on a.m.

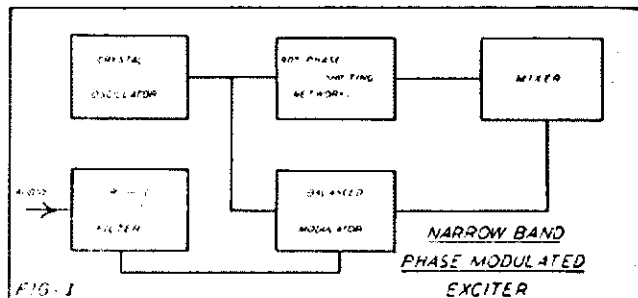
The exciter to be described uses the oscillator crystal frequency necessary to place a signal in the centre of the 27.185 to 27.455 Mc. f.m. band, namely 27.320 Mc. Any method to suit the experimenter can be used to provide the oscillator frequency providing the output will eventually end up in the f.m. band.

THEORY

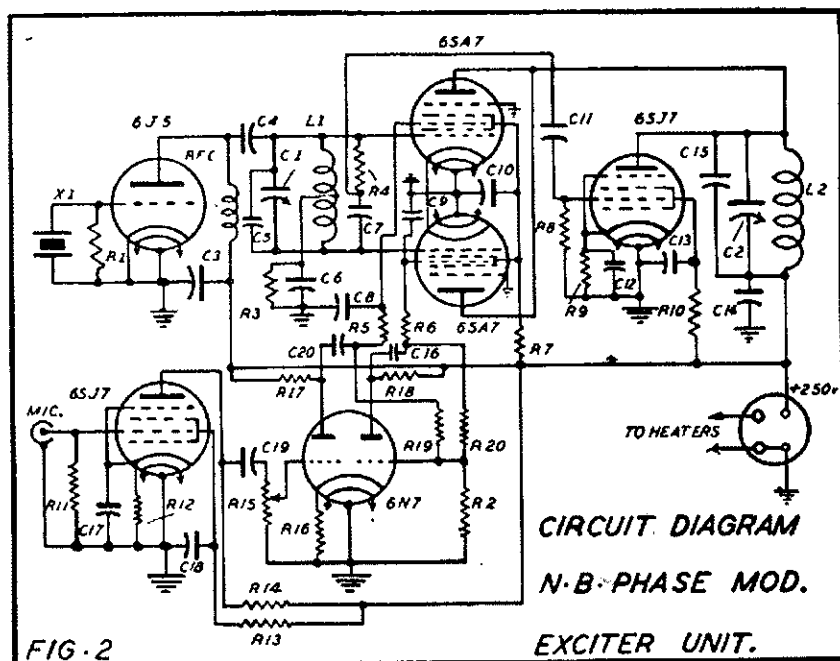
The amount of f.m. produced by phase modulation depends upon the amount of phase shift and the rate of change of phase. A shift in the phase of the r.f. carrier will cause the effective frequency to change as long as the phase is changing. As soon as the phase stops changing the frequency returns to its original value. The faster the phase is changed the greater is the frequency shift. When the phase is changed at an audio rate, the change is obviously most rapid at the high audio frequencies, and, for a given amount of phase shift, the amount of frequency modulation increases directly with the modulation frequency.

To make the frequency modulation independent of the audio frequency and proportional only to the amplitude of the modulating signal, a simple r.c. filter is inserted in series with the audio input to the phase modulator. This filter causes the amount of phase modulation to decrease linearly as the modulation frequency increases, thus giving a true frequency modulated signal. Phase modulation is obtained by amplitude modulating a constant frequency carrier, separating the a.m. side bands from the carrier, shifting the phase of either the carrier or the side bands by 90°, and recombining the side bands with the unmodulated carrier. All of this can take place at very low power levels, where receiving tubes and components can be used. A block diagram of the basic arrangement is shown in Fig. 1.

The phase shifting network is shown in the excitation lead to the mixer stage, but it might just as well be in the input or output lead of the balanced modulator stage, the only requirements being that there should be a 90° phase shift between the side bands and the carrier. The balanced modulator stage shown in Fig. 1 may consist simply of two tubes with their grids in push pull and plates in parallel, with audio fed into another pair of grids in push pull. When there is no audio signal applied to the modulator, the push-pull grid excitation is cancelled out in the parallel plate circuit, and the modulator does not give any output. However, when an audio signal is applied to the modulator, the stage is



duced before the distortion becomes objectionable. The lowest modulation frequency is the limiting factor in the amount of phase modulation which can be used because the previously mentioned r.c. network reduces the phase modulation as the frequency is increased, thus causing the modulation to be greatest at the lowest frequency. For



- R1, R2, R8, R17, R18—100,000 ohms $\frac{1}{2}$ watt resistors.
 R3—10,000 ohms $\frac{1}{2}$ watt resistor.
 R4—5,000 ohms $\frac{1}{2}$ watt resistor.
 R5, R6—3,000 ohms $\frac{1}{2}$ watt resistor.
 R7—10,000 ohms 5 watts resistor.
 R9—300 ohms $\frac{1}{2}$ watt resistor.
 R10—50,000 ohms $\frac{1}{2}$ watt resistor.
 R11—2 Meg. $\frac{1}{2}$ watt resistor.
 R12—500 ohms $\frac{1}{2}$ watt resistor.
 R13—1 Meg. $\frac{1}{2}$ watt resistor.
 R14, R19, R20—0.25 Meg. $\frac{1}{2}$ watt resistors
 R15—0.5 Meg. Potentiometer.
 R16—2,000 ohms $\frac{1}{2}$ watt resistor.

- C1, C2—75 mmfd. variable condenser.
 C3, C4, C12, C13, C14, C19—0.01 mfd. 600 v. condenser.
 C5, C15—0.0001 mfd. mica condenser.
 C6, C16, C20—0.05 mfd. 600 v. condenser.
 C7—3-30 mmfd. trimmer condenser.
 C8, C9, C10, C18—0.1 mfd. 600 v. cond.
 C11—0.003 mfd. mica condenser.
 C17—25 mfd. 25 v. electrolytic condenser
 R.F.C.—2.5 mhy. choke.
 X1—1707.5 Kc. crystal.
 Mic.—Microphone connector.
 L1, L2—Approx. 40 turns, 24 gauge enamel, close wound on 1" former. L1 is centre tapped.

*336 Dandenong Rd., East St. Kilda, Vic.

Transmitting Design and Construction

By J. N. WALKER*, G5JU

(Published by Special Arrangement with the R.S.G.B.)

The wide range of amateur requirements makes the subject of transmitter design a none-too-easy one to discuss. Further, any transmitting installation of necessity contains many ancillary items such as v.f. oscillators, modulators, power supplies, aerial matching units and so on. This article is confined to the actual generation of r.f. energy for the input permitted or possible, having regard to efficiency, reliability, economy and other factors.

Amateur or other voice communication work, this disadvantage of the phase modulation method becomes less important. For one thing the male voice does not often produce maximum intensity peaks below 400 cycles, so that we can take 400 cycles as the lowest frequency at which full modulation will occur. Secondly, the maximum permissible deviation may be one half of the lowest frequency at which maximum modulation occurs, thus giving a maximum deviation of 200 cycles.

These three stages produce an f.m. signal having a maximum deviation of 200 cycles. The signal frequency is 1707.5 Kc. Frequency multiplication of this signal to reach the 27.185-27.455 Mc. band would give an increase in deviation of 16 times, making the maximum deviation of 3.2 Kc. at 27.320 Mc. A deviation of 3.2 Kc. on the 27.185-27.455 Mc. band is enough for narrow band work.

THE CIRCUIT

Fig. 2 shows the circuit of the phase modulated exciter. A 6J5 is used as the 1707.5 Kc. crystal oscillator which uses a balanced plate tank circuit. The output from this tank circuit is fed directly to the two number 1 grids of the 6SA7s, which act as the balanced modulator. Another output connection from the oscillator stage is taken from the junction of R4 and C7 which together form the phase-shifting network. When the reactance of C7 is equal to the resistance of R4, the output between the junction and ground is 90° out of phase with the energy at the ends of LI.

The phase shifted output is fed through C11 to the grid of the 6SJ7 mixer stage. The mixer plate tank circuit also acts as the plate circuit for the balanced modulator, and here the side bands are combined with the phase shifted carrier to form a phase-modulated signal. The audio section of the exciter consists simply of a 6SJ7 resistance coupled to a 6N7 self balancing phase inverter. Output from the 6N7 plate is fed through the r.c. networks formed by R5-C8 and R6-C9 to the number 3 grids of the two 6SA7s. The gain of the audio section is ample for any ordinary crystal or high impedance dynamic microphone.

TUNING UP

Before tuning the exciter up remove the 6SA7s from their sockets since these tubes receive their bias from the grid current through R3 and loss of excitation during the initial tuning is likely to lead to damage of the tubes.

After the preliminary tuning the 6SA7s may be replaced in their sockets and C1 and C2 returned to compensate for the capacity added by the tubes' grids and plates. C7 should be set about half way. Speaking into a microphone while listening on a receiver tuned to 1707.5 Kc. should reveal that a frequency modulated signal is being produced.

The power pack for the exciter should be capable of delivering 250 to 300 volts at 80 to 100 mills and 6.3 volts at 3 amp.

It is not proposed to put forward any hard and fast designs of particular transmitters, since so much will depend on factors such as frequency, power, constructional ability and facilities, room available and experimental inclinations.

In pre-war days 60 Mc. was considered a band calling for somewhat special technique. This is only partly so to-day and the points which follow apply to all the normal Amateur Bands, including 60 Mc. Special v.h.f. technique is not considered since this can well form a subject of its own.

The information is intended in the main for those lacking experience in transmitter design. At the same time, there are many who, whilst capable of building a good piece of equipment, may not altogether be clear regarding the reasons governing the choice of component values, and these will doubtless pick up useful hints.

An Amateur is known by the quality of his signals (and by his operating procedure) and if this article assists others to effect improvements or avoid trouble, its object will have been achieved.

The article is divided up into a number of major headings, any one of which almost forms a subject on its own. Yet, if any are left out or are passed over too briefly, the balance as a whole will be destroyed. Inevitably, some matters must be dealt with briefly.

IMPORTANCE OF IMPEDANCE

An actual transmitter consists of:—

- (1) A primary frequency source which may be either crystal or v.f.o.
- (2) One or more frequency multipliers—it is not wise to work straight through in the fundamental frequency, unless the power output is comparatively low.
- (3) Possibly a buffer stage—generally required only for high power working.
- (4) The Power Amplifier stage.
- (5) Aerial Coupling.—Not considered here.

All these stages have things in common—drive, bias, by-passing, decoupling, etc. Variations occur in the applied voltages, power outputs, coupling methods and anode and grid L/C ratios. Also as in practically all other radio apparatus, the component parts all possess one common characteristic—impedance. In places, a high impedance is essential—

in others, the impedance must be reduced to the lowest possible practicable figure. Good transmitter design largely boils down to paying proper attention to the various impedances—matching them together where necessary, and adjusting them to suit the particular requirements called for in different circuits, in different parts of any circuit and when using different types of valves.

By so doing and by correct choice of valves to suit the power requirements, both efficiency and economy of operations are assured.

BY-PASSING

Generally speaking, high impedance is obviously necessary across tuned circuits and at valve grids and anodes. At other points however, such as the screen grid and cathode valve electrodes and at the "earthy" end of tuned circuits, the impedance with respect to ground—which is usually the chassis—must be low.

R.F. currents exist at all these points and, in the later stages of a transmitter, they can be of considerable magnitude, particularly at the higher frequencies. Current flowing through an impedance produces voltage and this voltage, existing at what should really be "earthy" points, as regards r.f., will lead to instability, lack of gain and erratic performance.

The by-pass condensers used must therefore be of (a) the correct size, (b) the highest possible quality. It is a *sine qua non* that either mica or ceramic condensers should be used—the former will in general prove fairly satisfactory, provided they are not years old and therefore of doubtful quality. For really low loss and low impedance, the ceramic types, such as those manufactured by U.I.C., e.g. the transmitting pot type for high power final amplifiers, the tubular type LPC for lower powers, and the disc type HVD for coupling purposes, are recommended.

What governs the actual capacity used at any particular by-pass position? The reactance of a condenser at any given frequency decreases as the capacity increases and, if other factors were ignored, it should be correct to use 8 mfd. condensers everywhere (voltage permitting). However, that, as Euclid would say, is absurd!

Two major factors enter here, in addition to actual capacity, one is the power factor and the other the inherent inductance possessed by condensers. Power factor is the measure of loss, and

* Engineer, Technical Services Dpt., Stratton & Co. Ltd., Birmingham, Eng.

such loss increases rapidly with frequency. Electrolytic and paper condensers should therefore not be used in radio frequency circuits.

The wire leads fitted to some condensers and generally necessary with others, possess inductance and the thinner the wire the greater the inductance. Some of the impedance developed by this inductance is cancelled out by the capacitive reactance of the condenser but nevertheless, it must be reduced to the smallest possible proportions. This can be accomplished by (a) reducing the length to the absolute minimum; (b) using copper tape or braid instead of comparatively thin wire.

The inductance of an average small mica condenser is usually about 0.04 microhenry. The impedance of this inductance at 7 Mc. is about 2 ohms and at 30 Mc. about 7.5 ohms. The aim therefore is to use a condenser, the capacity of which is such as to cancel out the inductive impedance. As the frequency rises, the optimum capacity becomes less. At 30 Mc., for instance, a 400 pF. condenser has a reactance of about 7 ohms and this is the most suitable capacity.

To take an extreme example to illustrate this point further, assume that in some part of a 60 Mc. transmitter, long leads are necessary to connect a by-pass condenser in circuit and that these leads show an inductance of 1.25 uH. The inductive reactance will be 500 ohms.

Say the condenser is one of 300 pF., which will have a reactance of 10 ohms. Obviously, the much greater inductive reactance will take complete charge and considerable r.f. voltage will be developed across it. If, however, a 5 pF. condenser was fitted in lieu, with a reactance of 500 ohms, complete cancellation would occur and the by-pass would show zero impedance. The cir-

cuit is then series tuned to resonate at the working frequency and this practice is desirable and often practicable in transmitters working on the higher frequencies. It becomes essential in the v.h.f. regions.

Of course, in a transmitter used on several bands, a compromise has to be struck but rarely will any benefit accrue from fitting condensers bigger than 0.002 uF.

DECOUPLING

It is necessary to provide not only a low impedance by-pass for r.f. currents but also a relatively high impedance path, so that the currents do not divide between the two branches. The second branch, which can be a grid bias or high tension lead, is obviously bound to possess considerable inductive impedance and quite small currents will set up r.f. voltages which are then radiated to other parts of the equipment and there amplified, to give rise to all sorts of trouble.

Looking at it the other way also, the long connecting leads are liable to pick up energy off the aerial and, if high impedances are not inserted, this energy will be fed into the early stages.

Proper decoupling is illustrated in Fig. 2. It will be seen that a resistor is included in the grid and screen leads, where the current flowing is small, and an r.f. choke in the anode lead, where it is undesirable to have a serious voltage drop. The value of the resistors should be at least ten times greater than the impedance of the condensers but, even so, the values can still be quite small—200 to 500 ohms.

CORRECT WIRING

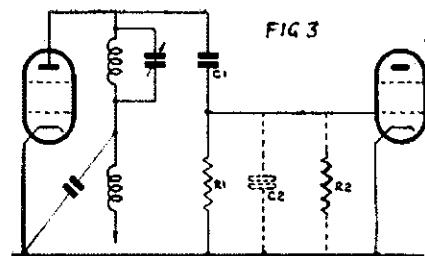
Bound up with by-passing and decoupling is the necessity to wire up any one stage so that circulating currents are prevented. Fig. 1 shows how wiring should not be done. The by-pass condensers C1, C2, C3 and C4 are returned to any convenient point on the chassis, with the result that circulating currents are set up in the latter and, according to the phases, positive or negative feedback effects will occur—generally the latter. Both, when uncontrolled, are undesirable and will tend to cause instability or lack of gain.

The cathode (normally) is the actual point of zero r.f. potential and, in Fig. 2, C1, C3 and C4 are all returned direct to the cathode, with C2 acting as the by-pass to chassis. In some valves—the QVO4/7 for instance—a further improvement results from using the several cathode or internal screen pins individually for each condenser.

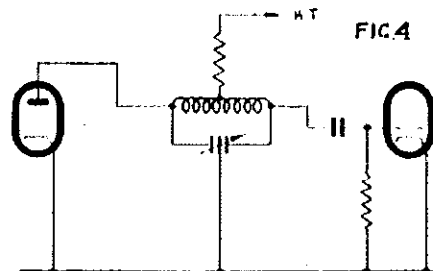
COUPLING METHODS

Correct coupling between any one stage and the next really means matching up the input and output impedances, so that maximum power is transferred.

Capacitive coupling is commonly employed and, because modern valves generally require only low values of drive, it is often satisfactory. In the usual circuit, Fig. 3, C1 is the coupling condenser, C2 the stray capacities (including the valve), R1 the grid leak and R2 the input impedance of the valve. The impedance of R1, R2 and C2 repre-

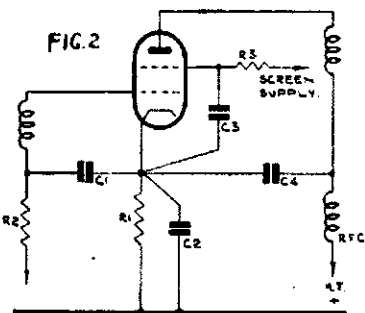
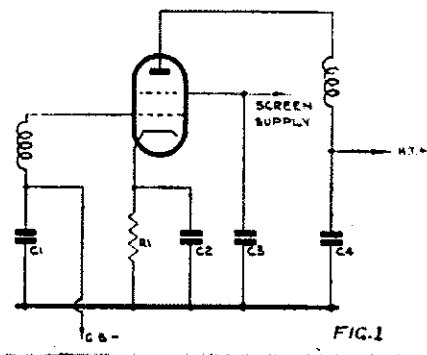


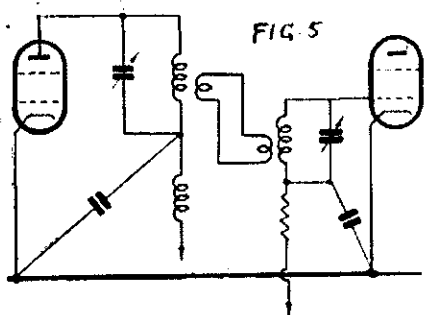
sents an impedance which, at low frequencies, is chiefly governed by C2 and at higher frequencies, by R2. In any case, this impedance and that of C1, form a potential divider across the source of r.f. energy, and the voltage applied to the grid will depend on the size of C1. At low frequencies, C1 can be quite small and adequate power still transferred to the grid of the driven valve. At high frequencies however, C2 must be increased, since the impedance of C2, etc., is dropping. The result, in the majority of cases, is that the tuned circuit is too heavily loaded and the efficiency and output of the driver valve both fall away. To minimise this effect, the L/C ratio of the tuned circuit should be comparatively low—the capacity of the tuning condenser should be at least 1 pF. per metre.



This state of affairs can be improved quite considerably by changing over to the balanced circuit shown in Fig. 4. The stray capacities associated with each valve are now in series—and therefore effectively a quarter of their previous total value—and at the same time, the effect of the valve input and output impedances are also similarly reduced. Two facts follow—it is technically permissible to increase the L/C ratio of the tuned circuit and it is also practicable to do so, because of the reduction of stray capacities. A split stator condenser is required and the size of coil should be increased by 50% or more. The centre tap of the coil must be decoupled by an r.f. choke or a resistor—which can be between 250 and 500 ohms, dependent on the voltage drop permissible.

Link coupling, as shown in Fig. 5, is probably the most efficient method of impedance matching, since the L/C ratio (of which more later) of the two tuned circuits can be arranged independently to suit each valve. Link coupling is equivalent to direct inductive coupling but usually permits better screening and lay-out of the different stages. It also enables the circulating currents associated with each valve to be kept to





their proper paths. It is difficult to achieve proper balance when using capacitive coupling between a single ended stage and a push-pull one and link coupling should always be used.

Experiment is necessary with the number of coupling turns but a good average is to use one tenth the number in the main winding. The link itself can be made of 18 s.w.g. wire enclosed in polythene tubing, laid flat and bound together with suitable adhesive. Poor insulation, such as P.V.C. tubing, should not be brought into the fields of the coils. For long links, the usual low impedance co-axial feeder is very suitable.

STABILITY

By stability is meant controlled operation throughout the transmitter so that a good, clean signal, be it c.w. or telephony, results.

In the first place, construction should be good—properly soldered joints, components of good quality, adequate and properly thought out by-passing and decoupling, etc. All wires leaving the chassis should have small by-pass condensers fitted and it is also important to fit by-pass condensers across each heater or filament to ensure that both ends are at equal r.f. potential. Lack of these is a common cause of modulation hum.

The power supply should be properly designed and be well regulated. Steps should be taken—by the insertion of by-pass condensers and filter chokes—if necessary, to prevent r.f. feedback into the mains wiring and to prevent trouble from r.f. picked up by the mains wiring—the latter can be quite appreciable if the mains wiring is in the field of a large aerial system.

The emission of the valves in each stage is an important point. The oscillator must come into operation instantaneously and each valve must be capable of passing the full peak current expected, in contrast to the average value shown on any meter in circuit.

PARASITICS

The next thing is to ensure that parasitic oscillations are not being generated in any stage of the transmitter. If they develop in an early stage, amplification is almost sure to occur in the later stages whilst, if they occur in the power amplifier, considerable power will be wasted in addition to the spooliation of the emitted signal.

Modern valves are usually of high mutual conductance and very slight feedback is liable to lead to oscillation

and instability. It should not be forgotten, also, that in a tetrode valve, high mutual conductance exists between the control and screen grids. Too often, the screen grid is ignored as a factor in the production of parasitics.

Self-oscillation may take place (a) on or near the fundamental frequency; (b) at a very high frequency; (c) at a low radio frequency, or (d) in several modes simultaneously. With the high value of bias applied, the mutual conductance will, of course, be low. To test therefore, it is necessary to remove the drive, adjust the bias so that a suitable standing anode current flows (within the rated dissipation) and fit meters in the grid and anode circuits (if not already there).

Listening on the receiver will show if self-oscillation at the fundamental frequency is taking place—a somewhat rough, unstable but single note will be audible.

Rotating the tuning condensers will affect the frequency in normal fashion, and average values of grid and anode current will flow. A neon lamp will show the usual brightish red glow.

The cures are obvious—attention to neutralisation if a triode, additional screening and more effective decoupling. Ensure that all metal parts are properly earthed, so that they do not cause indirect coupling. This applies particularly to such items as unused valve pins and metal bases on valves. Radiation off the aerial (if of the end-on type) or off open wire feeders may be reaching the input circuit, if the trouble occurs in the power amplifier. Substitution of an artificial load will indicate if this is the case. Care should always be used to run the feeders directly away from the final tank circuit and it is worth mentioning that the use of low impedance

cable, either to feed the aerial or its matching network, will often effect a cure. Occasionally it will be found impossible to cure self-oscillation when no load is connected but that it disappears with a load.

The reason for v.h.f. parasitic oscillation is shown in Fig. 6. Here the anode and grid wires are emphasised to indicate that they may act as a linear tank circuit (with a tetrode, the screen grid lead will act similarly), resonant at a very high frequency, oscillation taking place because of feedback through the interelectrode capacities. Both anode and grid current will be high, the valve will heat up considerably and a neon lamp held at the points marked "X" will glow purple but will not glow (purple) at the other end of the line. The effect will be greater with the tuning condensers at maximum since they then act as by-pass condensers to the v.h. frequencies. At minimum, the impedance offered may be sufficient to prevent v.h.f. oscillation.

The cure is to make the anode and grid leads considerably different in length or to insert stopper resistors (see Fig. 7).

Low frequency parasitics are almost always due to the presence of r.f. chokes in both anode and grid (possibly and screen) circuits, and these, with the by-pass condensers, resonate at a frequency much lower than the fundamental. The anode and grid meters will tend to show low current readings and a neon lamp will glow dull red at any part of the anode circuit—which includes the "earthy" end. The variable condensers will have practically no effect.

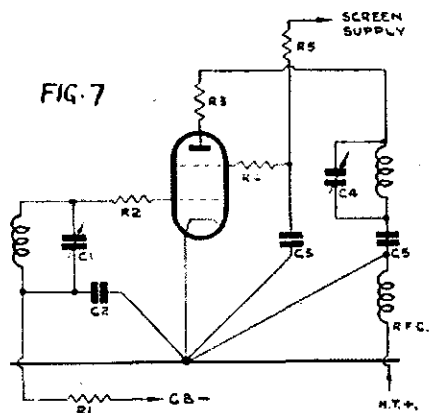
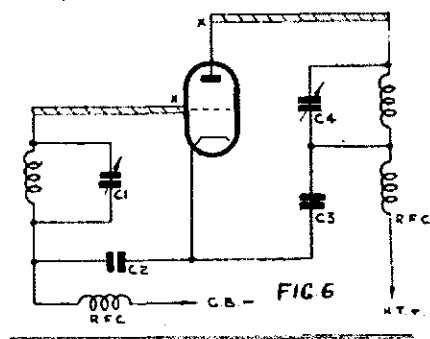
The cure is to cut out one choke completely—preferably the grid one—and substitute a resistor in its place. Otherwise, alterations of the by-pass condenser values may also effect a cure.

Fig. 7 shows a circuit which includes precautions against parasitic oscillation taking place. The grid and anode resistors should be as low a value as possible and of the carbon—not wirewound—type. Usually 6 to 10 ohms for R2 and 12 to 22 ohms for R3 will suffice. The screen resistor R4 should come before the by-pass condenser and 47 ohms is satisfactory, although on occasions as much as 100 ohms may be required. An r.f. choke is used in the anode circuit and resistors (R1 and R5) in the others, for decoupling purposes.

GRID DRIVE REQUIREMENTS

The various modes of valve operation—Class A, B, and C—are not applicable to the present article. Suffice to say that Class A is rarely used—it is useful for a buffer amplifier in a v.f.o.—and Class B is only used where driving power is lacking (Class B gives maximum power gain). Class C is the usual mode, with grid bias adjusted to two or more times cut-off.

The actual amount of power which must be delivered by the driver stage will depend on several factors, including the type and size of driven valve, the circuit losses, frequency and bias system. Generally it is wise to budget for two or three times the amount of driv-



ing power specified by the manufacturer for any given valve.

The method of coupling, dealt with earlier, also comes into the picture and it is presumed this has been designed to give proper matching.

The circuit losses will naturally be kept small, by the use of efficient condensers, coils and insulating materials. Valve losses, due to lower input impedance caused by transit time effects, and higher circulating currents, will increase considerably with frequency and more power must be applied if the same amount of effective drive is to be realised.

Quite distinct from the input impedance, which exists under any class of operation, a further impedance is placed across the input circuit by the flow of grid current between the grid and cathode of the valve, under Class C conditions. To ensure good regulation of the driving power, this impedance must be taken into account when choosing the L/C ratio of the grid circuit. High grid current with low grid bias volt represents a low impedance. More capacity is then required in the tuned circuit and vice versa.

Grid current flows usually only during a portion of the positive half of the cycle and it should be remembered that the grid current meter indicates average current—the peak value can be quite high.

The current should be the same irrespective of how the bias is derived—the peak amplitude and actual time of flow, or angular duration—are variable

and the average current a constant. The valve manufacturer generally gives two figures for grid current—one the maximum and the other for typical operation. It should rarely be necessary to exceed the latter and never the former, or the rated grid dissipation will be exceeded.

One point should be made clear—the recommended values are for normal operation with the anode circuit properly loaded. With no h.t. on the anode, or the anode current below normal, the grid current will automatically increase. So also will the grid dissipation. The higher the anode volts, the less generally should be the grid current.

The greater the grid bias, the greater the overall driving power required, since both the r.f. voltage and the peak grid current will increase. At the same time however, the impedance reflected by the grid/cathode path will be greater and it will be possible to use a higher L/C ratio, with some probable increase in efficiency.

Care must be exercised not to over-drive any stage. The effects of over-driving are to increase grid dissipation, produce excessive harmonic output and, in a tetrode, drive up the screen current to harmful values. A frequency multiplier stage is, of course, purposely provided with high drive, since it is the intention to produce high harmonic output but the anode current must be properly loaded and steps taken to prevent excessive screen current by feeding the screen from a potential dividing network, or separate supply of correct voltage.

It is particularly important to match the power input to a driver stage to meet the requirements of the driven stage. Presuming efficient coupling, it is obviously absurd to use a stage producing 10 watts or so of r.f. power to drive another requiring 2 watts—yet how often one sees this happening. In such a case, to avoid over-driving it becomes necessary to use loose coupling and the driver valve anode circuit is not properly loaded. If, as is usually the case, the valve is a tetrode, excessive screen current is likely. It is better to reduce the anode and screen voltages and increase the anode current to a reasonable value.

Some means of varying the screen voltage is an excellent method of controlling the drive throughout the transmitter since, in any tetrode valve, the anode current is dependent very largely on the screen voltage.

When using telephony, the drive and also the bias must be adjusted so that they are correct for the valve operating at modulation peaks. The peak input is four times the average input and obviously a valve (or valves) must be chosen capable of withstanding the increased dissipation and peak voltages which occur during modulation. Which explains why the maximum rating given for c.w. must not be used for telephony—drive, bias and peak anode voltages will be excessive.

BIAS SYSTEMS

Three main methods exist of providing bias for a valve:—

- (a) Volts dropped across a cathode resistance.



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(b) Volts dropped across a grid resistance.

(c) External source of d.c.

Cathode bias is useful when the voltage required is small and it also protects the valve, to some extent, if the drive fails and only grid leak bias is provided. However, it is difficult to obtain sufficient bias for Class C operation and the voltage developed is derived from the h.t. supply, the effective value of which is therefore reduced. Sometimes, of course, this is a useful feature.

Meter indications are difficult to assess when employing cathode bias. As the anode current increases (for any reason), so also does the bias, tending to limit the anode current. Conversely, a reduction of anode current, as when tuning for minimum dip, reduces the bias and tends to increase the anode current. It is therefore advisable only in early stages or in conjunction with another source of bias.

The current through a grid resistance (R_1 , R_2 in Fig. 8) is derived from the rectifying action of the grid/cathode portion of the valve, across which appears the r.f. voltage. The whole action is identical to that which occurs in any ordinary power pack, delivering d.c. from an a.c. transformer, and using a half-wave rectifier. As is normal, the cathode is positive and the other side of the load resistance (R_1 , R_2) is negative. It will be seen therefore that the bias is derived from the r.f. energy and in effect, one goes to considerable trouble to produce this energy only to throw it away again. It is obviously more economical to provide a separate source of bias. In Fig. 8 this is fed in series with the circuit, R_2 now becoming the load resistor of the bias supply and R_1 a decoupling resistor. Both should be of relatively low values, to prevent undue grid current volt to drop across them—the actual values will depend on the amount of grid current flowing.

If a grid resistor is used alone, the valve is liable to suffer when the drive—which is also the source of bias—is

removed. It should therefore be used in conjunction with cathode bias.

The value of grid resistance is seldom critical, as it has the effect, to some extent, of automatically adjusting the bias. It should be low where the grid current is high and vice versa—the actual value is worked out from Ohm's Law, according to the grid current and to the bias required. The latter will be higher for frequency multipliers and so also will be the resistance.

With an external supply, the bias volts are not dependent on the amount of drive or on the anode current. The h.t. voltage remains at maximum, the valves are safeguarded, and all the r.f. energy is available for its proper job.

A battery is sometimes a convenient method of obtaining fixed bias and is satisfactory provided two points are watched. The first is that the grid current in practice charges up the battery and the voltage may rise to values well in excess of the nominal value. The other is that as the battery ages, its resistance will increase and so allow further bias to develop. Unquestionably, where facilities permit, a separate mains operated power unit is desirable. The design can be quite simple—moderate voltage—metal rectifier—high current. The latter is desirable to swamp out the effect of grid current, particularly when triodes are used.

A circuit for use with a mains bias unit is given in Fig. 9. R_2 may be either a fixed or variable resistor. It serves two purposes—to ensure that the bias on the p.a. stage is never actually zero, and as a means of deriving a moderate degree of fixed bias for earlier stages. The value and wattage of R_3 will depend on the valves used, those shown being typical. R_1 is purely a decoupling resistor and 470 ohms will usually be sufficient.

A safety precaution is also indicated in Fig. 9. A relay is inserted in series with the grid bias supply to the resistor network and normally holds closed with over 30 M.a. flowing. If, for any reason, the current falls off, the contacts, which are in series with the primary of the h.v. transformer, open and prevent the possibility of damage occurring to the valve.

L/C RATIO AND Q

In a receiver, it is generally the aim to secure the highest possible Q value in the tuned circuits. Yet, in transmitters a Q of generally 12 or 15 is called for. Why the difference?

In the first place, in a receiver it is voltage which is wanted—in a transmitter, useful power. A transmitter tank circuit, built with high quality components, possesses a very high inherent Q—often 400 or more. To draw away r.f. power, a resistive load must be applied and this load brings down the Q until for maximum transfer, it is in the region of 12. Below this, the efficiency will fall off rapidly. Actually, a value of 15 will prove more suitable as it results in less interference, less tendency to harmonic radiation and greater linearity when using telephony.

Q decreases less rapidly with load if the L/C ratio is properly adjusted to suit the valve impedance and circuit conditions. Energy is drawn away continuously but, in Class C operation, energy is only being delivered to the circuit during a portion of the positive cycle. The main circuit elements—the inductance and capacity—must therefore store a certain amount of energy if oscillation is to be maintained and there must always be a certain minimum amount of capacity, the actual value depending on a number of factors, including frequency, valve impedance, load impedance, circuit arrangement (balanced or single ended) and whether

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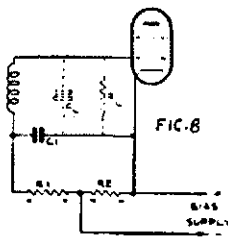


FIG. 8

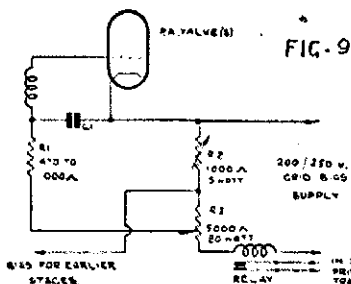


FIG. 9

telephony of c.w. transmission is called for.

This effect is directly comparable to the flywheel in the car engine analogy. With a slow revving engine (low frequency) applied to a heavy load (low impedance), a heavy flywheel (large C) is necessary if the power is to be delivered smoothly, and vice versa.

Taking as an example a typical case—a valve such as an 807 running at 600 volts, 100 Ma.—in a single ended circuit, the minimum capacity including "strays" should be 25 pF. at 7 Mc., 12.5 pF. at 14 Mc. and so on. If the voltage is halved or the current doubled (but not in an 807!), the parallel resistance is halved and the minimum capacity must be doubled. In a balanced circuit, the parallel resistances are effectively quadrupled and a quarter of the above values is correct. But it must be remembered that, with a split-stator condenser, each section must be twice the value of the actual capacity, with some reserve in hand, of course.

The above applies equally to triodes and tetrodes depending only on the impedance, which, for this purpose, may be taken as the product of voltage over current. A push-pull amplifier, neutralised or not, and a neutralised single triode are treated as balanced circuits.

All the above is in the books but it is not the whole story. In the first place, whilst more important in the output stage, the L/C ratio should be correct throughout the transmitter. Further, this applies not only to anode circuits but also to grid circuits, where possible, i.e. separately tuned.

At the higher frequencies—28 Mc. for example—the correct capacity values work out quite small and often smaller than the input or output capacity. Therefore, a greater proportion of circulating current will tend to flow through the valve, including the comparatively thin wire used for the leads and seals. To prevent the increase in resistance loss caused thereby, it is important to ensure that the lumped capacity is at least equal to the valve capacity, and preferably rather greater. Which explains why efficiency tends to fall off with high capacity valves at the higher frequencies and it is better practice to use low capacity triodes.

Other than losses, there is also the necessity of ensuring that actual balance does in fact exist in circuits using split stator condensers. A certain amount of minimum capacity—equal to or greater than the interelectrode capacities—must be present, even if the resulting effective capacity is greater than would normally be called for.

It will be seen that the minimum capacity of a transmitting condenser is relatively important, except when really low capacity valves are employed.

Having dealt with some of the major design factors, it is now proposed to pass on to some practical circuits, of the type generally used, and explain briefly the points which call for attention.

THE TRITET CIRCUIT

For some reason or other, the tritet circuit is not always popular but, pro-

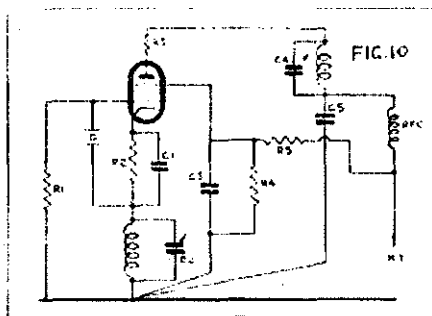
viding the design is correct, no difficulty should be experienced with it. Fig. 10 shows a typical circuit. R1 should be high, for good harmonic output and no choke should be used in the grid circuit. C1 and R2 are desirable, to ensure ready oscillation. The cathode circuit must tune on the high side of crystal resonance, using a low L/C ratio—a capacity of 2 pF. per metre is correct for C2, which also acts as a by-pass condenser at the harmonic frequency. The screen grid should be fed from a potential divider and not allowed to float, the actual voltage being kept as low as possible, consistent with sufficient power output.

The resistor R3 is essential—a value of 22 ohms is usually satisfactory. The L/C ratio of the anode circuit should not be unduly high. Any tetrode is suitable, the 6V6 type being particularly recommended.

CRYSTAL OSCILLATOR

Fig. 10 again applies, with the cathode circuit shorted out. For maximum output, the anode L/C ratio should be on the low side, a value of 1.5 pF. per metre being about right, i.e. 60 pF. for a 7 Mc. crystal. Either a triode or tetrode valve may be used, the latter being less liable to damage the crystal.

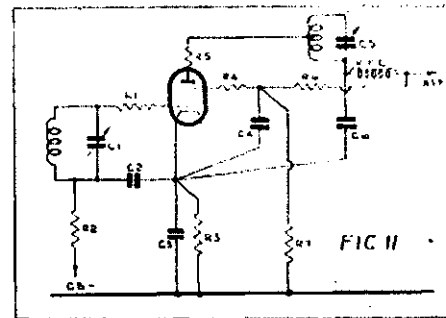
In both crystal oscillator and tritet circuits, the input power should be kept as small as possible, to prevent crystal heating and consequent frequency drift or damage. The anode circuit must be properly loaded up or the crystal current may be unduly high.



FREQUENCY MULTIPLIER

In this service, the valve is operated under conditions which produce severe distortion. Grid bias and drive must be both greater than would otherwise be the case. A tetrode, with its high power gain, is most suitable but a triode can also give good results. The push-push circuit can be used for even harmonic production, with an increase in efficiency, since the anode circuit receives pulses of energy at twice the rate otherwise possible. Similarly, a push-pull stage is good for odd harmonic output.

Fig. 11 illustrates a circuit suitable for a single tetrode, complete with proper decoupling measures and precautions against parasitic oscillation. The anode is shown tapped down on the coil—a useful device at the higher frequencies to enable a high L/C ratio to be used. Otherwise, the anode circuit should be of the balanced type shown in Fig. 4.



BUFFER AMPLIFIER

The design factors are very similar to those called for in Power Amplifier stages. The power output requirements should be carefully studied so that the buffer stage is neither over nor under loaded.

POWER AMPLIFIER

A large number of transmitting valves are available and the choice will generally be governed by cost, ready availability and power requirements. One point to remember is that it may be better in the long run to use a relatively expensive valve which is of the high current, low anode voltage type, rather than one which requires high anode voltages.

Whether triodes or tetrodes are used is also a matter of choice. Each have advantages and disadvantages, but triodes are definitely easier to adjust and more straightforward in operation. They are therefore recommended to those without much experience.

Tetrodes call for more care in construction rather than design. Better screening is usually required, and all metal parts, such as bases, unused pins, etc., should be connected to chassis by means of short, heavy leads, to prevent coupling effects. The applied voltages are more critical—in particular, the screen and control grid voltages should be as near the maker's figures as possible. It is not good practice to obtain the screen voltage via a dropping resistance, as this leads to poor regulation. Either a potential divider should be used, designed to hold the voltage reasonably constant, or a separate supply. Inability to obtain satisfactory performance is more often than not due to maladjustment of the screen voltage, on which depends the anode current and the degree to which the anode circuit can be loaded.

One effect of overdriving the valve will be to increase unduly the screen current. The voltage dropped across any resistance in series with the screen supply will also increase and it becomes a difficult business to secure proper adjustment. The moral obviously is to use no more drive than is adequate for the purpose and to feed the screen from a power supply of low impedance.

Another effect of overdriving is to produce high harmonic output. This is the object in a frequency multiplier but one to be avoided in a Power Amplifier.

A suggested circuit for a trouble-free power amplifier is given in Fig. 12. Two tetrodes in push-pull are shown—if no suppressor grid exists, omit that part of

the wiring, whilst if triodes are used, omit the screen grid wiring.

Push-pull has many advantages, which show up particularly at the higher frequencies. The stray capacities—which include interelectrode capacities—are in series and therefore much reduced. The valve impedances load up the tuned circuit less and circulating currents in the tuned circuits are smaller.

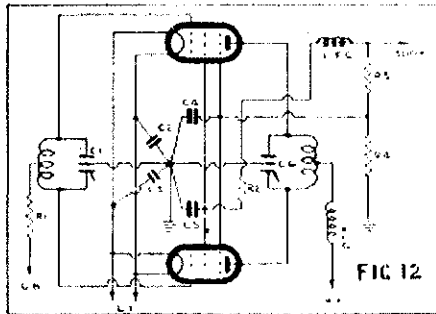
Probably the major advantage is the increased stability. As the frequency rises, the currents flowing through the various by-pass condensers increase and, at 28 Mc. for example, quite large currents would flow through C4 and C5, if only one valve was used. In the push-pull circuit, however, the currents set up by one valve are cancelled by those in opposite phase from the other and theoretically, no measureable current should be present, if the balance is perfect. The latter is, in practice, difficult to achieve but, nevertheless, stability is much enhanced.

The screen grids are fed from a source of correct voltage, rather than via a resistance of comparatively high value in series with the anode h.t. supply. An iron cored choke is shown in series, to permit normal anode modulation—the screen potential will automatically adjust itself.

The suppressor grids are generally rated to run positive and a suitable potential is applied from the network R3, R4. R4 should be kept small—not more than 1,000 ohms—as “grid” current is possible and will otherwise affect the operating conditions.

The by-pass condensers can all be 0.002 uF. mica type, as no high d.c. or r.f. potentials should exist.

It would be well to include a fixed condenser (0.0001 to 0.001 uF. high voltage) between the rotor of C6 and earth, to remove the high d.c. voltage across C6. At the same time, the rotor should be connected to the centre tap on the coil, via the usual type of r.f. choke.



Two separate valves are shown in Fig. 12 but even better balance can be achieved if the two valves are enclosed in one envelope, with an additional screen by-pass condenser fitted internally. Examples are the Mullard QVO4/20 and QVO7/40, with both of which, useful inputs and outputs can be realised, with moderate anode volts, over all amateur frequencies including 60 Mc.

If space permitted, there are many other subjects which could have been included, such as modern tendencies to-

wards bandswitching and the use of low Q circuits as means of simplifying the construction of multi-band transmitters. Others are safety factors, plugs and socketry (power and r.f.) metering, but they must be left for the present.

But just a few general hints to conclude:—

1. Use efficient coils everywhere—not necessarily heavy gauge wire but with spaced turns and proper ratio of diameter to length. Long narrow coils have low natural Q values.

2. Keep all heater or filament volts at or just above the rated value—efficiency and output fall off rapidly with reduced voltage and harm is also caused to the valve.

3. Tune up on low power—advice frequently given but rarely acted upon. This is particularly important in the case of pentode or tetrode valves.

4. Fit a meter permanently in the grid circuit of the power amplifier and monitor the operation of the transmitter by watching grid current. If the latter is incorrect, then trouble is developing somewhere.

RADIO WAR

Some interesting details of the Radio War between England and Germany appear in the N.S.W. Divisional Notes. We recommend your perusal.

FIFTY AND UP

It is regretted that notes received from Divisions for Fifty and Up have not appeared in print. They were forwarded to the person responsible for the compilation and were not returned in time.

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RESULTS OF VK DX CONTEST

E. H. JENKINS, VK3QK, CONTEST MANAGER

The W.I.A. 1947 DX Contest was an outstanding success and judging by the scores and number of logs entered, the best yet held. Most logs were accompanied by appreciative letters complimenting the W.I.A. on the organisation and publicity, although many overseas stations expressed disappointment at

the ZLs not being included as in pre-war Contests. We trust that ZLs may be with us in the future.

Conditions were good generally, rather favouring the c.w. section on the latter week-ends.

The phone entries were very disappointing however, and many stations

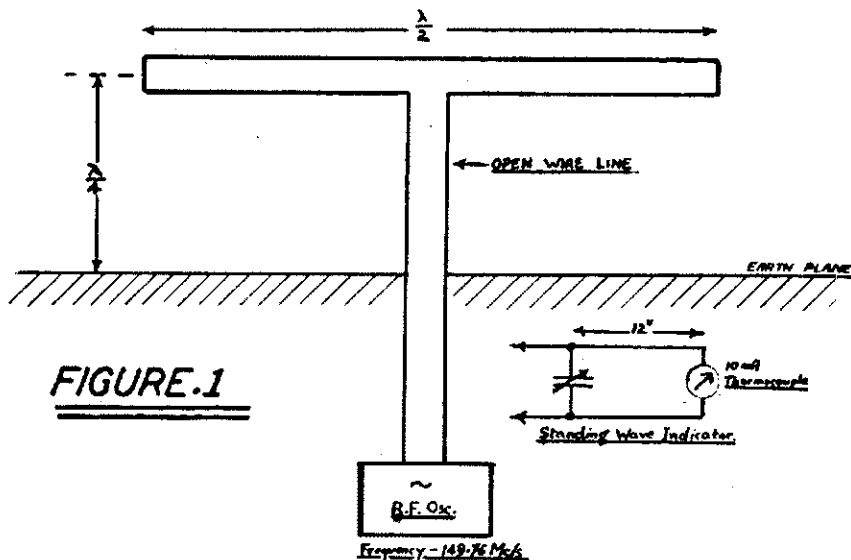


FIGURE.1

This is the illustration which should have accompanied the article, "Some Measurements of the Impedance Multiplication Factor of Folded Dipoles," by J. O'Shannassy, VK3YC, in the January issue.

who participated in the Contest did not even send in check-logs. Wouldn't the "big phone men" like to see their calls down low on the lists?

The Receiving Section was VERY poorly represented, only two scoring VK logs being entered. A couple of logs were also entered, but no attempt was made to calculate their scores, nor did they apparently read the rules correctly.

Heartiest congratulations must be given to VK2EO for his sensational score. It is a wonderful tribute to his operating (and endurance), and he must be definitely rated the top DX-man of the year. He had a total of 750 QSOs with a multiplier of 85 countries. He worked 58 countries on 14 Mc., 19 on 28 Mc., 3 on 27 Mc., and 5 on 7 Mc. The many countries worked would make the average Ham green with envy. Congrats, Dave, glad you enjoyed it so much and hope you will be in it next year.

VK2DG, using 80 watts to a half wave vertical, had a total of 472 QSOs and 76 countries on 14 Mc. The outstanding fact of his log was that it could not be faulted. Nice operating!

VK4AP contacted 32 countries on 28 Mc. and used 60-70 watts with stacked 8JK's on Europe and South America, and a folded di-pole on North America and South Africa.

VK6RU worked 42 countries on 28 Mc. in 150 QSOs, and 235 QSOs with a multiplier of 70 countries in the Open Section. A great performance on phone.

VK2ADT, also on phone, returned a splendid log, working 5 bands, but only entered the 28 Mc. section with 245 QSOs and 37 countries.

VK3IG on 14 Mc. phone had 245 QSOs and 37 countries to his credit; another great effort.

The most outstanding DX station was XE1A, who worked 5 bands c.w. having 227 QSOs and a multiplier of 20 VK districts. On phone, working 4 bands, he had 175 QSOs and a 16 multiplier. He used a 3 element rotary on 28 and 27 Mc., folded dipoles on the other bands with 750 watts input, phone and c.w. It was an excellent log and could not be faulted.

Most logs were clear and concise, although a few were quite the opposite. Many check logs were also received. Thanks a lot, chaps.

The W.I.A. thanks all entrants and manufacturers who donated the prizes for making the Contest the success it was, and hope you, and lots of others, will make the 1948 Contest an even bigger one.

AUSTRALIA C.W. SECTIONS

Open	
VK2EO	190,230
2ZC	97,773
2ANN	91,665
2RA	73,392
2YL	57,879
3XK	43,845
7LJ	40,764
3XQ	40,119
3HG	36,000
2YC	34,020
5KO	33,010
VK2GW	27,814
4RC	25,584
3PG	16,848
6RF	14,601
7LZ	12,528
2MT	10,425
5FM	9,951
5LD	6,150
3JA	5,700
3RJ	3,672
2HI	2,565
7AL	1,296

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28 Mc.			
VK4AP	23,808	VK3HT	9,504
2HO	20,358	2NY	9,225
2JX	19,932	2AHM	8,073
5LJ	12,180	2ANN	4,131
2GW	11,340	3XK	4,020
3PG	9,900		
14 Mc.			
VK2DG	107,616	VK3KB	8,346
2ZC	97,773	3JI	8,325
2AHA	91,465	3AJB	6,630
3CN	57,888	3YF	5,406
2QL	53,880	3FH	5,100
2NS	43,665	4RF	4,182
3MC	41,310	3LN	3,115
7LJ	40,764	3ADG	2,730
2ANN	40,672	2VG	2,688
5JS	35,340	5LU	2,688
3XU	26,076	5RL	2,025
5RX	25,623	7DS	1,353
3EK	21,216	2OA	870
3XK	20,280	3AT	720
7RK	15,390	3ARE	432
5DQ	10,764	2RB	324
4TY	10,281	3ACT	270
4DO	8,517		

7 Mc.			
VK3DQ	540	VK2ANN	336
2RA	432	3XB	198
3HG	360		

3.5 Mc.			
VK2RA	54	VK2ANN	6
3HG	48		

27 Mc.			
VK2ANN		27	

PHONE SECTIONS

Open			
VK6RU	49,350	VK3IG	27,195
6HL	34,182	2YL	6,324
6FL	32,088	3HG	2,550
2ADT	29,160		
28 Mc.			
VK2ADT	19,980	VK4HC	2,280
6RU	18,900	2NY	2,166
2FP	13,872	3QK	2,340
2AGD	13,248	5KL	1,890
5LC	7,050	2JX	1,320
2AHM	4,050	3BW	162
2RB	2,700	3VQ	135

14 Mc.			
VK3IG	27,195	VK2WD	2,475
3LN	10,440	2VG	24
4KS	9,984		

3.5 Mc.			
VK2RA		180	

RECEIVING SECTION

Eric W. Trebilcock	3,510
Maxwell W. Rieper	3,277

OVERSEAS

C1CH	975	Open	Phone
CIAN	48	Open	Phone
CE3AG	900	14 Mc.	C.W.
CE4AD	42	14	C.W.
CT1NT	3	14 Mc.	C.W.
EI4Q	375	14 Mc.	C.W.
F9DZ	30	14 Mc.	C.W.
G2FXQ	1,278	14	C.W.
G2FRW	684	14 Mc.	C.W.
G3BI	{ 2,457	Open	C.W.
	{ 1,476	14 Mc.	C.W.
G3AGM	300	28	Phone
G3SB	45	14	C.W.
G4RX	465	28	C.W.
G4LX	96	28	C.W.
G5SR	972	14	C.W.
G5RF	720	28	Phone
G5DF	480	Open	Phone
G5AX	345	14 Mc.	C.W.

G5MY	284	14	C.W.
	{ 4,875	Open	C.W.
G6CJ	1,242	14 Mc.	C.W.
	795	28	C.W.
	18	7	C.W.
G6GN	3,597	Open	C.W.
	{ 3,267	Open	C.W.
G6BQ	1,332	14 Mc.	C.W.
	375	28	C.W.
G6RB	1,560	Open	C.W.
G6XL	486	14 Mc.	C.W.
G6RC	150	14	C.W.
	{ 5,082	Open	C.W.
G8IG	1,800	14 Mc.	C.W.
	810	28	C.W.
G8IH	3,630	Open	C.W.
	{ 1,500	Open	C.W.
G8KP	480	14 Mc.	C.W.
	270	28	C.W.
	{ 1,428	Open	Phone
G8QX	780	28 Mc.	Phone
	96	14	Phone
	{ 1,290	Open	C.W.
G8QZ	640	14 Mc.	C.W.
	270	28	C.W.
	{ 1,053	Open	C.W.
G8RL	810	14 Mc.	C.W.
G8KG	450	14	C.W.
G8VV	36	Open	Phone
GM4UU	702	Open	C.W.
GM5IR	1,377	Open	C.W.
GM8SQ	2,286	14 Mc.	C.W.
GW3ZV	345	14	C.W.
GW4CX	60	Open	C.W.
HB9AW	300	28 Mc.	Phone
HK4CO	2,090	Open	C.W.
HMH	2,754	Open	C.W.
I6ZJ	738	14 Mc.	C.W.
J2AAY	5,508	Open	C.W.
KG6AL	2,210	Open	Phone
KG6AI	{ 2,210	14 Mc.	Phone
	1,782	14	C.W.
KH6BW	840	28	C.W.
KH6BI	660	Open	C.W.
KH6IJ	720	Open	C.W.
KL7MH	1,050	Open	C.W.
KP4KD	666	14 Mc.	C.W.
KZ5DX	240	28	C.W.
KZ5AW			

LA7Y	2,220	Open	C.W.
LX1SI	285	28 Mc.	Phone
MD1D	630	14	C.W.
NY4CM	{ 1,008	Open	C.W.
	12	14 Mc.	Phone
	{ 1,080	Open	C.W.
OH2NB	300	14 Mc.	C.W.
	288	28	C.W.
	420	Open	C.W.
OH2PK	36	14 Mc.	C.W.
OH2OB	1,530	Open	C.W.
OH3NB	1,380	Open	C.W.
OH5NF	45	14 Mc.	C.W.
OH5HM	132	14 Mc.	C.W.
OH6NZ	{ 1,026	Open	C.W.
OK1JB	36	Open	Phone
	350	Open	C.W.
ON4NC	225	Open	C.W.
OZ7EU	54	14 Mc.	C.W.
OZ7HM	{ 3,201	Open	C.W.
OZ9Q	1,152	14 Mc.	C.W.
	495	28	C.W.
	288	28 Mc.	Phone
OZ9Q	621	Open	Phone
	63	14 Mc.	Phone
PA000	{ 3,300	Open	C.W.
	96	28 Mc.	Phone
PA0RL	126	14	C.W.
PA0FB	96	Open	Phone
PK3MR	220	Open	Phone
PK4KS	936	14 Mc.	C.W.
PK4KD	108	Open	C.W.
SM5PA	240	Open	C.W.
SM5WL	9	14 Mc.	C.W.
SM5RF	3	28 Mc.	Phone
TG9JK	{ 195	14	C.W.
	108	14	Phone
VE1EA	936	14	C.W.
VE3GT	204	14	C.W.
VE3ADV	120	14	C.W.
VE3AFY	54	28	C.W.
VE4RO	1,440	Open	C.W.
VE5QZ	24	7 Mc.	C.W.
VE6BU	63	Open	C.W.
VE7ZM	3,024	Open	C.W.
VQ2GW	180	14 Mc.	C.W.
VR5PL	{ 3,840	14	C.W.
	324	14	Phone

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VU2BF	774	Open	Phone	2DS	192	14 "	8PQQ	1,386	14 "
VU2KM	63	28 Mc.	Phone	2UVE	180	Open	8EXI	954	14 "
VU7JU	36	28 Mc.	Phone	2EWT	81	7 Mc.	8SYC	882	14 "
XE1A	{ 13,620	Open	C.W.	2QQ	33	14 "	8MQR	882	14 "
	{ 8,400	Open	Phone	W3BES	9,516	Open	8LFE	574	14 "
XE1FE	540	28 Mc.	Phone	3GHD	2,772	14 Mc.	8DAE	546	Open
XZ2YT	744	28 "	Phone	3DKJ	1,848	14 "	8BSR	69	Open
YS1JR	36	14 "	C.W.	3LPE	1,548	14 "	8ZJO	360	14 "
ZE2JA	240	28 "	Phone	3FQB	1,350	14 "	8ZBC	204	Open
ZS2BU	621	Open	Phone	3FGB	1,134	14 "	8KPL	171	14 "
ZL1MB	2,682	14 Mc.	C.W.	3EIV	1,089	14 "	8QHV	288	Open
ZL1DV	2,190	Open	C.W.	3KAT	1,044	14 "	W9AEH	10,656	Open
	{ 2,160	Open	C.W.	3IXN	675	14 "	9VW	3,549	14 Mc.
	{ 832	28 Mc.	C.W.	3DRD	285	14 "	9NII	2,052	14 "
ZL1MR	{ 84	7 "	C.W.	3CTE	240	28 "	9RHP	1,332	14 "
	{ 330	28 "	Phone	3LMM	240	14 "	9PNE	1,512	14 "
	{ 330	Open	Phone	3ARK	60	14 "	9MZZ	540	14 "
ZL2MM	288	7 Mc.	C.W.	W4FIJ	2,935	Open	9ZQQ	345	14 "
ZS5U	{ 3,069	Open	C.W.		{ 1,764	14 "	8YIN/9	255	14 "
	{ 360	28 Mc.	Phone	4LIU	{ 81	28 Mc.	9FKC	165	14 "
ZS5HC	567	Open	C.W.	4KVB	{ 18	7 "	9HVM	30	14 "
ZS5BW	18	14 Mc.	C.W.	4TM	{ 1,449	14 "	9KYX	18	7 "
ZS6BJ	18	14 "	C.W.	4MR	{ 420	28 "			
	American C.W.			W5KC	2,499	14 "			
W0GKS	3,276	14 Mc.		5FNA	840	Open			
OMPW	1,215	Open		5JPC	180	14 Mc.			
0YCR	645	14 Mc.		W6HZT	11,475	Open			
0CTR	435	14 "		6PNO	5,362	Open			
0DAE	240	14 "		6HJE	1,800	Open			
W1RY	4,053	14 "		6DTY	1,470	Open			
10JM	1,494	14 "		6MHF	810	14 Mc.			
1BIH	390	14 "		6EJA	450	14 "			
1BOD	324	14 "		6VNH	435	28 "			
1CDX	132	14 "		6DQZ	216	14 "			
1BDU	108	14 "		6CEO	210	14 "			
W2BBK	2,430	14 "		W7JPY	1,716	Open			
2DKF	1,476	14 "		7JFU	384	28 Mc.			
2CVQ	1,215	Open		W8BHW	16,932	Open			
2IFA	954	14 "		8JIN	16,524	Open			
2ATE	864	14 "		8JIN	{ 16,524	Open			
2HAZ	522	14 "			{ 4,662	14 Mc.			
2EQS	414	14 "							
2LRG	195	14 "							

American Phone

W3BES	928	Open
3DKJ	540	14 Mc.
3FGB	96	14 "
3CTE	6	28 "
W4TM	1,260	14 "
W6VNH	204	28 "
6WCQ	72	28 "
W7JPY	360	Open
W8BHW	3,816	Open
W9NII	144	14 Mc.

Overseas Receiving

BRS-1535	4,323	Open
	{ 3,861	Open
BRS-15024	{ 1,638	14 Mc.
	{ 390	28 "
BRS-250	774	14 "
OE351	378	Open
OE059	345	14 Mc.

SUCH NICE PEOPLE

By "GREMLIN"

Bright New Year to you all. Better late than never but didn't catch on the month was only a week. Anyhow being time of year when all peoples chuck goodwill, peace and like things about, far be it from me to differ.

How did you like the 7 Mc. band over the holiday season, portables and all that? 2AWW with splash and distortion was about the worst portable I identified, but don't worry about it o.m., I could understand you which is more than I can say for quite a few. What beats me they seemed to be working somebody so I don't know.

Before I forget and 3XF gets a bead on me, humble bending of knee to you o.m. My remarks re clicks were intended for 2XF, sorry for mistake in print. (Hon. Ed., not your fault, I'll admit I was trying to use two fingers on the 'writer.)

And do I hear fairy footsteps? Faint ploddings of the fairy, King Nan, I guess. Which is funny sorta handle for a fairy, but maybe it got that way being next in line to a Jig Mike, or maybe it had something to do with being the big shot around where rivers flow bottoms up (no relation to sending a drop). Anyhow, no matter, a fairy by any name be she blonde or slightly moth chewed, is sweet. If my old cobbler Bill was still around he would probably dash off an ode to a disposal joint, something like,

Xmas has gone,
Stocks don't seem to fall,
Looks like the straight eight,
For the old three ball—we hope!

You may remember Bill, he was always chucking doublets and couplets together at his Avon QTH. Around about the time 2NO and 3UN went on the air!

Which has nothing at all to do with splashing from 3XD, 2ALO, 3IE, 3ADS, 4HG, 2AGM, 2AJX, 3DQ, 2ACD, 5CH, 3ANB, 3VB and 3LU. Hang on, that's not all, they get worse now. 2FH and 4FW add hum, and 3UE's 39 straight CQs. Dick (2ADW) yours is a mighty ooze out the high frequency side.

For distortion, I recommend 3SJ and 3AWW, with hum added by 3AKO and 3RL. 7AG's carrier has hot feet to make it even harder—I don't think it's meant to be f.m. 2ACU, 2TG and 5ZR just hum.

Clicks seem to be getting more prevalent the last couple of months. Plenty from 4DA, 3ANL, 7YY, 3FC, 3AH, 2ADE, 3AIG, 3WW, 3DN, 4VU, 3ZV, 7OM, 3IU, 3AKP, 3DQ and 3YF.

For a couple of really punk c.w. sigs you couldn't wish for better than 3TR and 3UB produce. They have everything T9X doesn't cover, with the operating standard on a par. I might even go as far as saying this 3TR hasn't paid the necessary quid. Funny thing I've noticed a few broadcasting station calls on our bands of late. Must buy me a new call book and look-see. Yep, don't rub it in, I know I growled about the

AN OPPORTUNITY TO WIN A "EDDYSTONE" RECEIVER

World Wide Competition of Interest to
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The Eddystone "640" Communications Receiver has been designed and produced by professional engineers, with long and extensive experience, and well versed in amateur radio technique. The "640" not only possesses a first-class electrical performance but is also a sound engineering job, built "to take it" in any climate.

The "640" is well known to British amateurs, many of whom are, with its aid, working more DX than ever before.

To obtain overseas publicity for the "640" Receiver, and to give overseas Radio Amateurs and Short Wave Listeners an opportunity of competing for one, the manufacturers of Eddystone Receivers have decided to present, free of charge, a new Eddystone "640" Receiver to the writer of the best article on one of the three following subjects:—

(i) How do you visualise the application of the new Micro-wave Channels shortly to be allocated to Radio Amateurs?

lack of an up-to-date list, now it's here I haven't got it—a poor show, what!

While we are on this operating standard business, what's all this whistling and blowing that goes on with some phone merchants? If it's cobwebs that worry you, switch off mike between blows, please. Funny thing it's these merchants who produce CQs by the dozen between call signs. Blokes like 3ANL, 3KF and 3ANB I refer to. They aren't the only ones, but a fair sample I guess. You know, I must be a patient sorta dope for I listened to 3ANB for five minutes on one occasion, five minutes of whistling, blowing and CQing before he let go a call sign. Did anybody come back? The answer is obvious.

3ANL, you sound like a young and eager sorta cove, obviously getting a kick out of this game. To you and any newcomer, may I offer a spot of advice? You get far more QSOs by listening, picking your mark and calling, than by endless CQing. Try it. I'm sure any old timer will agree with me there. I learnt the hard way and boy it's not hard to become disillusioned.

2ACS also prone to wander on with CQs and no call sign. Thirty about your best score o.m.

Should I run a line through 7YY in the "clicks parade" following his remarks in the January Mag? Now this isn't soft soap. If you wanta hear a swell fist listen to him. If you don't agree with his remarks I'm sorry for you.

V.F.O. user 2OJ watch out. Them things a bit hot at the moment—and rightly so in a lot of cases. Followed your carrier around the band and finally got you signing—once!

If it's a new year resolution you want, try skipping "HI" on phone—if you can't laugh, it's not funny is my guess.

(ii) It is evident that Band Planning will be essential if the most is to be made of the Amateur Bands. What proposals have you to make in this connection?

(iii) What are your views on the subject of the relative merits of British and American Communications Equipment? (We wish to make it clear that articles on this subject should be written without prejudice.)

Choose one of these—the one you feel you can write about easiest—and write an article about it, running to not more than 1,500 words. To the writer of the best essay, an Eddystone "640" Receiver will be presented FREE. When judging the work, points will be awarded not only on literary style but also on clarity, force of argument, constructiveness and other similar factors. All, therefore, have an equal chance.

The following have kindly consented to act as judges:—

Mr. John Clarricoats, General Secretary, R.S.G.B.

Mr. Austin Forsyth, O.B.E., Editor Short Wave Magazine.

Mr. Geoffrey Parr, M.I.E.E., Editor Electronic Engineering.

Competition Rules

1. Write an article of not more than 1,500 words on any one of the specified subjects.

2. All entries to be preferably typed or, alternatively, written in ink, on one side of the paper only, with wide margins.

3. Entrant's name, full address, and occupation to be clearly shown on each entry.

4. Entries to be posted in sealed envelopes, marked "Competition" in top left-hand corner, to Stratton & Co. Ltd., Eddystone Works, Alvechurch Road, Birmingham, 31, England.

5. Closing date for the Overseas Competition is 30th April, 1948.

6. The prizewinner will be notified by cable as soon as possible after the closing date.

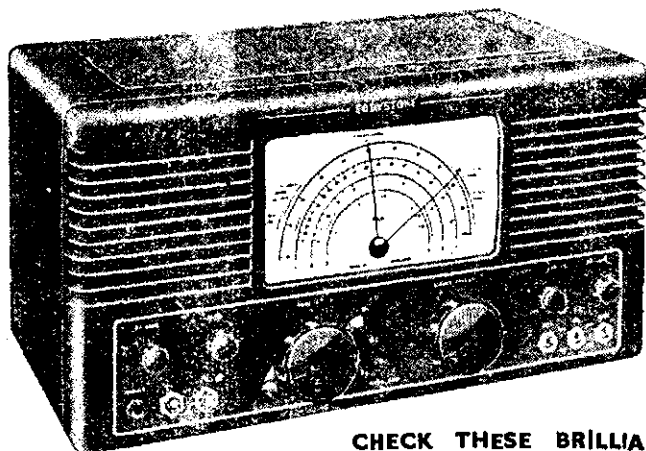
7. The copyright of all entries is reserved by Stratton & Co. Ltd.

8. Competitors must be resident outside the United Kingdom.

9. It is a condition of entry that the judges' decision is final and legally binding. No correspondence can be entered into on the subject of the Competition.

The Eddystone "640" Receiver has been specifically designed to fulfil the amateur enthusiast's needs for a really first-class Communications Receiver. It is a nine-valve superheterodyne with electrical bandwidth over the whole tuning range, the amateur bands being distinctively marked. Continuous tuning from 31 Mc. to 1.7 Mc. The circuit includes a triode hexode frequency changer preceded by a high gain low noise r.f. stage; two i.f. stages with crystal filter; combined detector, a.v.c., and first audio amplifier; noise limiter; b.f.o.; beam tetrode output valve, and rectifier. Efficient vacuum mounted 1.6 Mc. Crystal Filter; stand-by switch; provision for "S" meter. Steel cabinet is handsomely finished a fine Ripple Black.

THE "TOPS" in AMATEUR COMMUNICATION RECEIVERS



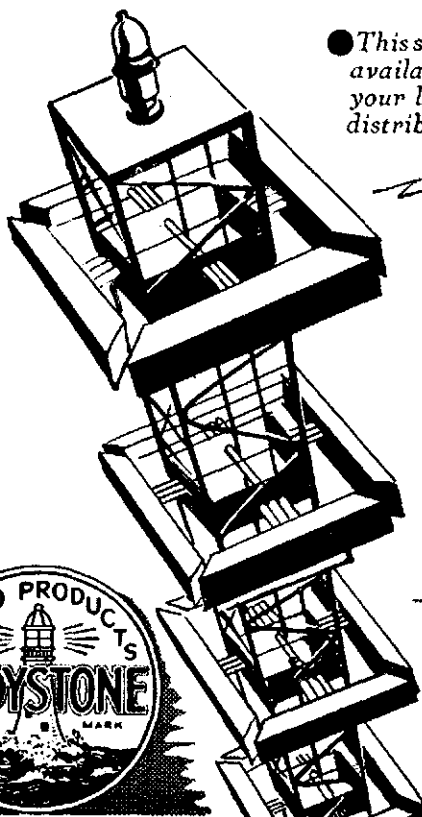
The EDDYSTONE "640"

— ACCLAIMED EVERYWHERE AS THE FINEST "HAM" SET YET DESIGNED!

CHECK THESE BRILLIANT FEATURES:—

1. Receiver has been designed primarily for Amateur Communication purposes, tuning range from 31 Mc/s to 1.7 Mc/s.
2. Designed to operate from Standard A.C. Mains with Inputs of 110 volts 200/240 volts, 40/60 cycles as well as from a 6 volt battery by the use of a separate vibrator unit.
3. Inclusive all valves, the "640" is a 9-valve job with one tuned RF stage, FC, two IF stages, detector-AVC-1st audio, 2nd audio output, noise limiter, BFO and rectifier. The valves used, in that order are EF39, 6K8, EF39, EF39, 6Q7, 6V6, EB34, EF39 and 6X5. These are all international octal based on the Mullard or Brimar versions and are therefore easily replaceable.
4. INPUT IMPEDANCE—400 ohms.
5. TUNING RANGE—
 - (1) 31 to 12.5 Mc/s.
 - (2) 12.5 to 5 Mc/s.
 - (3) 5 to 1.7 Mc/s.
6. TUNING. An electrical band-spread arrangement is used for this purpose. Fly-wheel control is utilised on the band-spread condenser drive. The scale is clearly marked with all amateur bands, and is so arranged to enable accurate re-setting to a spot frequency.
7. I.F. FREQUENCY—1600 Kc/s.
8. CRYSTAL FILTER is a vacuum mounted to provide a high degree of stability. Phasing control and "in/out" switch are brought out to the front panel.
9. Sensitivity is better than 2 microvolts input, for 50 milliwatts output, at all frequencies.
10. OUTPUT. Audio frequency output exceeds 3.5 watts.
11. "S" METER. A socket is provided for an external "S" Meter.

● This set is now available from your local... distributor.



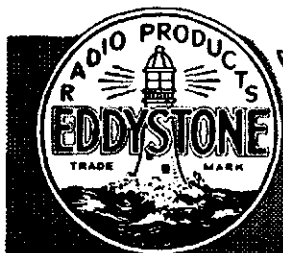
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B.E.R.U. CONTEST, 1948

GENERAL RULES

1. The event will be divided into three sections, namely:— (a) Senior (high power) Transmitting Section; (b) Junior (low power) Transmitting Section; (c) Receiving Section. The three sections will be run concurrently.

2. The Contest is open to all British subjects living within the British Empire and British Mandated Territories and to British Occupational Forces operating properly authorised stations, who are fully paid-up members of either the R.S.G.B. or one of the British Empire Societies. All entrants agree to be bound by the Rules of the Contest.

3. Entrants who are not members of the R.S.G.B. must certify in the declaration that they were fully paid-up members of their local society at the time of the Contest.

4. An entrant not located in one of the prescribed Prefix Zones shall be considered as being in the Prefix Zone nearest to his station.

5. Contacts with, or reports from, ships or unlicensed stations located in countries where licences are obtainable will not be permitted to count for points. The decision as to whether a station is to be classed as unlicensed will rest with the R.S.G.B. Contest Committee.

6. Only one person will be permitted to operate a specific station for the duration of the Contest.

7. A trophy will be awarded to the fully paid-up member of the R.S.G.B. scoring the highest number of points in each section of the Contest. Certificates of Merit will be awarded to the first three stations in each section and also to the leading station in each Prefix Zone, providing at least three entries have been received from the zone in question. In addition a second certificate will be awarded to each zone provided ten or more entries are received from that zone.

8. The declaration at the foot of the Entry Form must be signed by the operator, who will be recorded as the competitor.

9. Entrants must provide their own log sheets which, together with the analysis sheet, must be legibly written or typed as set out on the next page. Incomplete entries will be disqualified.

10. All entries must be posted within seven days of the close of the Contest. No entry will be accepted at R.S.G.B. Headquarters, New Ruskin House, Little Russell Street, London, W.C.1, later than 14th June, 1948.

11. The judging of entries will be carried out by the R.S.G.B. Contest Committee. The President's decision will be final in all cases of dispute.

12. No correspondence can be entered into regarding any decision made by the President or Council.

13. The Contest will extend from 0001 GMT, Saturday, 3rd April, 1948, to 2359 GMT, Sunday, 4th April, 1948, and from 0001 GMT Saturday, 17th April, 1948,

to 2359 GMT, Sunday, 18th April, 1948.

14. Contest operation during local hours of restrictions in the use of electricity for wireless which have been publicly announced is forbidden. The duration of any such restrictions will be recorded on the entry form.

RULES FOR THE TRANSMITTING SECTIONS

1. Fifteen points will be scored for the first contact on a specific band with a British Empire station located in any Prefix Zone outside the competitor's own zone. Fourteen points will be scored for the second contact on the same band with the same zone, thirteen points for the third contact, and so on to the fifteenth contact, which contact will score one point. All contacts with that particular zone on that band thereafter will count one point each. This scoring procedure will be repeated on each band to encourage multi-band operation.

2. Only one contact with a specific station may be made on each band during the Contest.

3. The Contest is open for two-way c.w. contacts only on any amateur frequency band, providing the input to the valve or valves delivering power to the aerial is not in excess of that specified on the competitor's licence and in no case more than 150 watts in the Senior (high power) Section and 25 watts in the Junior (low power) Section, and providing the entrant has permission to operate his station on the band or bands in question.

4. The conditions laid down in the entrant's transmitting licence shall be observed.

5. A serial number consisting of six figures must be exchanged before points may be claimed. The serial number is made up of RST and three numerals denoting the number of the contact, the first contact being 001, and so on.

6. Entrants receiving consistent tone reports of less than T8 will be disqualified.

7. Specially appointed Band Monitoring Stations under the auspices of the R.S.G.B. will be active during the Contest. Any station reported off frequency by these checking stations will be disqualified without appeal.

RULES FOR THE RECEIVING SECTION

1. One point will be scored for each British Empire c.w. station heard working another British Empire c.w. station, providing the station heard is located outside the competitor's Prefix Zone. An additional 50 points will be scored for each Prefix Zone heard on each band (i.e. 51 points will be scored for the first station heard in a particular zone and one point for each subsequent station heard in the same Prefix Zone on the same band). This scoring procedure

will be repeated on each band to encourage multi-band reception.

2. Before a point can be claimed, the following information must be logged:— (a) call of station heard; (b) call of station being worked; (c) entrant's report on the signals of the station heard (RST); (d) the Serial Number given by the station heard to the station being worked.

3. CQ and Test calls will not count for points.

4. The same station may only be logged once on each band during the two week-ends of the Contest.

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FORMAT OF THE B.E.R.U. ENTRY FORM

B.E.R.U. Contest, 1948 Section
 Name (Block Letters) Call Sign
 Address
 Transmitter
 Input Power to last valve(s)
 Receiver
 Aerial Systems used

Date (1)	G.M.T. Contact Estab- lished (2)	Band Used Mc. (3)	Callsign of Station Worked (4)	Serial Numbers		Points Claimed (7)
				Sent (5)	Rev'd. (6)	
				...001		
				...002		
				etc.		

TOTAL

DECLARATION:—

I hereby certify that my station was operated strictly in accordance with the rules and spirit of this Contest, and I agree that the decision of the President of R.S.G.B. shall be final in all cases of dispute.

Date Signed

If an entrant is a non-member of the R.S.G.B., he must sign the following additional Declaration:—

I hereby certify that at the time of the Contest I was a fully paid-up member of

Date Signed

PREFIX ZONE CHART AND SPECIMEN SCORE ANALYSIS SHEET

Prefix-Zone	... Mc.		... Mc.		... Mc.	
	Contacts	Points	Contacts	Points	Contacts	Points
D2, EI, G, GC, GD,						
GI, GM, GW						
J4, VS6						
MB9, SVO, X,						
MD1, 2, ZB1, 2						
MD3, 5, ST, VQ6 (MD4)						
MD6, VS9, VU7 (VS8)						
VE1						
VE2						
VE3, 4						
VE5, 6						
VE7, 8						
VK2, 3, 7						
VK4, 9						
VK5, 6, ZC2, 3						
VO1, 2, 3, 4, 5, 6						
VP1, 5, 7, 9						
VP2, 3, 4, 6						
VPS						
VQ1, 3, 4, 5, ZD8						
VQ2, ZE						
VQ8, 9						
VR1, 2, 3, 4, 5, 6						
ZK1, 2, ZM						
VS1, 2, 4, 5						
VS7						
VU2						
VU5, XZ2						
ZC4 (MD7), ZC6						
ZD3, 2, 3, 4, 8, 9						
ZL1, 2, 3, 4						
ZS1, 2, 3						
ZS4, 5, 6						
TOTALS						

NOTE.—Some of the above prefixes may be out of date at the time of the Contest.

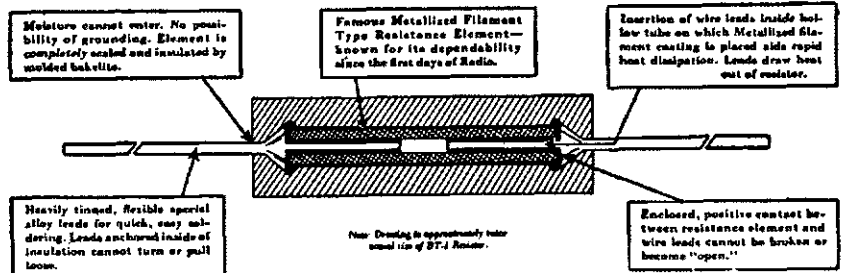
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RECEIVING CONTEST

The entry form for this Contest should be prepared on the lines set out above with the following amendments:—

Column 2: GMT station heard.

Column 4: Station heard.

Column 5: Entrant's report on station heard.

Insert new Column: Station being worked.

Column 6: Serial number given by station heard to station being worked.

MAKE SURE YOU HAVE READ THE RULES CAREFULLY AND DO NOT FORGET TO SIGN THE DECLARATION AT THE FOOT OF THE FORM. SUGGESTIONS FOR FUTURE CONTESTS ARE INVITED.

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THIS COULD HAPPEN TO YOU

By LEITH COTTON*, VK5LG

The following is a copy of a recent newspaper cutting:—
“The recent sad fatality where Mr. L. S. Cotton, a prominent Radio Experimenter, was accidentally electrocuted at his home last week only proves how dangerous electricity is—the sad part about this case was that Mrs. Cotton, seeing her husband lying dead, caught hold of him and was also killed. Cotton, who operated VK5LG was carrying out experiments with other Hams and did not switch off his gear while making alterations, thus at a blow a whole family was wiped out.”

This is a fictitious cutting, but read on:—

Sad aint it, mate, but it could and can happen to you or me—I very nearly clicked. I caught hold of the wrong lead and the earthed shielded cable from my pre-amp was resting on my neck. I collected 750 volts a.c. and am lucky I was thrown 10 feet. I might have been lowered 6 feet—into a hole.

Brother Ham, perhaps you were still wet behind the ears when Ross Hull (A5JU) was going, but he, to a great extent, re-organised Ham Radio and made the game like it is today. Ross preached “safety first” as a member of A.R.R.L. staff, but he got his from a television receiver.

Look through the records, dozens of Hams have been injured or killed by the bite from the rig—far too numerous to name individually. Every day we read of somebody in all walks of life dying of electrocution, yet we still go on mucking about with our own little deathtraps.

Friend Ham remember this, “Death is permanent, electricity helps make it so.”

I will refrain from telling you how to place fuses and switches but brother, before you do anything at all on that rig of yours, see all switches are OFF, all circuits are dead, all condensers are discharged.

Does your wife, your son or daughter, your mother, your father, your friends know where the main switch is placed? Can they reach them in a hurry? Ten seconds is enough in boxing or sparks. Do they know what to do should they come and find you hunched up across some wires, etc?

Do you know what to do if you walk into a pal's shack and find him in such a condition? Learn my friend, learn—take your relatives or pals, show them the lay-out AND ALL SWITCHES. Explain to them and if you do not know artificial resuscitation, LEARN IT PRONTO. The Schafer method is simple and easy to learn and memorise, and if in its use you only save one life, it is time well spent.

Any person versed in ambulance work or a St. John Ambulance member

* 317 Cross Rds., Clarence Gardens, S.A.

will be only too pleased to demonstrate to you and instruct you.

Remember employeess of power companies or trusts are not allowed to work on even 240 lines unless a mate stands by. Yet you are playing with 500, 600, and 1,000 volts all on your pat, risky? Yes, but with simple precautions, not so risky, and the precautions are your own personal pigeon.

I'm lucky, I was careless but I live to tell about it. Perhaps I was spared to preach the gospel of safety first to others; perhaps the resistance of my body was greater than the current expected; perhaps “Someone up above” reached His hand for the big switch and then stayed it, for what reason I may never know; perhaps, perhaps, perhaps.

Now when I want to change coils, leads or what have you, I put off all switches and go collect the fuses before the gear gets even examined. Yeah, in my trade, structural steel boilermaker, I have often to climb great heights into awkward places and early I learned that climbing is played for keeps. There are no second chances for the careless; the earth is as hard at 20 feet as it is at 100. Remember the power supplies of your gear at home, or even portable, plays keeps also and so don't give it even a first chance. Fellow Hams remember Ross Hull, Phil Murray and others and be careful; have good earths right leads and patience enough to go for that switch. A LIVE VIOLET IS BETTER THAN A DEAD ORCHID, so 73 and c.u.l. from “Five Little Girls” in South Australia.

Browsing around recently I read this: “The Radio Amateur regards his position with a great deal of pride. He has obtained his licence by learning many necessary facts about radio and by learning the International Morse Code well enough to send and receive messages at the prescribed rate, or better. An examination is held to determine the fitness of the applicant. Applicants passing the examination are granted an operator's licence. This licence, which may be revoked for violations of regulations, is zealously guarded by the holder as his certificate of membership in the fraternity of Amateur Radio Operators.” I think it is worth repeating—AND THINKING ABOUT during 1948.

FEDERAL NOTES

Federal Secretary: W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

DX C.C. RULES

Due to several anomalies which have arisen over the checking of confirmations by Divisional Officers so appointed under Rule 12, Federal Executive have decided to appoint an Award Committee to check all cards from claimants, in order that central records may be kept and so obviate future difficulties. The Committee will consist of the Federal QSL Manager, the Federal Traffic Manager and the Federal Secretary. All claimants for the Award should now send their cards for checking to the Federal Executive, Box 2611W, Melbourne. The amended rules will be published in next month's "A.R." and all applicants must be certain that it is clearly stated on their list whether the contacts are for c.w. or phone.

CERTIFICATES

Federal Executive have in hand the printing of certificates for various Contests and Awards. A new Membership Certificate is also being printed, which will be issued to all members of the W.I.A. of all grades, and endorsed accordingly. This Certificate will fill a much-needed want, and from a preview, is an attractive one that will honor the wall of any Ham's shack. The W.A.S. and DX C.C. Certificates are also off the press, and are well worth striving to obtain. Sufficient stocks of the various Certificates will be on hand to last for several years.

CONVENTION

It has been agreed to hold the 1948 Federal Convention in Melbourne on the 28th, 27th and 29th March. All members should contact their Divisional Councils with items to be included on the Agenda for the Convention, as early as possible. The due date for Agenda items to be in the hands of Federal Executive is the 14th February, so make sure you air any grouches before then.

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

VK2AJB—G. C. Curle	Unknown
VK3DQ—J. D. Morris	A.M.F.
VK3HN—J. McCandlish	A.M.F.
VK3IE—J. E. Mann	R.A.N.
VK3NG—N. E. Gunter	M.N.
VK3OR—M. D. Orr	R.A.A.F.
VK3OW—G. L. Templeton	R.A.A.F.
VK3PL—J. L. Colthrup	R.A.A.F.
VK3PV—R. P. Veall	A.M.F.
VK3SF—S. W. Jones	A.M.F.
VK3UW—J. A. Burrage	R.A.A.F.
VK3VE—J. E. Snaddon	R.A.A.F.
VK4DR—D. Laws	A.M.F.
VK4PR—R. Allen	R.A.A.F.
VK5AF—C. A. Ives	R.A.A.F.
VK5GP—G. Phillips	A.M.F.
VK5 ?—J. Mann	R.A.N.
VK6GR—A. H. G. Rippen	R.A.N.
VK6JG—J. E. Goddard	R.A.A.F.
VK6KS—K. Anderson	A.M.F.
VK7LP—L. P. Hyland	A.R.P.

The above names and details have been received by Federal Executive.

Anyone knowing of any name not included on the above list or errors therein should communicate with F.E. at the earliest.

MD5BU's SHORT VISIT

Early in December, just after the January issue went to press, we had a telephone call from Major Ian McAnsh MD5BU who is located in the Suez Canal Zone, Egypt. MD5BU was on his way to ZL which is his home country where his father operates under the call of ZL4IC.

Unfortunately Major Ansh had only 24 hours in Melbourne, but some very interesting information was obtained over the telephone.

MD5BU is associated with MD5KW, ex-G5KW and is operating on 50 Mc. (in fact a spot frequency of 50 Mc.), with a 4 element rotary beam, beamed on VK and ZL between 3 and 5 p.m. Melbourne time. An auto head is used to send at varying speeds between 5 and 25 w.p.m., and will reply on 28 Mc. Should anyone hear these signals, reports can be forwarded via G5BY or G6DH.

Some interesting contacts made by MD5KW on 50 Mc. are two way contacts from the Canal Zone with G5BY, PA0UN, ZS1IT and VQ3.

Some may be wondering about the MD call signs and for those unaware of their origin the following information should clear up their doubts.

The MD call signs are issued only to the British Army, to Forces' Amateur Stations only in areas occupied by the Services.

- MD1—Cyrenica.
- MD2—Tripolitania.
- MD3—Eritea.
- MD4—Somaliland.
- MD5—Suez Canal Zone, Egypt.
- MD6—Irak.
- MD7—Cypres.

In ZC6, Palestine, the only licenced Amateurs are those in the Forces and having the suffix J or N, others are not officially licenced.

MD5BU also operated under the call of XABU, Rhodes, Dodecanese Islands, and would very much appreciate cards from those VKs he worked and have not yet QSLled. He expects to be back in Egypt in about three months' time and will again be active as MD5BU.

CHANGES IN CALL SIGNS, ETC.

ALTERATIONS

- VK2ACP—W. J. Zech, "Grand View," Cliff Drive, Katoomba, N.S.W.
- VK2ADQ—E. J. Dark, 133 Burns Bay Rd., Lane Cove.
- VK2AFB—F. C. Barron, Unit 169B, c/o R.A.A.F. P.O. Lindfield.
- VK2AGI (in lieu VK3GH)—R. K. Phillips, 21 Mornben Rd., Mosman.
- VK2AIS—J. F. Graydon, 60 Fiddens Wharf Rd., Killara.
- VK2AJC—B. J. Eve, 57 Douglas St., Stanmore.
- VK2AMO—R. B. Lloyd, McBride Ave., Hunter's Hill.
- VK2DM—D. I. Johnson, Flat 9, "Glonica," 37 Glen St., Milson's Point.

- VK2EF—J. F. Small, "Kobada," Terrimont Rd., Warramoo.
- VK2EL—S. Bourke, 2 Collingwood Ave., Earlwood.
- VK2FZ—F. M. Stean, Lot 33, Wentworth Rd., Lakemba.
- VK2GS—G. P. Edwards, 53 Denman Ave., Wiley Park.
- VK2IU—M. J. McDonald, Ferguson's Radio, 12 McMahon's St., Willoughby.
- VK2JD—J. Davis, Egerton St., Lidcombe.
- VK2MJ—A. J. T. Crisp, 69 Silver St., Marrickville.
- VK2QB (in lieu of VK2ASD)—S. T. Clark, 57 Jeffery St., Canterbury.
- VK2UD—R. W. Archer, 9 Fulbourne Ave., Pennant Hills.
- VK2UG (in lieu VK5MM)—J. H. W. White, 115 Stewart Ave., Hamilton, Newcastle.
- VK2YA—R. C. Black, 29 Kurrarong St., Sutherland.
- VK2YD—W. S. B. Pettitt, 101 Davidson Ave., Nth. Strathfield.
- VK3APR (in lieu VK2AP)—A. P. Reynolds, R.A.A.F. Station, Ballarat, Vic.
- VK3BD—E. B. Ferguson, 171 George St., East Melbourne.
- VK3DA—G. M. Trythall, 115 Kooyong Rd., Caulfield.
- VK3ED—D. O. Jones, 247 Napier St., Nth. Essendon.
- VK3HM—J. Holschier, 88 Egan St., Richmond.
- VK3KP—D. R. Ayre, 65 Kenmare St., Box Hill.
- VK3LW—R. L. Cranch, 107 Green St., Richmond.
- VK3MB—R. J. Bell, Paul St., Cheltenham.
- VK3MI—R. H. Cunningham, Bruarong Ave., Frankston.
- VK3OS—C. A. Rowles, 35 Charwood Rd., East St. Kilda.
- VK3PO—P. A. Orchard, 8 The Esplanade, St. Kilda.
- VK3KQ—E. H. Jenkins, Churchill Island, via Newhaven.
- VK3RC and VK3ARD—R. J. Biddle, 4 Thackeray Street, North Balwyn.
- VK3RQ (in lieu VK4MQ)—M. R. Quick, 500 Dryburgh St., North Melbourne.
- VK3RW—R. P. White, 35 Faircroft Ave., Hawthorn.
- VK3ZS—G. M. Hull, 22 Dryden St., Canterbury.
- VK4BQ (in lieu VK9BW)—W. H. Holland, c/o Mrs. S. Stewart, P.O. Box 29, Mundubbers, Queensland.
- VK4CG—C. H. Y. Gold, 20 Curzon St., Range, Toowoomba.
- VK4FH—J. F. Bull, 27 Glen Park St., Nth. Mackay.
- VK4LP (in lieu VK2YQ)—L. N. Page, 16 Terrace St., Paddington.
- VK5AB—S. D. Morris, c/o Dept. Civil Aviation, Katherine, N.T.
- VK5BD—D. R. Briggs, Jarvis St., South Plympton.
- VK5BS (in lieu VK2ADR)—B. S. Clarke, "Warrandyte," Karong Ave., Mirreem, via Edwardstown.
- VK5GM—A. R. Anderson, 68 Canterbury Ave., Payneham South.
- VK5RH—R. G. Haskard, 194 Anzac Highway, Plympton.
- VK6GJ—J. M. Gibson, c/o Station 6WA, Minding, via Wagin, W.A.
- VK6WG—W. W. Green, Pensioner Rd., Albany.
- VK9YT—Rev. C. J. Zimmer, Lamasong, P.O. Kavieng, T.P.N.G.

CANCELLATIONS

- VK2AGP—F. M. Leyden, 7 Albert Pde., Ashfield.
- VK2AMH—F. J. Carey, 35 Ridge St., Nth. Sydney.
- VK2ANE—E. Sherlock, S.S. "Chertsey," c/o Ghchrist, O'Connell St., Sydney.
- VK2ANL—A. D. Boyle, 29 Blich St., Sydney.
- VK2ANO—J. A. Hunt, 13 Oxford St., Burwood.
- VK2ANP—W. F. Brown, Bundeena.
- VK2DR—E. J. Clunne, 35 Brunswick St., Merrylands.
- VK2LS—G. W. Lanyon, 32 Clarence St., Campsie.
- VK2YL—J. T. Nutman, 26 Bonnefin Rd., Hunter's Hill.
- VK2XH—W. C. H. Haynes, 19 Jarvie Ave., Petersham.
- VK3ATH—C. R. Matheson, 33 Elm Gve., North Essendon.
- VK3FX—J. K. McCarthy, "Brentwood," 420 St. Kilda Rd., Melbourne.
- VK3WC—C. W. Welsh, Flat 9, Victoria Court, Victoria Ave., Albert Park.
- VK5AL—A. D. Lum, 39 Esmond St., Hyde Park.
- VK5JJ—J. C. Jennison, 4 Ross St., Black Forrest.
- VK7MF—Dr. K. M. Kelly, 174 Macquarie St., Hobart.

NEW ISSUES

- VK2ADG—F. Avent, 1 Dittawan Gardens, Reid, Canberra, A.C.T.
- VK2AHP—K. J. B. Pickett, 12 Crane St., Homebush, N.S.W.
- VK2AIM—J. M. Agar, 5 Rawson St., Rockdale.
- VK2AJN—J. B. Jarman, 83 Kent St., West Sydney.
- VK2AJR—M. L. T. Rudder, 5 Moss St., West Ryde.
- VK2AMG—D. M. Finn, 68 Augustus St., Leichhardt.
- VK2ARG—R. C. Godsall, Pacific Rd., Palm Beach.

VK2ART—R. Hodgins, S.S. "Echunga," c/o. Interstate Steamships Pty. Ltd., Wall St., Newcastle.

VK2AWC—W. J. Cromie, 99 Oyster Bay Rd., Oyster Bay.

VK2AWI—A. W. Dever, 67 Giebe Rd., Merewether, Newcastle.

VK2AZO—C. H. Thornthwaite, 48 Consett St., Concord West.

VK2M—Mrs. J. A. Millen, 22 Hume St., Wollstonecraft.

VK2NX—I. R. Cameron, 24 Elizabeth St., Mayfield.

VK2PG—J. H. Gore, 12 Pearl St., Newtown.

VK2PI—W. L. Pitts, Olive St., Seven Hills (Portable S.S. "Iron Baron").

VK2PY—B. Porteous, 14 Barry St., Clovelly.

VK2RE—R. W. Edwards, 15 Hinkler St., Brighton Le Sands.

VK2RY—I. L. Brown, 7 Day St., Drummoyn.

VK2SE—W. A. Stirling, 9 Vere St., Corowa.

VK2SW—S. R. Ward, 106 Bassett St., Hurstville.

VK2TS—T. G. McEwan, S.S. "Nankin," c/o. E. & A. Steamship Co., Collins St., Melbourne.

VK2WM—J. E. Parris, 8 Welcome St., Parkes.

VK2ACE—C. Case, Cumming Ave., Birchip.

VK2AEP—A. E. Fisher, 8 Grange Ave., Canterbury.

VK2AEP—E. O. Phillips, Blackadder Mains, Longwarry.

VK2AGV—G. S. Vincent, 41 Skene St., Colac.

VK2AKN—H. Khumar, Portable of VK3KN within 50 miles of Melbourne.

VK2ANC—N. H. M. Chapman, Whitton St., Trafalgar.

VK2AOB—E. F. O'Brien, 21 Swallow St., Shepparton.

VK2APF—P. Pawcett, 138 Welsford St., Shepparton.

VK2APG—P. J. Grigg, 3 Philip St., Geelong E.

VK2AQL—C. W. Harwood, "Rosebank," South Kyneton.

VK2ARM—R. J. Mitchell, "Coolatoo," Serviceton North.

VK2ARV—R. G. Henderson, 18 Madden Gve., Burnley.

VK2AWN—W. N. Newham, 258 Barker St., Castlemaine.

VK2MB—E. M. Chaffer, c/o. Station 3BA, Ballarat.

VK2SV—N. B. Voller, Flat 3, 9 Yarra St., Hawthorn.

VK2T—W. H. Ross, Ballangeich, via Warrnambool.

VK2YA—W. B. Bridges, 111 Lexton St., Ballarat.

VK2YY—N. S. Smith, 11 Durham Rd., Surrey Hills.

VK2ZD—R. A. Williams, 45 Banool Rd., Balwyn.

VK2HE—H. Clayton, Mt. Perry Rd., Nth. Bundaberg.

VK2HF—H. A. L. Fitzalan, Roseleigh St., Kalinga.

VK2HJ—H. J. Champion, 9 Donaldson St., Mackay.

VK2JR—J. R. Rintoul, "Rose Knoll," Windsor Ave., Lutwyche.

VK2KP—N. J. Mitchell, 33 Blackmoor St., Windsor.

VK2NC—C. O'Brien, Jardine St., Stafford.

VK2RL—R. L. Gulbransen, Thynne St., Morningside.

VK2RW—A. W. H. Wright, 539 Marion Rd., Sth. Plympton.

VK2SB—E. F. Brandon, 76 Gloucester St., Prospect.

VK2VM—L. Muller, Mitchell St., Crystal Brook.

VK2WL—W. L. John, 18 Brown St., Norwood.

VK2XX—R. d'E. Minchin, 9 Lanton Cres., Woodville West.

VK2SN—A. W. Sowden, 1201 Hay St., West Perth.

VK2XF—F. R. Whitefield, Kojonup Rd., Katanning.

VK2AK—S. W. Carter, Lewis St., Longford.

VK2DB—D. C. Brooks, 32 Albion St., Launceston.

VK2LT—L. E. Templeman, 13 West Tamar Rd., Trevallyn, Launceston.

VK2PK—P. W. King, Macquarie Island (Antarctic Expedition).

VK2S—S. J. Excell, Derwent Ave., Lindisfarne.

VK2BI—A. G. Wilkey, Murray Barracks, Three Mile Port Moresby, T.P.N.G.

VK2D—D. A. Cameron, c/o. R.T.C., Lae, T.P.N.G.

VK2JP—J. F. Pert, Aeradio Station, Lae, T.P.N.G.

FEDERAL QSL BUREAU

Ray Jones, VK3RJ, Manager

An interesting QSL to hand this month is from UA3CA, the call sign of the Aero Radio Club, Moscow, and the card displays a balloon under which is the photograph of three of the operators. The wording on the card indicates that QSOs with UA3CA are made when the balloon is "In the air above Moscow."

At 2030 EST on 7th December the writer heard ZL1JM calling "CQ Melbourne." On investigation, the ZL told me he urgently desired to contact J4AAM who at the moment was QSOing VK3JW on phone. Could I get VK3JW to tell the J to listen on 14012 Kc. for c.w.? A phone call to VK3JW elicited the information that he had signed off

with the J, who was now in QSO with VK3YH. VK3JW offered to and did but in on VK3YH's frequency and passed on the message to the J4 who however could not listen on the specified frequency because of commercial interference. He however detailed a nearby J station to deputise for him and the desired contact was made within 30 minutes of the original request for QSP. Neat work by all concerned.

The Federal QSL Manager will be on annual leave from January 1 to 23 inclusive and mail during that period will be subject to some delay. The month of December, 1947, almost eclipsed the all-time record for cards handled—backwash from the VK International Contest and yours truly feels in need of the vacation. Fervent prayers for lots and lots of rain during December having been answered—50 Mc. enthusiasts please thank me—writer intends spending portion of the vacation period solo in the hills courting the elusive yellow metal and hoping to help Ben Chiffley solve the dollar problem. Where? Ah, that would be telling, but far away from QSLs and CQs.

From W2CC comes the news that Marj Hutchings, ex-VK3HQ, and now of the occupation forces in Japan, became on October 22 the wife of F/Sgt. Williamson. Congrats Flight on your good fortune and to you also Marj.

Dud Charman, G6CJ, in acknowledging a private food parcel, gives an insight into some of the many problems confronting the R.S.G.B. at present. R.S.G.B. has nearly 20,000 members and assets held total £1 per member. Restrictions limit the size of the T and R Bulletin to 20 pages monthly, a brand spanking new 1 Kw. Xmitter for its HQ station is idle for the want of a house and someone to operate it! After sampling the air congestion in London for some years, Dud again appreciates the comparative quiet of Stoke Poges.

My SOS for an English translation of a Spanish letter met with a prompt and ready response from VK2VS of Canberra. Many thanks Amigo.

Writer has had the Rx on 50 Mc. for many months and listens extensively on that band with the aid of a dipole and hears all that is going. The absence of c.w. on the band precludes him putting a Tx to work but the dulcet tones and windy verbosity of many of the addicts of the band provides a nice obligato to the shuffling of QSL cards when sorting same.

Best wishes for 1948, is my concluding thought, to all readers and especially to my State QSL colleagues. Many thanks for your co-operation during the past year. This management of a QSL Bureau is a gripping pursuit. VK5RX has devoted approximately 16 years to it, Jimmy Corbin VK2YC the same length of time and the writer a similar period. We all still enjoy a nice card (of normal size).

Please, please, will someone tell me where to dispose of VK1 cards? It looks a little fishy to me as of all cards held for VK1 none are for contacts with English speaking countries.

NOTICE

The Magazine Committee is desirous of obtaining for publication station descriptions and a photograph of the gear suitable for reproduction.

The Committee also request all Correspondents to see that their notes are received by the Editor on or before 15th of each month. Copy arriving after this date will NOT be considered for publication.

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AROUND THE DIVISIONS



NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1784, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Streets, Sydney.

Divisional Sub-Editor.—R. Deal, 209 Oberon St., Coogee.

Zone Correspondents.—Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, Canonba St., Nyngan; South Coast and Tablelands: L. H. Vale, VK2ANN, Box 73, Bega; Southern: E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury.

VICTORIA

Secretary.—A. B. D. Evans, VK3VQ, Box 2411W, G.P.O., Melbourne, Telephone: FJ 6997.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—North Western: B. R. Mami, VK3BM, Quambatook; Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: B. Sactrine, VK3BI, 17a Raglan Street North, Ballarat; North Eastern: D. Tacey, VK3DW, 18 Harold St., Shepparton.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7168 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

From VK6WH.—Sundays, 0930 hours WAST on 7168 Kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—R. Thorley, VK4RT, Box 633J, G.P.O., Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor.—H. T. MacGregor, VK4ZU, "Moquet," Eldon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1284K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, Howard St., Perth.

Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—R. W. S. Hugo, VK6KW, 8 View St., Subiaco.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 183 Liverpool St., Hobart.

Divisional Sub-Editor.—W. W. Watson, VK7YY, 12 Crownwell St., Battery Point, Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

NEW SOUTH WALES

News from this Division has been notable by its absence during the last couple of issues of "Amateur Radio." This has been due mainly to the changes that have taken place in regard to the persons and duties of Secretary of the Division. Peter Adams has at last been relieved of the position. Wal Nye (2XU) is now N.S.W. Secretary. Don Reid (2DR) has resigned from the position of Treasurer, and Brian Anderson (2AND) has taken control of the purse. At the November meeting motions of appreciation of the good work done by Peter Adams and Don Reid were carried in the usual manner.

A Divisional Sub-Editor for "Amateur Radio" has been appointed, in the person of Russ Deal, an Associate Member who is struggling hard to get on the air. Articles, notes, etc., for publication in "A.R." are urgently wanted. It is not necessary that such articles be written in a finished style—just the rough notes will be enough. Details of modifications to ex-Service gear are of special interest at the present time, in view of the amount of gear made available by Disposals. Details of gear designed and built by Hams will also hold much interest for readers; "Personal Pars" are welcome too. So send along your contributions fellows, no matter how simple they may seem to you. The address is R. Deal, 209 Oberon St., Coogee, N.S.W., or care of the Institute box in Sydney.

A very interesting lecture was delivered at the November meeting by Maurice Brown (VK2OR, ex-G2XP) who went to England in 1943 and returned a few months ago. The subject was German radio and radar equipment, and was well supported by a large collection of tubes and gear captured from the Jerries.

Maurie pointed out that radio in the European war was largely a matter of one side developing a weapon, and the other then devising some means of defeating it. It is now common knowledge that at the outbreak of war, Germany had a radar chain, somewhat similar to that in the United Kingdom, but apparently not quite so efficient; so in the early months of hostilities, the German bomber planes used the BBC stations for position finding, thus allowing them to come in to selected points.

The British answer was to put all stations carrying the same programme on the same frequency. One control station generated a carrier with the master crystal; this frequency was then divided down by multivibrators and sent as an audio tone over telephone lines to all stations in the network, and at each station it was multiplied to the desired carrier frequency. Being thus cheated of that means of locating their targets, the Germans turned to using the Eire station, which of course didn't broadcast the BBC programmes, so a station was erected in Scotland to re-broadcast the Eire programme. One can imagine the feeling of the Caledonians at having this foreigner in their midst.

From that point on the "radio war" was a matter of constantly defeating the other fellow's apparatus and system of operation. Soon after a new British navigational aid, radar or such was put to use, the Jerries would manage to find out its principle, and develop some counter-measure. The British method of overcoming this was to make some small but vital change in the gear, and this is the reason for the "haywire" appearance of most British gear, in comparison with American or German gear. It was a system which certainly paid dividends. Most German gear lacked that flexibility, due to the widespread use of magnesium die-castings, although they produced very stable and nice looking equipment. The well-tooled American apparatus also did not lend itself to flexibility.

Amongst the tubes displayed were a number of magnetrons, both of the split-anode and the resonant-cavity types; klystrons, rectifiers, quite a few v.h.f. triodes, several interesting c.r.o.s. and a useful selection of receiving tubes.

The other gear on display consisted of a set of three German aircraft radio sets (a medium frequency transmitter, a u.h.f. transmitter, and a receiver), a very small and neat 2-stroke petrol motor and generator outfit (very useful for field days) and a 12-tube communications receiver. This receiver covered from 3 to 25 Mc. in five bands, and consisted of several interlocking die-cast units, which made it very convenient for servicing as well as making it very stable to vibration.

A feature which attracted much attention was the dial and tuning mechanism. In addition to the usual dial pointer, the calibrations of the receiver were photographically reproduced onto a glass plate about 3 inches by 2 inches. The calibrations, which to the naked eye, appeared as faint scratches on the glass, were enlarged by a lamp and optical system, and appeared on a ground glass screen at the front of the receiver as lines about an eighth of an inch apart representing 10 Kc. divisions at 14 Mc. Real band-spread!

This section of the receiver also incorporates an automatic tuning system in which two small motors, under the control of a 5-point switch, changed bands and tuned the set to within a few hundred cycles of the present frequencies. To set the frequencies, the operator merely tunes set by hand to the desired band and frequency, sets the 5-point switch to one of its four active positions, and pulls down a small lever. This locks the system and when the selector is again turned to that point, the motors tune the whole system to the selected frequency.

The electrical design of the set is also highly efficient, and incorporates a really effective crystal filter, two r.f. stages, and all modern cons. in general.

The talk was obviously enjoyed by all present, and a vote of thanks was carried by hearty acclamation. Maurice is to give a lecture at some

future date, on television in England and the Continent, and members are looking forward to it.

A novel competition was run at this meeting. The Technical Officer (John Moyle, 2JU) selected a crystal, whose frequency was somewhere within the limits of 3.0-3.5 Mc., but was not precisely known to anyone. The object was for each competitor to attempt to guess the exact frequency—each guess, of course, to be accompanied by a small entrance fee. Originally it was intended that John would measure the exact frequency at the meeting, but for certain technical reasons this wasn't possible. However, the exact frequency was written on a slip of paper in a sealed envelope, and turned out to be 3315.650 Kc. 2MA guessed the frequency to be 3313 Kc. and won first prize—a bottle of Scotch! Other prizes consisted of lengths of co-axial cable, crystals, and call books.

NORTH COAST AND TABLELANDS ZONE

2WC has been holidaying in Melbourne. 2DS not active; awaiting completion of new home. 2PA busy rebuilding; using a folded dipole with 70 watts to 813. 2NY getting fine phone from new modulator and working plenty of DX. 2EH worked hard getting boys' lead-up for 50 Mc. Field Day; worked VK3, 5, and 7 on 50 Mc. plus permanent channel to 2ADE at Casino. 2SL is on 50 Mc. a lot, with a hot 50 Mc. rotary beam. 2ADE has chalked up VK2, 3, 5 and 7 on 50 Mc. besides plenty of DX. 2SH, after building for 50 Mc. has been resting in a brand new shack, no fish? Is heard a lot on 7 Mc.

2JK has been building for 50 Mc. too, XYL threatens to learn code. 2RK working a little DX on 14 Mc. and uses a V beam on 7 Mc. 2AGM is undecided whether to neutralise the 813 or not; 809s supply the audio. 2EA on 7 Mc. with Disposals rig and doing fine. 2UN busy with civic duties, heard he was going on 166 Mc. with a lifeboat rig. 2ZX has hopes of operating on 50 Mc. and of bouncing over the ranges, has a 522 on the way; mainly on 7 Mc. phone. 2AFP back on 7 Mc. and would appreciate news from the gang, thanks to 2ZX for some of the above.

NEWCASTLE DISTRICT ZONE

2ZC went portable travelling de luxe with trailer, visited 2NS and has been transmitting from Katoomba. 2BZ is working narrow band f.m. on 50 Mc. 2AHA was away and missed out on the ZLs on 50 Mc.; not happy about it. 2AGD building a really super receiver and when George builds, it's really a job. 2FE still mainly on 7 Mc. phone. Still awaiting 2AFS to arrive back in good health. 2PQ working mainly on 7 Mc. phone, likewise 2AGY. 2CS is battling with man-hours, can't find enough to complete the Tx. Next month with all the holidays over, hope to hear a lot more.

COALFIELDS AND LAKES ZONE

The Zone Officer (2YL) is on holidays in Sydney so 7 Mc. is responsible for most of this. 200 on

receiving end of some narrow band f.m. from 2BZ, Owen reckons it's fine. 2KZ has one ideal, 28 Mc. post-war W.A.S. 2ADT missed on all bands, on holidays and no radio! 2PZ going to assemble some of the gear? 2KR and 2GA on 7 Mc. Most of the 50 Mc. boys got amongst the ZLs when they broke through on 50 Mc. 2XT on the special Coalfields Net each Sunday morning.

SOUTH COAST AND TABLELANDS ZONE
 2GU has been heard working 2CM crossband. 2JQ has acquired a new crystal and can be heard with the Home-to-Lunch Club. 2AKE has a Type A Mark III and will go QRO (?) after many years on 2 watts. 2NS has two receivers and two transmitters, but is still sentimental on QRP. 2TA and 2TC are mainly on 50 Mc. 2VS and 2ADI are very seldom heard these days. 2ANN ran 813 into ground trying to hear 2EO, and is trying to correct an internal short. 2DO contributed these notes in lieu of 2ANN; the former worked XE1FO on 7 Mc. phone. 2MT plays about with v.f.o.'s. A new Radio Club has started in Wollongong.

SOUTHERN ZONE
 3YD (ex-2IG) and XYL visited Albury for Xmas vacation. 2APW built new rig with 807s p-p., very pleased with results; intends to put his antenna up to 40 foot. 2QD wants to shift back to Albury and a.c., the wide open spaces don't appeal. 2OJ doing a little on 7 Mc., listening on 14 and 28 Mc. 2ANQ ready for action when aerial goes up. 2VK finished relief servicing and now grinding crystals for 2PL. Would like to hear from the Wagga gang; a few notes to 2OJ at Albury.

WESTERN ZONE
 2AGT been going places and working portable. 2ACU from Cowra has a new final. 2NS playing with antenna, worked F8EO long way round on 7 Mc., contact was at 1830 hours E.A.S.T. 2WH, now known as the whispering Ham, still hopes to get the V beam going on 14 Mc. 2II playing about with new transmitter ex-disposals, has motor tuning. 2BT with fine quality, building converter and erecting beam for 28 Mc.

2JV returned from Sydney after motor cycle trip; saw the gang down there. 2TG has new modulator and mike, claims it is better, I have my doubts. 2ALX with 4 element on 28 Mc. getting his share, one of the finest phone signals on air. 2BQ Broken Hill, heard on 14 Mc. phone, a change for Dud, how about some news from there for these notes. 2QA has 3 element on 28 Mc. and doublets on 3.5, 7 and 14 Mc.; also cleared him from modulator (we hope). 2LY still building for all bands. Most Mountain Hams 2LZ, 2AFO, 2TI are exclusively on v.h.f. 2HZ DX crank, 115 up post-war. 2AOP on 7 and 14 Mc. c.w.

SILENT KEYS

VK2ALD

The South Coast and Tablelands Zone of VK2 Division lost a very ardent Amateur when the Rev. R. B. Dransfield (VK2ALD) passed on. Better known to N.S.W. Amateurs as "Reg," he spent most of his time training budding Hams, and to his memory we have many Amateurs who received their initial training from Reg.

His association with the W.I.A. goes back over 20 years and he presented many lectures to the N.S.W. Division in the late twenties. Reg will be missed on 7 Mc. VK2JQ, Rev. G. A. M. Neil, conducted the service and floral tributes were received from many Amateurs throughout Australia.

VK3TM

With deep regret, and with sincere sympathy to Mrs. Buck and family, we mark the passing of VK3TM at Mooroopna Base Hospital on 3rd January, 1948.

VK7JW

It is with deep regret that we have to record the passing of Mr. "Jack" Wallace, VK7JW, who was accidentally drowned in the South Esk River at Longford while on a fishing trip.

7JW will be remembered as one of the old timers who graduated through the 80 and 200 metre bands. His help and guidance was instrumental in getting at least two of our present members licenced.

Prior to his death he was operating on the 7 Mc. band and had almost completed a new receiver with the object of working the higher frequencies.

To his wife and family we extend our deepest sympathy.

VICTORIA

The outstanding item of recent events was the annual State Convention held in Melbourne and attended by representatives of Country Zones and members, the comprehensive agenda presented for discussion being dealt with, the review of the outcome of which, will no doubt be awaited with the fullest interest.

In refusing to accept the resignation of Mr. Jim Marsland as Treasurer, Council preferred to grant leave of absence and had pleasure in granting an honorarium to Jim for his sterling services rendered to the Division in the past and also in his capacity on the Magazine Committee. Mr. Arthur Evans (3VQ) has volunteered to carry on as Hon. Treasurer in the meantime.

The Magazine Committee have been unfortunate to lose the services (temporarily, we hope) of Mr. Ken Ridgway (3CIT). Ken, who has held the post of Technical Editor of "Amateur Radio" since 1942, has reluctantly been forced to resign owing to pressure of business. Mr. J. Duncan (3VZ) has been appointed to fill this important post on "Amateur Radio."

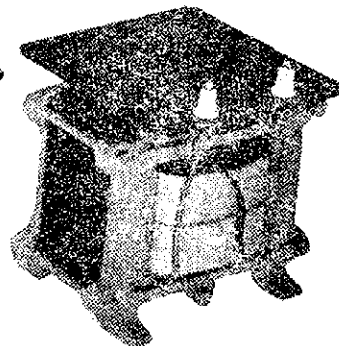
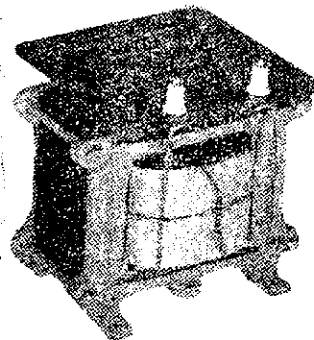
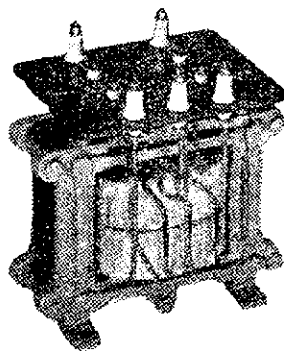
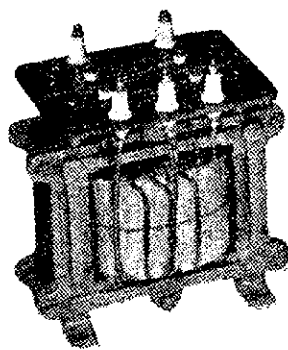
At the last Council meeting a further list of applications for membership had been received and at this stage it must be noted that 80 per cent. of all licenced Amateurs in this State are members of this Division. The Federal Constitution of the Wireless Institute of Australia, 1947, as presented by Federal Executive has been accepted by Council.

The sub-committee elected to promote competition for the Gadsden and Kinnear Trophies have made recommendations to Council and these have been further passed on for discussion at the Convention.

CENTRAL WESTERN ZONE

These notes, I am afraid, will reflect the holiday spirit of Christmas by being almost absent. To begin with everybody in the Zone has either been away on holidays or been too busy with harvest or shop work to engage in our most important occupation of haming. At least two visitors passed through the Zone over Christmas, 3CE of Berri-willock, and 3DI of Leongatha. Roy was enroute with family to Portland for a well-earned rest after harvest. Jim was caravanning (I think) round the State, his modified F8G certainly puts out a signal on 3.5 and 7 Mc.

Ye scribe was disappointed when 3YL and 8US failed to materialise prior to Christmas as I was looking forward to a 50 Mc. check, however I have since actually heard a 50 Mc. signal (S8) but still don't know who it was (please blokes don't run your carriers without a signature). 3FI is



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TRANSMITTERS.—Famous A.T.5 50-watt, phone or C.W. Xtal or V.M.O. Tube line-up Occ. 6V6, Doubler 807, 2-807 in parallel in final. Band coverage 500 K.C.—15 Mc. Meter covers all stages. Input 12-volt A.C. or D.C. H.T.500-V-300. Generator supplied with unit, or A.C. Transformers and chassis supplied. Also Aerial Coupling Unit Price £25

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using a QRP rig at present and, big blokes permitting, puts out a nice signal. 3ATF (Warracknabeal) would be dead without you Trev) is busy getting a good harvest in, and only has a quick peep over the week-end.

3AX is on holidays until about the end of this month. 3AKW, who has just about the right pitched voice to go through the QRM, is looking forward to his holidays when Harold comes back. Bill hopes to be down in "Smoky Hollow" for the State Convention. 3EP has just come back from a vacation, cramped somewhat by Melbourne's peculiar transport system. 3GN, like the writer, had to put all radio projects to one side and attend to such things as earning sufficient £ s. d. to keep body and soul together, did you have to pay your income tax too George? I did. 3YW, after plucking up enough courage to rob a couple of banks to pay the aforesaid income tax, finally managed to tame the 50 Mc. rig and is all set on the putting out idea, but not so hot on the pulling in. The Zone hook-up is on 7050 Kc., second Sunday in month at 10 p.m.

NORTH-EASTERN ZONE

50 Mc. activity in the N.E. Zone is increasing. 3DW is now active on this band and in 100 per cent. contact with 3UI at Tatura, 12 miles distance. Maximum plus phone signals both ways at all times; both stations use 3 element beams. 3FF visited 3TS at Corop; these lads being active with portable gear and working 3ABG, 3II, 3GD and 3L. 3KH has transmitter working and received RST 449 from 3UI on a scheduled c.w. transmission.

On Sunday, 4th January, 3UI arrived at 3DW, car loaded with 50 Mc. gear. Portable and mobile tests were carried out, converters versus autodynes, and each proved their worth on the receiving side. Good contact was maintained throughout the tests, the maximum range for the purpose being three miles, which included open and town conditions.

EASTERN ZONE

The Eastern Zone will be holding its first post-war Convention at Maffra on the 14th and 15th of February. Zone activities are strong around this area and the local Hams are working hard to make this the best Convention ever. Arrangements have been made for accommodation at the local hostels.

A dinner will be held on the Saturday evening. This will be followed by a Zone meeting for election of office-bearers and to arrange a programme of activities for the coming year.

The Bush Fire section is active and will be included in the agenda. All Hams will be very welcome and the Zone hopes that members will make a special effort to come along. Final arrangements have not yet been made for the Sunday, but it is hoped that some Melbourne Hams will make the trip and bring some of their portable 50 Mc. equipment. A field day will be arranged and combined with a trip to local scenic centres.

Would all those who expect to attend please notify the acting secretary Graham Colley (VK3QZ) c/o. S.E.C., Traralgon. Bed and breakfast will cost about 8/-, cost of the dinner is not yet known, but together with arrangements for transport will be advertised over VK3WI. It is going to be a big week-end in lovely Gippsland, so be in on it fellows.

QUEENSLAND

The annual Xmas Party of the Queensland Division was held at the Trades Hall on Thursday, the 18th December, some thirty odd members attending. Rag chewing was the order of the evening, and we believe that a good time was had by all, although things looked a bit grim at first owing to a complete lack of bottle and keg openers. Mr. Andrews, of the R.I.'s Department, found time to come along a little later on in the evening, and another visitor was Mr. E. Gold. Activity has not been at a very high ebb during the past month, both amongst individual members and also amongst Council, a state of affairs also reflected in the VK4WI hook-ups, the roll-call for the last few weeks being shorter than usual.

The 696 type of transmitter has come to hand, and also the Class O Wavemeters, distribution of both types being well under way. It is hoped to publish a description of the conversion of the 696 type of transmitter in the near future, so anyone without "Gen" books might be well advised to wait until the article by VK4FN appears in print.

In connection with Disposals gear it is not out of place to remind members, particularly those in the country, of the debt they owe to the Disposals Committee, and in particular to Secretary VK4RT who has given an untold amount of time to the purchase and despatch of this gear.

The first in a series of lectures on Antennae was presented at the December general meeting, the first instalment being given by Mr. P. Kelly, VK4KB, who dealt with fundamentals. As a result of this talk most of those present at the meeting went home and spent a good deal of time looking at the height of their aerials and also at the ground beneath, the nature of the ground beneath a radiator being a point dealt with by the lecturer at some length, a comparison being drawn between the Ham who mistakenly selects a site on top of a mountain as

being ideal for DX work (neglecting the type of soil beneath the super-duper array), and the "know-how" commercial people who carefully select some spot or other either at the bottom of Sleepy Hollow (where the ground is invariably moist), or on the seashore.

The second in the series will probably be a continuation of the first lecture, after which it is hoped that a lecture on "Practical Applications" will be given by VK4XG.

The Food for Britain Appeal has languished a little of late, due only, we hope, to the diversion of shekels to Xmas gift buying, but in order to give the movement new life it is proposed to raffie a few items of disposals equipment. So don't forget to patronise the next few meetings, you may succeed in drawing something out of the hicky dip.

Nominations for the position of VK4 Delegate to the Federal Convention to be held next Easter were called for at the last general meeting, VK4FN, VK4HR and VK4ZU being nominated, the position going to VK4HR, or in the event of his being unable to attend, one of the other nominees would fill the vacancy.

Zone notes are conspicuous by their absence these days, which is rather a bad show as your scribe now finds himself bereft of news. What say OMs? Surely you have some news to report, and what's happened to that dope you were going to send down re 807s, Harry VK4KW?

SOUTH AUSTRALIA

CHAIRMAN'S REPORT PRESENTED TO THE ANNUAL MEETING OF STM. AUS. DIVISION

Gentlemen.—Another Annual General Meeting night has come around, and with it the duty devolves upon me as President, to present a summary of the progress of the South Australian Division of the Wireless Institute of Australia. I think that all will agree that the preceding eighteen months have shown a progress such as even the most optimistic member would not have ventured to predict at the last Annual General Meeting. We now find the Institute with the largest membership this Division has ever recorded, namely 406 members.

The Amateur Bands have been restored for the use of members, practically the same as were in use prior to 1939. The Regulations have been lifted to a large degree and your power input increased to 100 watts, with the removal of that contentious Regulation, the A and B Class Licence; all this has been accomplished by the combined efforts of the various Divisions in each State through the governing body of Amateur Radio in Australia, the Federal Executive of the Wireless Institute.

The monthly meetings have provided a series of lectures which in my opinion, have been of such a standard as this Division has seldom equalled and I think never excelled from the point of view of the subjects dealt with and the manner in which these lectures have been presented by the various lecturers concerned, to whom our thanks are due. We had the misfortune during this year to lose the services of Mr. Ivor Thomas (VK5IT) as President, owing to business and other reasons and it should be noted that his work was a determining factor in the re-establishment of the South Australian Division in the post-war period. His work in connection with Disposals Gear will be gratefully remembered by all concerned.

It will be noted from a perusal of the balance sheet sent to all full members that the Treasurer has handled over £900 and although this covers a period of eighteen months it has meant an increase of three times the amount handled by him in the previous period 1945-46. The amount of work involved has greatly increased the time that the Treasurer and the Secretary have had to devote to Institute business and members would do well to reflect on the way Mr. Basey and Mr. Barbier have carried out their arduous duties.

The membership of the Council has been varied to some extent from those elected in 1946 owing to resignations on account of pressure of business and other reasons but the new members co-opted have proved that they have the best interests of the Division at heart, and with the original members have performed their duties in such a way that the Council functions as a most efficient body in transacting the affairs of this Division. To those members of the Council who resigned during the year we tender our thanks for the work done.

A.O.C.P. CLASSES.—Two series of classes have been held for Institute members, the first under Mr. Allan Lum as Theory Instructor and Mr. H. Roberts as Morse Code Instructor. The Class at present is in the very capable hands of Mr. John Allan (5UL) and the Code is being taught by that well known ex-P.M.G. Operator, Mr. A. Sheard.

TECHNICAL COMMITTEE.—Although this Committee is still in existence for the guidance of the younger member, little use has been made of the service offered.

TRADE.—The privileges extended to members of this Division by the Radio Trade in South Australia continues to exist for financial members of the Division and the discounts offered are one of the

big advantages of membership, in many cases more than paying for the subscription to the Institute, our thanks are due to the Trade for this continued co-operation.

LECTURERS.—We have been indebted during the period under review to the following for having provided lectures or other interest at our monthly meetings:—Messrs. A. C. Smythe 5MF, Roy Buckenfield 5DA, Ted Cawthorne, John Allan 5UL, Pete Bradman 5FM, Bob Manuel 5RT, Cliff Moule, O. Gowan (P.M.G. Dept.), Ted McGrath 5MO, Gordon Bowen 5AU, Frank Wreford 5DW, Murray Higgins 5QM, S.A. Illuminating Society (Pro. Sir Kerr Grant) and the P.M.G.'s Dept and A.B.C. for use of equipment.

TROPHIES AND DONATIONS.—Trophies were received from the Trade and Broadcasting Stations for the Field Day and to the various donors we express our gratitude.

EXPERIMENTAL ADVISORY COMMITTEE.—This Committee functions under the Chairmanship of one of our local Radio Inspectors and consists of five Institute members and one non-member. It is to be noted that the general operating procedure, transmissions and behaviour of South Australian Stations during the last eighteen months, has brought favorable comment from the R.I.'s Dept.

IONOSPHERIC PREDICTIONS.—Interpreted by Mr. John Allan (5UL) from charts supplied by the C.S.I.R. of Sydney, Predictions have been broadcast from the official station VK5WI at intervals, this information is appreciated by members and the thanks of the Council are tendered to Mr. Allan for this service.

OFFICIAL STATION VK5WI.—During the year the Institute obtained an Experimental Licence for official W.I.A. broadcasts in this State. This work was kindly undertaken by Mr. Reg Harris (5RR), assisted by Mr. J. McAllister. While primarily of interest to county members, the manner in which Mr. Harris "puts over" the matter to be dealt with, has made listening to the Sunday morning news, a "must" for both city and county members and performs a valuable work in holding the membership together. The very grateful thanks of the Council are extended to Mr. Reg Harris.

CONSTITUTION.—The matter of the Constitution has been delayed owing to the fact that the 1947 Convention decided that it was desirable for all States to adopt a Uniform Constitution, Federal Executive are working on this project and because of the varied Constitutions in the Divisions some time must elapse before these can be mutually agreed upon.

MAGAZINE.—The official organ, "Amateur Radio," is posted monthly to all financial members and I think that high praise is due to that energetic band of enthusiasts who produce it with no thought of personal gain. Letters from the Editor and others have stressed the urgent need for good technical articles and members are again asked to support this appeal, after all it is your Magazine and deserves the support of every member of the Institute. In this connection the work of the VK5 Sub-Editor, Mr. Warwick Parsons is acknowledged to be one of the outstanding features in the Divisional notes from month to month, his recent article of "Ten Motres" was a gem of satire and castigation to those members of this Division who frequent that band.

FEDERAL EXECUTIVE.—The Council of this Division desires to express their appreciation for the splendid achievements attained on our behalf and pledges the active support of this Division in the future.

CONVENTION.—In company with the Delegate from South Australia I was present at the 1947 Convention as Observer and had the opportunity of witnessing the tremendous amount of detailed work involved in the conduct of Federal Executive's efforts on behalf of all the Divisions. Members perhaps do not realise the amount of time and energy voluntarily sacrificed by these men for the advancement of Amateur Radio in Australia. Our thanks are due to Mr. Barbier as Delegate and Federal Councillor, a position which he has filled for some years. He has already reported to the Division on the deliberations at the 1947 Convention and it is not necessary for me to enlarge on this subject.

INSTRUMENT LIBRARY AND FREQUENCY METER.—Funds have been allocated for the purchase, at some later date, of equipment to be made available to members, for electrical measurements, etc., and in this connection a Bendix Frequency Meter, now the property of the South Australian Division is in the capable hands of Mr. Frank Wreford (5DW) as custodian and frequency checking officer for this Division. Many checks have been given over the air and meters have been calibrated. This service has been much appreciated by members and the time and trouble expended by Mr. Wreford is much appreciated.

GENERAL.—The Institute regrets the loss of Mr. W. Brett (5WB) whose untimely death ended the career of a very promising Amateur.

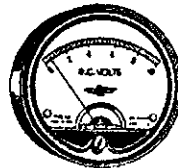
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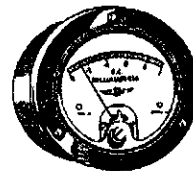
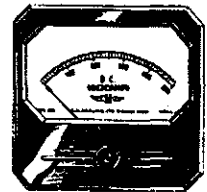
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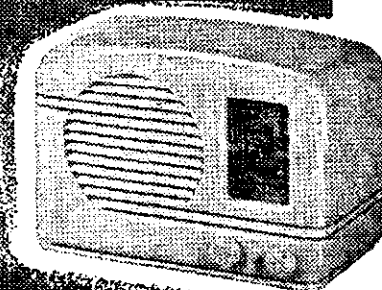
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advantage and to those officers of the R.I.'s Department who are in close contact with us we extend our thanks for the very understanding way the Regulations have been administered.

There is one point that I think needs some adverse comment and that is that no nominations for Council were received from the general membership, although I appreciate this as a compliment to the work of the present Council, I feel that new blood is a necessity for the continued well-being of the Division. It must be realised that the present Executives cannot continue indefinitely and we should have some of the younger members in a position to shoulder the burden. I urge you therefore to offer your services to the Division, so that the increased work may be spread over a greater number of helpers and so lighten the load now carried by a few.

The work of the Council during the last year has been very great and the efforts of all concerned have achieved the position that this Division now stands; this has been accomplished by team work but it is especially to be noted that without the really strenuous performances by the Secretary and Treasurer we would have found ourselves in a much less favorable position and we should congratulate ourselves on having two such enthusiasts in these positions. The work involved would be greatly lessened by the co-operation of members in the matter of prompt attention to accounts rendered. Laxity in payment of subscriptions and in attention to notices, means that additional correspondence greatly adds to the work of the Secretary and Treasurer. Non-financial members are a liability on the financial member and in future the Council has decided to withdraw all privileges until arrears have been met. I thank you for your support during the year and ask for its continuance in the future. —H. L. AUSTIN (5AW), President.

SOUTH AUSTRALIAN NOTES

"Full many a flower is born to blush unseen, And waste its sweetness on the desert air." The above sweet words were running through my head as I idly turned the pages of the week-end paper, the "Mail," and was met with the photograph of two of our most modest Hams to wit, Ralph ("seek you") Turner (5TR) and Ross (Bachelor of Radio Engineering) Kelly (5WV). In the aforementioned photo these two shrinking violets may be seen working duplex, one on phone and the other on c.w. Some duplex sez you! Ralph, according to the "helper dust" printed under the said photo works South Americans just like you and I work locals, and these South Americans say to him "Milo Ralph Amigo, I am so please to speaka with you ones more, you are coming in yer' clear, when you come to Colombia hey? Don't you ever have the—er—holiday?" Ralph has one of the most powerful transmitters in Adelaide, one hundred and one watts we presume, and Ross has a powerful but small transmitter of the type used by the underground fighters in Europe. "You great, big hunk of Querrilla you!" Great work fellas. "You sure lossa us bull." Sorry boys, but you did stick your necks out didn't you?

I have been forced to "fire" my correspondent from the Unley district as he forwarded to me the following paragraph, which even I could not believe. I quote: "A large and intimated mob of what turned out to be Radio Amateurs advanced on the residence of Mr. Ross Harris (5FL, Disposals Manager for South Australia) in the early evening of Monday, January 12. Mr. Harris met them at the front verandah and misunderstanding the purpose of their call, commenced a bright and entertaining lecture on 'Operating Procedure as applied to Ham Radio.' He was greeted with cat-calls, hisses, etc., and the angry mob began pelting him with tubes, condensers and other small radio parts. The hurried arrival of Mr. Cec. Basey (5BZ) waving several unpaid account forms from the W.I.A. caused a number of the mob to leave very smartly but the remainder kept repeating in a monotonous chant, 'We want disposals gear, we want disposals gear.' Mr. Harris realising the position then stepped forward and gave full particulars regarding the disposals position which appeared to satisfy the mob who began to disperse. Mr. Harris, when questioned, said that he was unaware of the apparent high interest regarding disposals gear, but he would endeavour to expedite matters immediately. He said in closing that he wished that the mob had been a little angrier because they then might have pelted him with a few power tranny's as he was short of a good tranny." Unquote. Now did I do the right thing to "fire" my Unley correspondent!

Heard a VK6 Ham, apparently with a hide like an alligator, say over the air to another Ham, "You can QSL via the W.I.A., it will be OK, I am not yet a member but I suppose I will join up one day." Wouldn't it!

Ross Harris (6FL) after mature consideration has consented to remain a co-opted Council member. I heard that it took three bars of full cream chocolate plus four chocolate frogs to convince him, and if so I am going to be a little "coy" next Council elections. "Fritz" is my weakness, beef fritz in particular. ("Fritz" dear Editor, is a form of sausage.)

It is with regret that Council members endorsed the resignation from membership of Jack Strafford (5JS). Jack's field in high esteem in VK5, both as an individual and an amateur, and it is to be regretted that he goes around with that little chip on his shoulder waiting for someone to knock it off. I personally class Jack as one of my best friends and assure him that anything that may have influenced his decision to resign, definitely did not come under discussion or originate in Council. What about it Jack? This is your column as well as anybody else's, and I welcome chances to fight "lost causes."

I notice that a cuckoo has crept into my nest. I refer to the addition in my last monthly notes. It could be that boulder Barbier, the cad, but I will suspend judgment until my bloodhounds return as they are "aromamin and shogamin" around the countryside, get it! The cuckoo has been busy again (why don't you listen on 7 Mc.—Ed.) and from that little bird tells the story of 5PS, complete with ballet skirt, wings, etc., giving an exhibition of the "Dying Swan." 'Tis rumoured that some people almost died on the spot at the sight. It is understood that the floor was specially re-inforced for the occasion.

28 Mc. is fast filling up in VK5 and new calls are appearing daily, so much so that I am having great difficulty in covering all angles. I notice "mum," "biscuit and tea drinking," etc., are conspicuous by their absence and an occasional report on signals can be heard.

The Xmas Social as well as the December general meeting, both usually supplying a big budget of news, must be tossed aside on account of being "stale" due to the early printing of the January issue. Apparently everybody thoroughly enjoyed themselves at the social, the highlights of which were Dougall Whitburn's (5BY) flights of oratory in welcoming the visitors, Professor Sir Kerr Grant's informal lecture on "Heavy Water" and the autographing of the 5WV QSL card by all present and later presenting it to G5UB who was a welcome visitor. Regarding the general meeting it was just another general meeting, many of the boys with "grouches," legitimate and otherwise came along like lions but left like lambs, and I feel sure that should someone one day stand up and generally "grizzle" about something, all the members of the Council would collapse from heart failure. The general meeting is the place to voice complaints and not on the footpath after the meeting. So get on your feet chaps and have a go, you might be surprised to find out how many are behind you but lack courage to rise to their feet.

The January meeting was a huge success when Dr. Adey (5AJ) lectured on "Radio and Medicine." Unfortunately, the closing date for these notes is January 15 and the meeting was held on January 13, which means I cannot fully cover the lecture in the time allowed. (Editor please note!) Phew! I got out of that one real well. Among the visitors were Messrs. Crowley, Simons, Kelly and Lane. Active visiting Hams included Messrs. Kerr (5AJK), Carrell (ZL1HL), Reeves (5KR) Walker (5PX) and Burgess (5GC). Mrs. Adey, the XYL of the lecturer was also present in the capacity of "guinea pig" and a very charming "guinea pig" if I may be permitted to say so. Mr. Murray Higgins (5QM) proposed a vote of thanks to the lecturer, which was received with acclamation. In closing might I say that in the opinion of the gathering the lecture was one of the best delivered to the W.I.A.

The question of unfinancial members and their loss of privileges (QSL cards, Magazine, etc.) was aired by Warwick Parsons (5PS) at the monthly general meeting and Doc Barbier (5MD) addressed the meeting in regard to this matter. He pointed out both sides of the question and stressed the fact that provision has been made whereby any unfinancial member may be carried over until circumstances permit the payment of subscriptions. This applies of course to genuine cases of hardship and not to imaginary ones, whereby a member pleads shortness of cash for the Institute, but next week manages to buy an expensive receiver, or microphone for himself. Nobody should be embarrassed because of financial difficulties as there are few among us who have not at some time or other experienced the same difficulty. Don't hesitate chaps to write the Hon. Secretary, state your case and you will be agreeably surprised at the results. For heaven's sake don't ignore your unpaid account and then "winge" and "howl" over the loss of privileges. After all you got plenty of warnings and you cannot expect one half of the members to pay and carry the other half on their back.

I received a short note from a Country Ham giving me details of the activities of himself and several other Hams and I put it away so carefully to use in this month's notes, and now that I want it I cannot find it. I think it came from L. E. Catford (5LC) and if so please accept my apologies for misplacing it. Should you or any other country Ham be kind enough to forward me any notes in the future I assure you it will not occur again. Is my face red!

The A.O.P.C. classes are finding it extremely difficult to secure a suitable room for the newly formed class which will begin sometime in February. Any member who can suggest suitable rooms please contact the Hon. Secretary Doc Barbier (5MD), but don't make the rent too high.

NORTHERN TERRITORY NOTES

Activity by most of the chaps in this area is quiet. 6AE and 5KL being main two to keep Darwin on the map. Dave has forsaken his portable rig for one more substantial, and has good quality phone using a dynamic type microphone, and is active on 28 Mc.

Noel, 5NR, made a sudden return to the air using 6VG and 807 rig with 15 watts input. Uses a half wave dipole, co-axial fed, and raises the Gs OK. YL still occupies whole of his time.

5AB now at Katherine and operating on 14 Mc. using a 6VG tريت and 807 p.a. 5QV now inactive and sold out his gear. 5SA is off the air at the moment.

Two VK5s were stationed here for a few weeks before Xmas in persons of Ray Bennett (5RO) and Jack Coulter (5JD). Many tales will be spun of untold DX heard and worked whilst in Darwin. All extend, to those who participated in the VKZL contacts on 50 Mc., congratulations and well done. 5KL is having modulator trouble but is keeping sked on 50 Mc. with European and W stations on c.w. Nil was heard here on 50 Mc. during break-through to ZL. 5AY is believed to be rebuilding.

WESTERN AUSTRALIA

The first meeting for the New Year was held on the 12th of January. An interesting evening was spent, the main feature being the postponed talk by GAG. Wally kept everyone attentive by the interesting manner of "40 Years in 40 Minutes." The other feature was a collection of 50 Mc. gear brought along by various VK6s.

The Annual Meeting will be held in February instead of January as previously. This arrangement is in accordance with Federal Council wishes to have all Divisions' Financial Year ending at the same time, so that a full report can be rendered at the Easter Convention.

A limited number of Class C Wavemeters have been procured by this Division from VK4, and Members will be advised as to the price, etc., through the local Bulletin. The SCR522s are now on their way, and should be arriving shortly.

PERSONALITIES

During 6FL's Christmas holidays the beam was duly "played with." Added were extra reflectors, and we are waiting to hear the results. 6JB is now back on the air. Heard on 7 Mc. with quite an f.b. phone signal. Welcome back Alan. 6WS is now W.A.C. and Skipper is quite proud of his rig. Just waiting for his Certificate to make things 100 per cent. 6KW said some nasty things when his beam motor kept on revolving when it was turned off. Ask Ron what happens to co-ax cable when stretched and stretched.

6WT has been a busy Ham lately, working DX on 7 Mc. c.w. 6SN is a new Ham with quite a nice signal. Alf is heard disturbing the ether on both 14 and 7 Mc. phone and c.w. 6BW is a little more active lately. Seems to have settled down in VK6 again, after a lot of interstate wandering. GAG has now erected (with the help of the Council members) a new 60 foot mast. A real mast following Wally's recent miniature demonstration was placed in position up in Darlington, a couple of Sundays ago, when the Council went up to have a meeting. It looks really f.b.

6DX has been working some really f.b. DX on 7 Mc. lately, including W on phone and c.w. 6MX another new call owned by Milo, an ex-W6. Good DX o.m. from VK6. 6RU has had the distinction of mention from the "formidable" "Grenlin." We believe Jim has, as usual, answered the b.c.l. report. 6KE is another new v.f.o. aspirant. Keith has now his new Bendix unit working, and is heard working in on the DX. 6MB has been busy building a v.f.o. We wish you luck o.m. and hope it works. 6RO has erected a new 28 Mc. vertical antenna. Reckons he will at least listen to the DX, even if he can't work it. 6EL comes up on 7 Mc. occasionally from the DX bands to work the locals. Puts in quite a good signal in Perth. 6PW was quite a f.b. rotary beam working down in our Port. Intends to give the Perth lads a run for the DX. 6FR is believed to have had an exciting time when his exciter went up in smoke. The result is a complete new exciter unit. It's an "ill wind" Fred o.m.

6OR is busy building a rotary beam for 28 and 14 Mc. Seen dashing round the timber yards looking for Oregon pine. More QRM for Moemman Park. 6VH was heard using a 5 watt portable from his home QTH. It sounded OK too, Ted. 6DF just about completed his new 50 Mc. rig for a.m. and f.m. Look out for some DX records soon on this band.

North and South notes look like overlapping somewhat this month as a result of a long Sub-Editorial stay in the North and North-west. Our main intentions were to do with laying in the sun and working the world with a Type A Mk. III, but a couple of evenings completely satisfied the urge to battle through on 7 Mc. with five watts, and spare time was very profitably diverted to visiting the northern gang.

These chaps are really going places on 50 Mc. 7XL and 7AB particularly, who were working VK5 and ZL as though they were just across town. A simple type of three element rotary is used in both cases, consisting of conduit elements mounted directly on a wooden pole and fed by co-axial cable. Also visited were 7BQ, 7LZ and 7GD in Launceston. The talk—fortunately—wanders sometimes away from radio on occasions like these but, if the kind of friendliness we encountered is to be called Ham Spirit, there is room for a few million more people in this game.

Now, as a further result of our being away from Hobart, the account of this month's meeting is to be culled from brief notes. This job is approached with some trepidation, since a similar attempt to work up some readable copy recently trod (it has been heard indirectly) on the toes of a reader who apparently brings an unduly earnest frame of mind to reading this stuff. He's quite a good bloke, really, but if he feels that this points him out in unsuitable fashion, it serves him right for not restricting his remarks to the right quarter. The moral, brethren, is this: Never complain about people stealing your thunder; it is the essence of obscenity. Like some of these notes.

There were thirty-one present at the meeting, including visitors in the shape of Mr. and Mrs. J. Batchelor (7JB and 7YL) and Mr. H. Cullendar of Victoria.

Our old friend of three field days' duration, Frank Miles, has become an Associate Member, and the dinner committee once more consists of 7RF, 7CT and 7CW. At last it shall if 7CT doesn't desert in Auckland where he is at present headed aboard "Kurrewa III." Terry, by the way, expects to be operating 7CT Mobile while aboard the yacht which is a competitor in the Auckland-Sydney race.

The Food for Britain Appeal has gone ahead by another £5, in addition to the donation of an FS6 power supply by 7KA, to be raffled at a shilling a ticket.

7KA is leaving us shortly for VK3, and in farewelling him we also congratulate the Victorians in acquiring a good chap.

Proceedings ended with a lecture by 7JB, dealing with a modern radio-communication system.

Early in December a gathering of some fifteen Hobart Hams was held at the home of our G.O.M., "Pop" Medhurst, who seems to take a new lease of life every time someone mentions radio. It's time we heard that mellow fist again, Pop—how about it?

NORTHERN ZONE

The strength of this Zone is gradually increasing and with 7DB now active the number of stations on the air in the near vicinity of Launceston is now eight. Visitors to the Zone this month included G5UB, VK3OJ, VK2ANI, and VK7PA, and our various members co-operated to the best of their ability entertaining their guests.

Although we cannot show much in the way of equipment to visitors, I feel quite safe in saying that all these Hams enjoyed their personal contacts with our various members. What with talking about old times to 3OJ and 7PA, working DX for 3ANL and showing G5UB the sights, our time was fully occupied.

Station activity this month is as follows:—7GD and 7DB are both working 7 Mc. phone at present and both these stations appear to be getting out quite well. 7CL is also getting a few QSOs in whilst the school holidays are on. 7BQ is still keeping up with his skeds on 7 Mc. and also keeping a check on 50 Mc. Len has worked VK2, 3, 4 and 7 on the latter band.

7DS has been heard on 3.5, 7 and 14 Mc. Hugh must be looking for a lost kilocycle or something. 7RK spent the Xmas vacation rebuilding and is now back on 14 Mc. chasing bigger and better DX. 7LZ is that dashed busy writing letters, notes and QSLs and finding out what everyone else is doing that he hasn't had time to do anything else.

DISPOSALS

Editor, "A.R."

From letters and by listening round the bands, it is obvious that many inaccurate rumours are circulating regarding Disposals matters in general and the VK3 Disposals Committee in particular.

Several Amateurs have been very noticeable; some not even being W.I.A. members. For some obscure reasons of their own they are spreading stupid, mischievous and even malicious rumours that are entirely unfounded. Such an anti-W.I.A. attitude can only result in harm to all Amateurs, who all owe the conditions they now enjoy largely to W.I.A. efforts on their behalf.

All official W.I.A. news concerning Disposals will only be promulgated by sending official correspondence to the Division or Divisions concerned who will in turn pass it on to their members, at general meetings, by circular or by broadcast over official Divisional Stations. For obvious reasons, detailed information concerning quantities, prices, availability, etc., cannot be given in these columns or "over the air."

We ask all members to help us and themselves by avoiding all mention of these aspects on the air and referring only to purely technical details. Do not repeat any rumours you may hear and do all you can to stop them spreading.

We realise that most members would like much detailed information and we would like to be able to reply to all individual requests, but as the work of obtaining, storing, sorting and distributing the gear is taking all the spare time of those members concerned, this is impossible. Therefore if your letter has not been answered, do not assume that we have just ignored it. When you receive any circulars, read them carefully and do exactly as requested and so help us to get the gear to you as quickly as possible.

We ask you all to realise that our sole object is to obtain, for W.I.A. members, this gear in which we believe they have an equity, in good condition and at prices to suit the average Ham's pocket.

We are well aware that many members have no direct access to other Disposals sources and we are trying to help them as much as possible. If you hear of "bargains" and our prices being compared unfavourably, we ask you to make certain that the condition of our gear compares equally unfavourably before you buy.

But, for reasons beyond our control, we cannot achieve results as quickly as we would like, so we ask you to be patient while we are doing our best to satisfy your wishes.

We trust that this rather lengthy letter has now cleared the air satisfactorily on Disposals matters.

Yours faithfully,

DISPOSALS COMMITTEE.
Victorian Division, W.I.A.

WHY SIMPLER ARTICLES?

1 Byron St., Box Hill, E.11

Editor, "A.R." Sir.

What's the strength of these boxes for simpler articles? After all "A.R." is presumably published in the first instance for Amateurs and the fact that a person is an Amateur presupposes that he has passed a technical examination. (If he hasn't, I shouldn't think he'd be game to advertise the fact.) In other words he's supposed to be starting off with a working knowledge of the fundamentals of what the Ws call "the electron art."

It seems to me, then, that the majority of "A.R.'s" readers should be more interested in making a forward step in their knowledge than in re-reading the subjects they had to know to get their tickets. Anyway, my experience has been that the chap with little or no knowledge of the theory behind the job he's on generally makes a hash of it.

If you don't know why a piece of equipment works, how the — are you going to find out what's wrong when it ceases to function? And a knowledge of the why and wherefore behind the construction of radio gear helps when you have to substitute pieces you have got for pieces you haven't. Many of these fundamental fends, if they haven't got a 0.5 uF. condenser, put in a 0.05 or just leave it out altogether, when a little thought and understanding would show them whether the value was critical, and what they could do about it.

Anyway, there are plenty of layman publications about that provide simple articles for the man who wants to be spoon fed. Mind, I'm not suggesting that "A.R." become a poor man's "Electronics" or an I.R.E. Journal, but I do think that we could all move back from the fire and make room for the folks that want to warm their theoretical knowledge. In other words, let's have all kinds of articles on all kinds of subjects so that all can find something interesting and instructive for their six bob a year.

In conclusion I would suggest that VK3GE (and other) have a look at QST for August, 1947, and

read W2RY's article on TVI. It is a good example of how theoretical considerations can lead to a solution of a problem. And who could suggest that an Amateur magazine should not publish such a useful contribution to Amateur knowledge?

Yours truly,
F. C. JOHNSTON, VK3EL.

SUGGESTIONS

Box 342 P.O., Narracoorte, S.A.

Editor, "A.R." Sir.

I have, for quite some months now, been going to write to you and offer some suggestions, etc., on what in my humble opinion would improve our magazine. However to be quite frank I've been too lazy to do so and it was only after looking through the December, 1947, issue and seeing Geo. Every's article that I felt the time had arrived for this letter. I most heartily agree with 3GE's letter and might add that I hope we hear more from his pen!

Like him I don't belittle the efforts of the chaps who contribute the articles but for at least 85 per cent. of us Hams, I'm quite safe in saying that we DON'T read the articles at all. They're too boring for one thing and for another most of the articles are far too technical for the majority of us (including myself, I must confess!). For the technically inclined excellent overseas books are available at small cost and more often than not include the practical as well as the theory.

I like to open up the mag. and get at the practical side at once and start out duplicating the article. Who, I ask you, wants to wade through pages of algebraic equations, etc., and wind up wondering what's it all about?

Cannot the Magazine Committee get city Hams (if not country) to contribute articles on gear, antennae, station lay-outs and what not. If the Hams themselves WILL NOT send in articles (I agree Mr. Editor that most of us are too d— lazy to send in articles and I'm no better than most), what's wrong with having a paid Ham visit shack and GET the dope himself! Surely the W.I.A. funds will now run to that? Anyhow I think something could be worked out on those lines.

Also more dope from the T.A.C. on ANYTHING they do. Although unfortunately, I haven't a Type 3 Mk. II, I think their article on same was very f.b. indeed and, I for one, certainly hope to hear more from them.

As I am a migrating apiarist (bee-keeper) by trade, I haven't had time to really settle down as yet since the war, but I'll be permanent at my QTH by this coming winter, and will send in any dope etc., I have on my rig, receiver, antenna, etc., but as a suggestion on the mag., why not cut it to pre-war size. In my opinion that's the best size for our mag. What do you think? Also what's wrong with a VK Hints and Kinks Section, similar to QST? I think a section could be worked up OK. If the boys won't send suggestions, pay a man to get 'em around the city if at all practical. I think the idea would click OK once the ball started to roll.

There's only one thing wrong with the "Grenlin" articles, and that is his page is NOT big enough. If he really wanted to he could fill a page quite easy each month but maybe he hasn't the time to spare. Anyhow he is doing a very good job. If I put out crook sigs I hope he hears me AND lets me know too!

Now this letter of mine is, I know, all moans and not much suggestion, Mr. Editor, but if it only starts someone thinking, I'll be quite happy. I'm a great believer in the W.I.A. and have been an active member since 1932. If this ever gets into print I guess my ears will burn, but my shoulders are broad and I can TAKE IT! Having said my piece, I will down my pen.

Yours sincerely,

WALLIE BURFORD, VK5PB.

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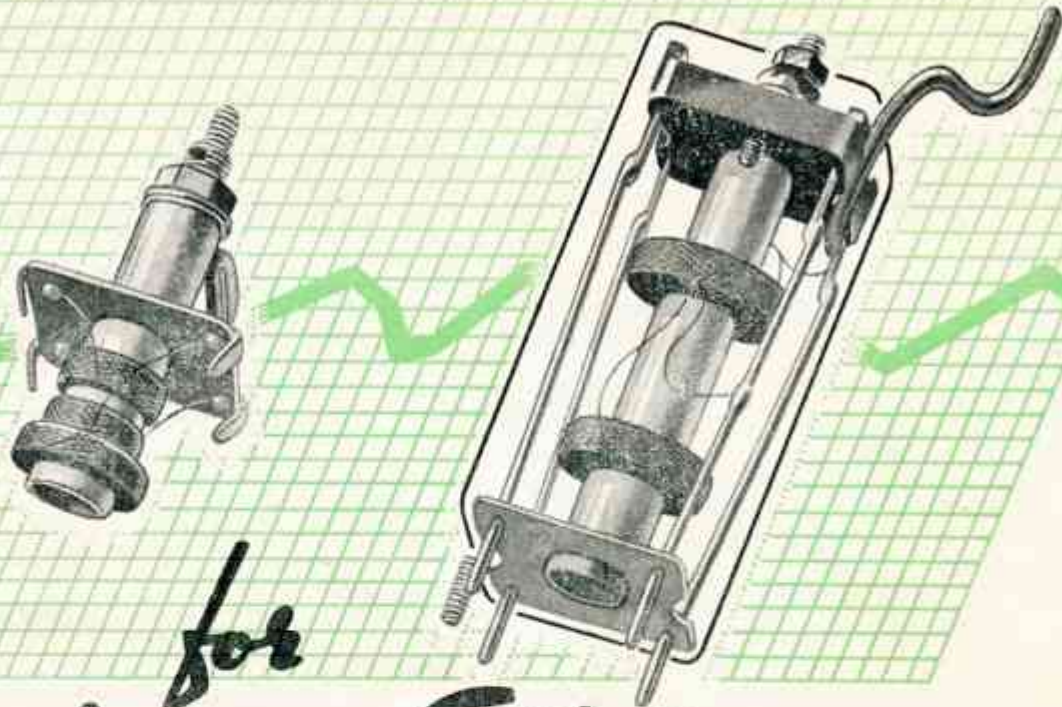
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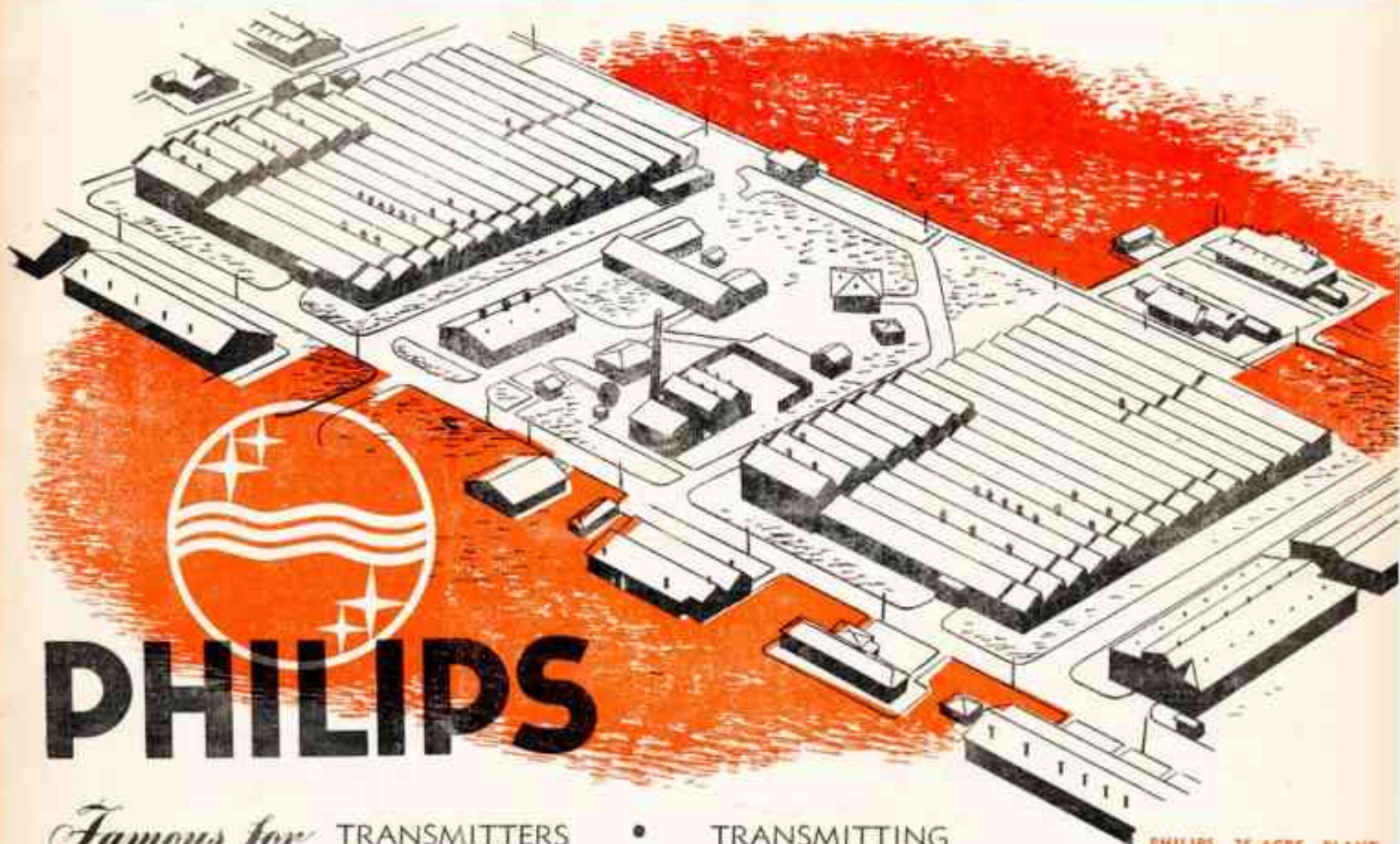
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EDITORIAL



BAND OCCUPANCY

Probably the most important question confronting the Radio Amateur to-day is the international allocation of frequencies, and in particular, how he will fare in the matter of allocation of Amateur Bands.

The Wireless Institute of Australia has been fortunate in having enjoyed close and sympathetic co-operation with the Postmaster-General's Department whose Radio Inspectors have done their utmost to facilitate the use by Amateur Stations of as much of the Spectrum as possible under the existing international plan.

Under the new allocations determined at Atlantic City, Amateurs will receive several new bands which will serve in some measure to offset the loss of other portions of the spectrum which we have had to accept with considerable reluctance.

The vital thing for Amateurs to remember is that these new bands must be used adequately and as quickly as possible unless we are prepared to suffer criticism for their disuse.

The Federal Executive is now discussing with the Department the question of Amateur Bands in our zone, and it is essential that we shall be able to give an assurance that when the com-

plete allocations are promulgated immediate use will be made of them.

One of the most difficult problems confronting the Federal Executive is to explain why the twenty metre band is so sadly misused for short haul contracts which could be carried out on V.H.F. bands and also why such lengthy conversations on trivial matters continue to cause congestion on a band which we are always claiming is too narrow now to accommodate all our stations.

In view of the increase in Amateur Stations throughout the world, we need to employ our bands to the best advantage or we can be sure that the ever-watchful commercial interests will endeavour to whittle down our hard won bands until there is nothing left except on extremely high frequencies.

The same argument can be used for the use of frequency modulation and pulse transmissions, the retention of which we may one day be asked to justify.

The Federal Executive intends to organise suitable contests to popularise the newer bands, but the influx to these new regions lies with each and every Amateur who is a true experimenter and really wants to enjoy Amateur Radio to the full.

W.R.G.

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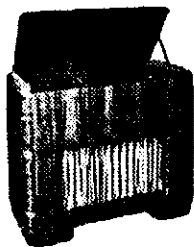
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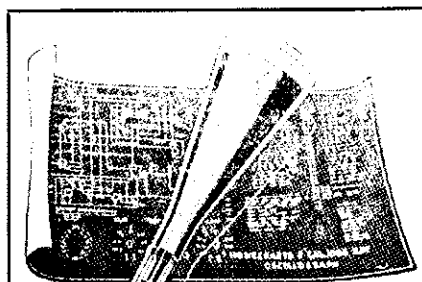
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A BAND SWITCHING CONVERTER FOR THE V.H.F.s.

BY J. C. DUNCAN*, VK3VZ

In common with many other Amateurs who are now contemplating ways and means of venturing into the High Frequency spectrum, the writer felt the need of increasing the operating range of the normal station receiver, so that reception would be available up to the 166 Mc. band. In addition the performance of all receivers used on the lower frequencies, shows a marked falling off in performance above 22 Mc. so that any converter, which is the logical way of making this expansion, should start at the 28 Mc. band, followed by the 50-54 Mc. and then the 166-170 Mc. band.

Another important point to be considered is the fact that quite a few Amateurs are in possession of receivers from Disposals, which only go as high as 22 Mc., which also indicates 22 Mc. as the starting point.

In the writer's case the station receiver is an AMR200, which is the Australian version of the Super Pro, and it was decided that the converter be mounted in the compartment in the power supply chassis, which normally houses the power lead and cables. This compartment is quite small, being 7" high, 3 1/4" wide, and 12" deep, hence the unusual shape of the Converter, for due to the lack of available space, it was necessary to utilize every square inch available. Another problem which had to be solved here was the one of band changing, and it was obvious that the only way would be band switching. Frankly the writer was very dubious of switching coils at 166 Mc., but was amazed to find that results on this band compared more than favourably with an A.S.V. receiver, and showed a marked superiority in signal to noise ratio.

Before commencing with the design and construction of the Converter, it was decided to use an old converter which the writer had on hand, to conduct some experiments to determine whether it would be possible to use some form of dial-less converter, or broad band r.f. stages, and thereby simplify the design. Results in this direction were disappointing, and the conclusion was reached that these methods are satisfactory if one is willing to accept reduced performance. The first test was made along the dial-less converter lines, the converter oscillator was fixed at 20 Mc. and the receiver tuned between the limits of 7 Mc. and 10 Mc., giving a range of 27 to 30 Mc. It was found necessary to have a co-axial line connecting the receiver to the converter, and both receiver and converter completely shielded, to prevent pick-up of strong signals in the region of 7-10 Mc.

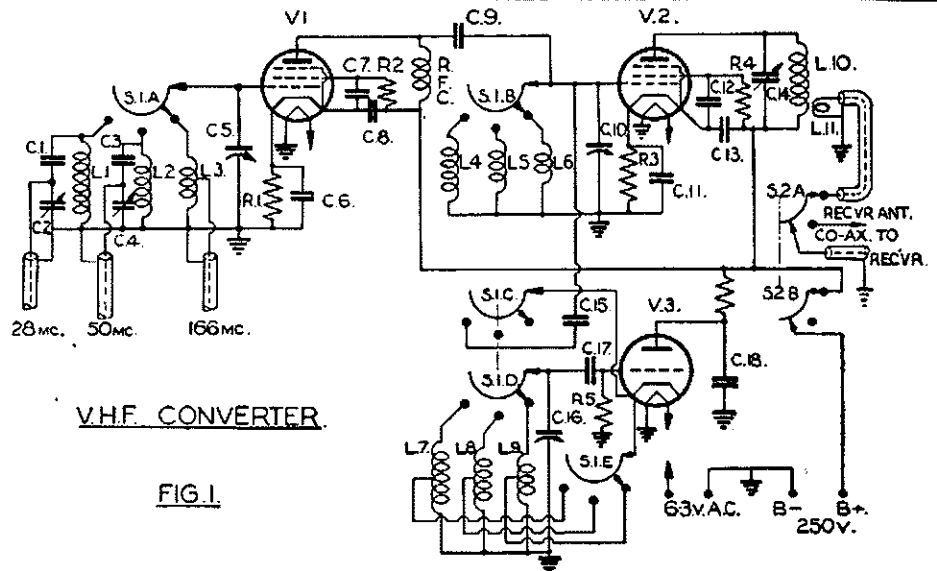
However with all these precautions a few strong signals did appear at about strength 4. Another very strong carrier, picked up at 29.2 Mc. approximately, proved to be a harmonic of the receiver oscillator, which would have a very great nuisance value. The system also showed very uneven sensitivity due to

the output transformer of the Converter being unbalanced, whilst the first i.f. (the receiver) was varied. Attempts were made to broaden the resonance of this circuit by loading with a resistance, but this resulted in a marked decrease in the sensitivity of the Converter, although the circuit was broadened to the required amount. This same marked drop in sensitivity was also evident

when resistors were used to load the r.f. and mixer signal circuits, therefore it was obvious that the reduction in "Q," was bringing about a reduction in signal to noise ratio, because the tube noise was unaltered.

It was decided therefore that the best arrangement would be to use the conventional method of approach to the problem, and use the receiver as a fixed i.f. frequency, and tune the converter.

The remaining points to be decided were the choice of the first i.f. frequency, and the overcoming of the receiver oscillator harmonics falling within the bands to be covered. Actually these two problems are tied together to some extent, as by changing the receiver i.f., we also change the receiver oscillator frequency, and with it the position of its harmonics throughout the high frequency spectrum. This problem was solved by considering what frequencies the receiver oscillator could be operated on, which would enable the harmonics to clear the bands covered by the Converter. As a first i.f. frequency of about 10 Mc. had been decided upon as being the best frequency for the Converter, a



V.H.F. CONVERTER.

FIG. 1.

- C1, C3, C15—5 pF. Ceramicon.
- C2, C4—5-30 pF. variable.
- C5, C10—15 pF. variable with 2 rotor and 3 stator plates.
- C6, C11—0.001 uF.
- C7, C8, C12, C18—100 pF. mica.
- C9—50 pF. (N.P.O.) Ceramicon.
- C13—0.01 uF.
- C14—3-30 pF. mica trimmer.
- C16—15 pF. variable with 1 rotor and 2 stator plates.
- C17—50 pF. (N750)
- R1, R3—250 ohms wire wound resistor.
- R2, R4, R5—50,000 ohms.
- R6—30,000 ohms.
- S1a-e—3 bank 3 pole 3 position Ceramic wafer switch.
- S2a, b—d.p.d.t. switch.
- RFC—2.5 mH. r.f. choke.
- V1 V2—6AG5 peanut valves.
- V3—9002 peanut valve.
- LI—28 Mc. aerial, 10 turns 1/2" diam. 3/8" long, 18 s.w.g. enamel.

- L2—50 Mc. aerial, 6 turns 1/2" diam. 1/2" long, 18 s.w.g. enamel.
- L3—166 Mc. aerial, 14 s.w.g. tinned copper, 1 1/4" long overall with small "U" in centre 3/8" high and 1/4" wide, tapped at top of "U".
- L4—28 Mc. mixer, 10 turns 1/2" diam. 3/8" long, 18 s.w.g. enamel.
- L5—50 Mc. mixer, 6 turns 1/2" diam. 3/8" long, 18 s.w.g. enamel.
- L6—166 Mc. mixer, 14 s.w.g. tinned copper.
- L7—28 Mc. osc., 10 turns 1/2" diam. 3/8" long, 18 s.w.g. enamel, tapped at 3 turns from ground.
- L8—50 Mc. osc., 6 turns 1/2" diam. 1/2" long, 18 s.w.g. enamel, tapped at 2 turns from ground.
- L9—166 Mc. osc., 9 turns 1/2" diam., closewound, 18 s.w.g. enamel, tapped at 3 turns from ground.
- L10—9.545 Mc. i.f., 38 turns 1/2" diam., closewound, 29 s.w.g. enamel.
- L11—I.F. link, 3 turns 29 s.w.g. enamel.

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few calculations showed that the following frequencies would be suitable for our receiver oscillator:—

Receiver oscillator 9 Mc.—3rd harmonic 27 Mc., 6th harmonic 54 Mc., 19th harmonic 171 Mc., and all other harmonics would clear the bands.

Receiver oscillator 10 Mc.—3rd harmonic 30 Mc., 5th harmonic 50 Mc., 17th harmonic 170 Mc.

Receiver oscillator 11 Mc.—3rd harmonic 33 Mc., 5th harmonic 55 Mc., 15th harmonic 165 Mc.

From the above figures it can be seen that if the receiver is set so that the oscillator is on any of the above frequencies, oscillator harmonics will be either on the band edge or clear of the band. The decision was made to operate the receiver oscillator on 10 Mc., so that the harmonics could be used to mark the band edges, and therefore convert the harmonics from a nuisance into an asset.

If it is required to measure the band edges with a great degree of accuracy, any receiver capable of tuning in WWV on 10 Mc. is used, and the receiver connected to the Converter varied until the receiver oscillator is heard to zero beat with WWV. This will mean the receiver is set up for a first i.f. frequency of 9.545 Mc. if the receiver has an i.f. of 455 Kc. and the oscillator is operated on the high frequency side of the signal frequency. As very strong signals are received on frequencies as high as 170 Mc., excellent band edge markers are available.

This attack on the receiver oscillator harmonic problem, is the simplest that the writer could find which would be 100% effective, as no amount of shielding or isolation reduced these signals to a negligible amount. The only method not tried was a low-pass filter, with a cut off point at 10 Mc. located in the co-axial line between the receiver and converter, because it was obvious from the tests that this line was carrying the harmonics to the converter. This method was discarded because it had been decided to install a switch in the Converter to connect the co-axial line from the receiver, either into the Converter output, or the normal receiving antenna, and any filter in this line would be in series with the receiving antenna when the Converter was not in use.

CIRCUIT After these preliminary experiments the circuit was drawn and the Converter built, and it was found that there were still a few problems to be overcome, so we will discuss these items whilst describing the circuit.

As can be seen from the circuit diagram in Fig. 1, three separate co-axial inputs are provided for each band, because at these frequencies, beams, ground plane, or vertical antennae would be used, each with its own individual co-axial line, thereby avoiding the necessity of switching the input circuits in the Converter. On 28 and 50 Mc. bands the co-axial lines are matched by a capacity network across the grid coil, and by varying the 3-30 pF. trimmers and the inductances, it is possible

to find values of each which will give the best signal strength for the antenna used.

This will indicate a correct match between the co-axial impedance and the impedance of the grid circuit. These circuits once set require no further adjustment. A similar system was tried at 166 Mc. but it was found necessary to load the grid circuit by tapping the co-axial line up the grid coil, to prevent the r.f. stage oscillating at this frequency. It was also found necessary to have cathode by-passes of 0.001 uF. in both r.f. and mixer circuits to prevent oscillation at 28 Mc. The screen and plate by-passes are connected to the other end of the cathode to that occupied by the cathode resistor and by-pass, for in all v.h.f. tubes, the cathode is brought out to two separate socket pins. The plate of the r.f. stage is capacity coupled to the mixer grid circuit, as experiments showed this coupling to be just as effective as the separate primary winding at these frequencies, and it also simplified our switching. The output circuit of the mixer is tuned to 9.545 Mc., as mentioned previously, and is tuned by a 3-30 pF. condenser. The output link is brought through a co-axial line to a double pole, double throw switch, which connects the co-axial line from the receiver, either to the output of the Converter, or to the normal receiving antenna, which connects to a terminal on the Converter. The second pole of the switch, cuts the h.t. to the Converter when it is not in use.

The oscillator is a grounded plate Hartley, and injection into the mixer grid circuit is obtained by taking output from the cathode tap, and feeding it through a small capacity to the mixer grid. The value of this capacity is altered by switch section S1c, as a value suitable for 28 Mc. is far too great for 166 and 50 Mc. Experiments showed that the capacity existing in the switch contacts gave the correct amount of injection, together with the pick-up from the lead running from the oscillator cathode tap into the mixer shield compartment, for 50 and 166 Mc. operation. On 28 Mc. this degree of coupling was not nearly great enough, so the small Ceramicon is switched in to overcome this.

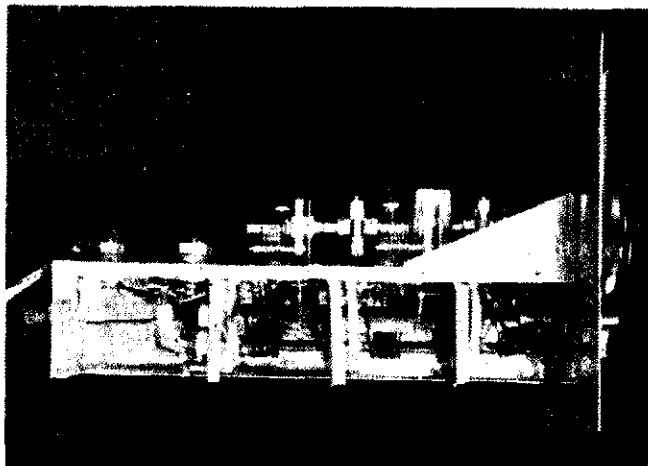
It is opportune at this time to mention several difficulties which had to be overcome before correct operation of the Converter could be obtained. The first problem occurred on the 28 Mc. band, where the oscillator was operated on the low frequency side of the signal circuits, i.e. from 17.455 to 20.455 Mc. A bad case of double spotting occurred, the image occurring about 1 Mc. from the signal. Lack of image reactivity of the receiver used with the Converter was suspected, but this did not prove to be the reason.

The true reason proved to be due to the following fact—with the converter oscillator on the low frequency side of the signal circuits, images would be received from stations twice the first i.f. frequency away, that is, from 7.910 to 10.910 Mc., which it will be noted, covers the converter output frequency, or first i.f. of 9.545 Mc. This meant that the Converter was receiving the signal in the normal manner, converting it to 9.545 Mc., and then the oscillator was again beating with this signal and re-converting it to the first i.f. frequency when the Converter was tuned away slightly from the signal frequency. Because this first i.f. signal existed in the mixer circuit, it can be seen that there would be no attenuation by the signal circuits (i.e. the r.f. and mixer grid circuits) which would make the image extremely strong. The remedy of course was simply to operate the oscillator on the high frequency side of the signal frequency for 28 Mc. operation.

On the 50-54 Mc. band the oscillator is operated on the low frequency side of the signal, and no trouble was encountered here.

The 166 Mc. band was tackled next, and it was found that the oscillator dropped out of oscillation at about 145 Mc. and could not be coaxed back. From about 120 Mc. the output of the oscillator had shown a decided dropping off in output, so it was decided to use the second harmonic of the oscillator, and run it in the region of 80 Mc. The output on the second harmonic was found to be greater than the fundamental when operated in this manner; that is comparing the output on the second harmonic of 80 Mc. against the fundamental on 145 Mc., which was as high as the oscillator would operate. In addition the oscillator was much more stable, and the all round performance of the Converter was now such, that the three bands tuned just as easily as the normal receiver on lower frequencies.

LAYOUT Up to now no comments have been made on the physical layout of the Converter, although it is quite obvious that the success or failure of a unit of this kind is entirely dependant on it, particularly with band-switching. In case some of the components are not available to enable duplication of the original, it



would be as well to describe the method of setting out, so that the length of all leads will be at a minimum, in the circuits which require them to be that way, and it must be borne in mind that preference must be given to the highest band covered.

The three condensers were fitted with their flexible couplings, and laid out on the table, measurements were then made of the distance between the three bearings, thereby giving the distance between the front panel, and the following two mounting brackets for the condensers. The switch banks were then laid under the condensers, so that the switch connections are directly under their respective stator connections of the condensers, then allowing for the 1/2" mounting pillars for the switch banks, the distance between the shield divisions can be obtained. The actual width of the Converter is largely a matter of individual choice, as some may prefer to make the unit self contained, with built in power supply; however the distance from front panel to the dividing partitions must be exactly right if all leads are to be kept to a minimum.

In the illustration it will be noted that there are four main shielded compartments. The rear compartment contains the power input, co-axial inputs for the three bands, co-axial outlet to receiver, which is the rear outlet of the four, antenna terminal for receiver projecting from rear of Converter, air trimmers for 28 and 50 Mc. bands, and finally the d.p.d.t. rotary switch for changing the Receiver from Converter to receiving antenna.

The next compartment houses the r.f. stage, following which is the mixer compartment, with the output coil in the small shield above the chassis.

The front compartment, nearest the front panel, is the oscillator section of the Converter.

In Fig. 2 the drawing shows the essential components in the mixer compartment. The drawing has been made with the Converter in an inverted position, viewed from front to rear, and shows both a plan and elevation. In the plan view, the pigtail of the condenser rotor projects through a hole cut in the chassis, and a heavy 14 gauge wire is soldered to the pigtail at this point and brought up in a curve to provide a point for the cold ends of the coils.

Another hole is drilled in the chassis, directly under the stator tie point, and the lead from there is brought directly on to the wiping contact of the switch

bank. The wire running from the No. 1 contact of the bank to the condenser pigtail, is the 166 Mc. inductance, for even with the reduction of lead length to a minimum, there is still sufficient inductance in the wiring and switch contacts to need only a straight wire to complete the coil. This fact does not appear to be detrimental to the operation of the circuit, as quite a reasonable peak in signal is obtained when the aerial and mixer circuits are tuned.

The grid pin on the mixer socket is located so that this lead is kept to a minimum. If a straight wire is not found to have sufficient inductance, it is advisable to use a hairpin coil here. The 50 and 28 Mc. coils are located where shown, with preference on shortness of leads given to the 50 Mc. band.

These coils are adjusted by holding a soldering iron at the point X, where they connect to the main 14 gauge supporting wire, and drawing the coils in and out, spring fashion, to obtain the correct inductance. Final tuning can then be done by slightly separating the turns of the coils with a screwdriver. These methods of coil adjustment, have

ment of the coils is made with the spreading and contracting of the turns by means of the screwdriver.

The steel rod which turns the switch banks was cut off near the clicker plate, and a piece of bakelite rod filed to replace it. This was done to remove as much metal as possible from the fields of the coils. The aerial change-over switch was also controlled by a bakelite rod, for the same reason.

The three variable condensers used were stripped down to give a large degree of band-spreading, and in the finished Converter the following ranges were obtained:—26.9 to 30.4 Mc., 49.9 to 55.2 Mc., 160 to 172 Mc. The oscillator condenser was reduced to one rotor and two stator, and the r.f. and mixer condensers to two rotor and three stator plates. With this arrangement of capacities it was found that the tracking was quite satisfactory on all bands.

ALIGNMENT One of the main problems associated with any piece of equipment such as this, is the problem of finding the band on these frequencies, particularly on 166 Mc. The 50 Mc. band is not so difficult and the 28 Mc. band quite easy with the activity now to be found there. Therefore it is advisable to get the Converter working on 28 Mc. first, following with 50 Mc. and then 166 Mc. The Receiver should be set to 9.545 Mc. as previously described, and the Converter output circuit peaked to give the greatest noise.

An Alignment Oscillator is then set to 28 Mc. and the 28 Mc. band set to the correct setting on the dial. If it is desired to cover the 27 Mc. section of the band, the Oscillator should be set to 27 Mc. and the oscillator coil in the Converter adjusted to bring the signal in at nearly full scale, then with an antenna attached the signal circuits are set for maximum noise, by peaking at the middle of the band. The 50 Mc. band is adjusted in a similar fashion, except that the Alignment Oscillator is adjusted to 25 Mc. and the second harmonic used to locate the band. With the Receiver oscillator set on exactly 10 Mc. as previously described the 50 Mc. point will be indicated by a strong signal being received from the 5th harmonic from the Receiver.

After these two bands have been set up, it is necessary to locate the 166 Mc. band. If a calibrated Wavemeter is available, it is only necessary to tune in one of the Receiver oscillator harmonics and then vary the Wavemeter until the oscillator pulls out of oscillation. The oscillator coil should then be altered until it pulls out at 85 Mc., which should then place the Converter on 170 Mc., as the second harmonic is used. A signal is then tuned in and with the three condenser couplings disconnected, each condenser varied to give maximum gain. It should be noted that it is necessary to connect an antenna during these adjustments, to avoid oscillation in the r.f. stage. Even a short piece of wire is all that is necessary. The frequency is finally checked by link coupling the Wavemeter in series with the

(Continued on page 7)

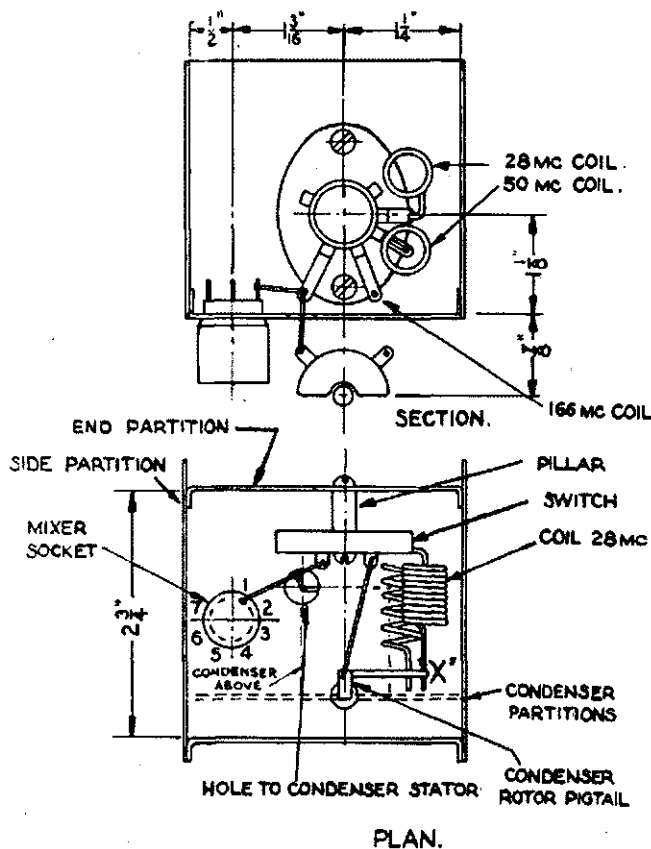


FIG. 2.

proved most effective, and it is surprising the large range of frequency over which the Converter can be varied.

The two side shields of the Converter are removed for wiring and adjustment of the coils in an approximate manner. With the shields in place fine adjust-

A Flextal Conversion Exciter Unit

(Courtesy Radio Publications Incorporated)

BY A. K. McLENNAN*, VK3AKM

This unit, of the variable frequency type, first made its appearance in "The Jones Radio Handbook," fifth edition.

The principle of operation is to beat a variable frequency against a fixed frequency and have the resultant "beat" frequency in a useful spectrum. Thus by having a fixed frequency of 4,300 Kc. and beating against it another, variable from 800 Kc. to 550 Kc., the resultant "beat" will be variable between 3.5 Mc. and 3.75 Mc. This will cover half the 3.5 Mc. band, more than twice the 7 Mc. and 14 Mc. bands, and all of the 28 Mc. band. This provides a very useful coverage.

In the unit to be described, the fixed frequency is obtained from a Pierce Crystal Oscillator, using a 6C5 triode, while the variable is from a Hartley type of self-excited oscillator, using a 6F6 as a triode. The beat frequency is obtained from the plate circuit of an 802, this tube being used as a mixer.

In the opinion of the writer, points in favour of this unit are:—

- 1—Stability of a self-excited oscillator is much easier to obtain on the comparatively low frequencies of the broadcast band than on the Ham bands.
- 2—When using the usual type of v.f.o. on a low frequency, each time the fundamental is moved 1 Kc., the operating frequency is moved by the amount of multiplication. With this unit the output is in the 3.5 Mc. band and moving the low frequency oscillator 1 Kc. only moves the "beat" frequency 1 Kc. This allows for very easy operation when one wishes to QSY.

The constructional details are not in any way complex, all that is necessary is to make sure it is a solid job, putting each tube and its components in a separate compartment, drill "breather"

holes in the top of the cabinet over each tube, with a shield around the GPO to the same height as the cabinet, and mount the voltage divider externally, so that there is a minimum of heating of the components. No voltage stabilizer was used in the writer's unit as it was not found necessary. A variation of voltage caused both oscillators to move in the same direction, in this case higher, with the result that the beat did not shift to any audible note.

This test was made using the fourth harmonic of the local b.c. station which is 3.520 Mc. and after allowing the heaters to "warm up" for ten minutes no frequency drift was noticed over a period of forty-five minutes.

A full point to point description of the construction will not be attempted here, as any person intending to build it will have sufficient knowledge to do so from the circuit.

Although not shown in the circuit it is a good plan to place a milliammeter in the plate circuit of the 802.

It will also be noted that there is no h.t. on the screen of the 802. This is quite in order as the screen is used purely as an injector grid.

If the suppressor were used there would be no shield between the injector grid and the plate and this would allow too much of the low frequency to appear in the plate circuit.

The writer has used one of these units for some months now and has found it to be very satisfactory. However there is one point, watch carefully the frequency of the Crystal used, making sure that it will not cause any harmonic of the Hartley to fall in the 3.5 Mc. band in close relation to the beat frequency.

Take the case of a Crystal on 4.68 Mc. When tuned for a beat frequency of 3.51 Mc. the Hartley is on 1,170 Kc. and its third harmonic is also on 3.51 Mc. This is alright if the beat is "dead on" 3.51, but between 3.5 and 3.51 a second signal appears and can cause a deal of trouble.

Crystals having fundamental frequencies between 4.3 Mc. and 4.5 Mc. are free from this trouble.

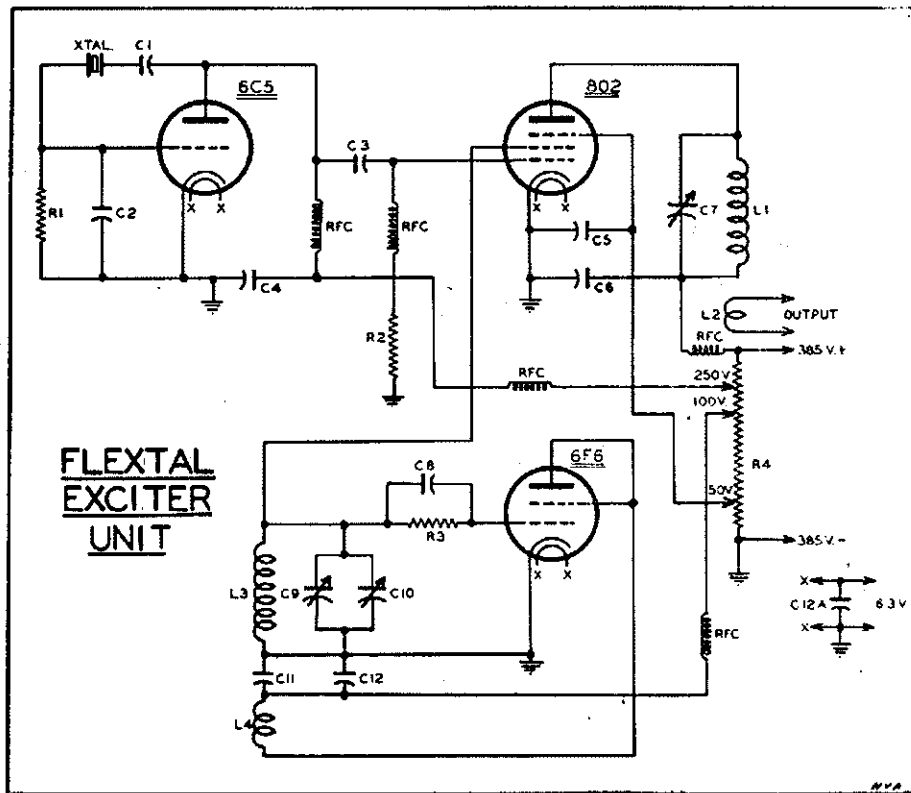
The tuning procedure is as follows:—

(i) Remove the 6F6, and using a Crystal in the 3.5 Mc. band tune the plate of the 802 to resonance. This ensures that the Pierce Oscillator is working and also gives an idea of where the "dip" should be when using the conversion Crystal.

(ii) Replace the 6F6 and remove the 6C5 and with the aid of a b.c. receiver set the padder of the Hartley until the frequency is 3.5 Mc. removed from the conversion Crystal, i.e. with a 4.3 Mc. Crystal set the Hartley on 800 Kc. Do this with the band-spread condenser at minimum capacity, because, as we are using the difference of the two frequencies the unit tunes "backwards," i.e. an increase in capacity results in an increase in the beat frequency.

(iii) Replace the 6C5 and using the conversion Crystal check the band-spread with the aid of a frequency meter, at all times keeping the 802 plate at resonance.

The unit is then ready for work and has plenty of output; in fact, the writer



- C1—0.01 uF.
- C2, C3—100 pF.
- C4, C5, C6—0.001 uF.
- C7—50 pF. variable.
- C8—500 pF.
- C9—385 pF. (broadcast).
- C10—100 pF. variable.
- C11—0.1 uF.
- C12—8 uF.
- C12a—0.006 uF.

- R1, R2—50,000 ohms.
- R3—5,000 ohms.
- R4—35,000 ohms.
- RFC—2.5 mH.
- L1—48 turns 22 gauge close wound, 1" diam.
- L2—8 turns 22 gauge over cold end L1.
- L3—Broadcast coil third of turns removed.
- L4—30 turns 28 gauge, sliding over L3.

*Assist. Engineer Station 3UL; Landsborough Road, Warragul, Victoria.

had difficulty in reducing drive sufficiently when driving an 807 on 3.5 Mc.

If there is any doubt about not using voltage regulation on the Hartley, a VR105/30 may be used.

It is the intention of the writer to make this unit a real "Flexital" by incorporating a switch to bring several spot Crystals in, thus having an exciter unit which will be quite versatile.

Before finishing may I be allowed to write a word of advice:—

There has been, lately, some talk about v.f.o.-itis, i.e. running up and down the band and thereby causing quite an amount of unnecessary QRM. Take a tip, and incorporate a switch that will allow the "Flexital" to be brought on independently of the final. This will allow of "netting" without causing QRM.

Band Switching Converter

(Continued from page 5)

antenna lead, and with a signal tuned in, a point will be found on the Wave-meter dial where the incoming signal dips suddenly. If Converter is operating on its correct frequency this should be on the 166 Mc. band. The lead lengths are then adjusted to give alignment.

Another method of finding the 166 Mc. band is by the oscillator harmonic method. This requires an Alignment Oscillator covering the range 15-30 Mc.,

and the principle of operation is as follows:—The Converter is tuned to a 10 Mc. point, which is one of the Receiver harmonics, and the Alignment Oscillator frequency is varied until a beat is heard with the signal tuned in on the Converter, this frequency is noted. It will be found that in the range 15 to 30 Mc. quite a few points will be found. By referring to the table below, the frequency to which the Converter is tuned will be found above the vertical column of frequencies which agree with the points noted on the Alignment Oscillator. It is important that this check be made only after the signal circuits have been aligned, otherwise images will be loud enough to be confused with the signal.

The table only shows frequencies over a limited range, but can be extended by simply dividing the frequencies in the top line by the harmonic required, such as 5, 6, 7, etc. Also the table is not calculated to a high degree of accuracy as this is not necessary to locate the band.

70	80	90	100	110	120	130	140	150	160	170
23.3	26.7	30	25	27.3	30	26	28	30	26.67	28.4
17.5	20	22.5	20	22	24	21.6	23.38	25	22.9	24.3
14	16	18	16.7	18.4	20	18.6	20	21.4	20	21.22
		15	14.3	15.8	17.15	16.25	17.5	18.7	17.8	18.9
					15	14.45	15.5	16.7	16	17
								15	14.55	15.45

In operation the Converter has proved to be an excellent performer, and it has retained its calibration on all bands, whilst the convenience of switching bands has to be experienced to be appreciated.

TECHNICAL EDITOR'S NOTE

It is regretted that owing to the indisposition of one of our draughtsmen, an article on the SCR522 Conversion, scheduled for this issue, was not ready in time for publication.

This article, which will appear in the April issue, should appeal to all Amateurs who are interested in conversion of service equipment.

From correspondence received, it is obvious that articles of this nature are extremely popular, and it is hoped to publish a series covering equipment now available on the Australian market.

Any suggestions, data, or conversion material our readers may be able to supply, will help to keep this section of the main technical presentation complete. It is up to you to keep the ball rolling.

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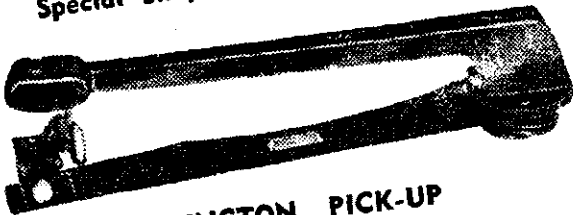
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GRID DRIVE

One important question that is sure to come up in the design of a new transmitter is how much power is needed to adequately drive the individual stages. Tube manufacturers have set up driving power figures in typical operating data, but, unless this information is interpreted correctly, the driver stages may be underdesigned. Here is an analysis of grid driving power as listed in tube operating data which is reprinted from R.C.A. "Ham Tips," Vol. VII, No. 3, 1947.

At higher frequencies consideration must be given to r.f. and transit-time loading losses. If the stage in question is to operate above 30 Mc., it is advisable to provide 3 to 10 times the published low-frequency driving power figure in order to insure sufficient drive plus a reasonable margin for safety.

After the design has been crystallised and the transmitter constructed, tests and adjustment should be made to insure that the stages are being properly driven. If, as in many cases, an amplifier tube is to be operated with conditions differing somewhat from those published under a set of suggested typical operating conditions, the performance can be checked as follows:—First, load the amplifier to the desired value of plate current. Then vary the grid current slowly (tank circuit tuning remaining unchanged) and note the change in output.

If the change in output is roughly proportional to the change in grid drive, the stage is underdriven. Then drive should be increased until very little increase in output results from a large increase in drive. Under this condition, the stage is said to be saturated. Of course, the maximum rated value of d.c. grid current should not be exceeded.

The penalties for an underdriven stage are low power output, low efficiency, and, if the stage is plate modulated, severe distortion at high levels of modulation. The latter condition will readily be recognised as downward modulation, and, if a pure sine wave is used for test, a decrease in average plate current will be noted as the modulation level is increased.

CORRECT GRID DRIVE IMPORTANT

It is very desirable to saturate amplifiers, especially those driven by a series of frequency multipliers. This comes about because it is rarely possible to saturate frequency multipliers and stay within tube ratings. Consequently, a small decrease in supply voltage on the multiplier stages may cause a large decrease in grid drive and in output of the final amplifier stage. It is important, therefore, that the amplifier grid be saturated so that full output is maintained regardless of variations in supply voltages.

It is possible to overdrive as well as underdrive tubes. However, overdrive occurs rarely. There is little to be gained by over-driving and something to lose. Although there should be no actual damage to the grid or cathode unless the maximum ratings for d.c. grid current or d.c. grid bias are exceeded,

over-driving can cause excess harmonic radiation and low power gain.

Over-driving a beam tube or pentode may cause the screen grid to be overloaded before the control grid. This condition may be checked by metering the screen current to determine whether the screen input is within ratings. Adjustment of both bias and screen voltage may be necessary to allow the tube to be properly saturated and still remain within screen input ratings.

The correct amount of grid drive is an important detail of power tube application. With other conditions properly maintained, it insures high power gain, high plate efficiency, and long tube life.

The value of driving power shown in tube data bulletins includes only the actual power input to the grid plus the power lost in the bias supply. It does NOT include r.f. losses that occur in the tube, tank circuit, socket and wiring, or losses in the tubes, caused by transit-time loading.

It is not feasible for the tube manufacturers to give total driving power figures because there is no way of anticipating conditions under which the tubes will be used. Grid power requirements will vary considerably even in well-engineered designs, and the extreme ranges are quite large. It is better, therefore, that printed specifications indicate only the sum of grid power and bias losses.

Because the driver tube must supply all the losses between its plate and the grid of the driven tube, these losses must be added to the figure given in the tube data for driving power requirements. On an average, in the frequency range up to 30 Mc., the losses are large enough to indicate the choice of a driver tube which has a rated output of about twice the grid power rating of the driven tube.

Driving-power measurements are usually made at 100 Kc.—where r.f. losses in the tube are negligible—by measuring the peak r.f. grid voltage (Eg) and the average grid current (Iav). Then, the relation $Wd = 0.9 E_g I_{av}$ gives the driving power in watts. This is the figure shown in tube bulletins.

TO WHOM IT MAY CONCERN

Two manuscripts have been received signed by "Old Hombre" and "Vieille Homme." Would the person concerned be so good enough to furnish me with his correct name and address (which is not for publication), after which I can possibly make use of the contributions. —Editor.

CALCULATING DISTANCE OF QSOs.

By F. S. DAHL*, VK7KA (Portable)

Now that v.h.f. and u.h.f. DX is being achieved, it seems interesting to know somewhere close to the mileage achieved in a contact. This can be done simply by trigonometry, and the following method gives reasonable results without recourse to involved data on the oblate spheroid shape of the earth, to the convergence of meridians and the etceteras of geodesy.

Firstly know your QTH. This can be had by scaling latitude and longitude of your shack from a large scale local map or district survey chart. Since maps are readily available at scales of at least 1" to the mile, a position can easily be fixed within say 15 seconds of arc, which is about 1/2 mile. One minute of arc approximating 1 nautical mile—1.1515 statute miles.

Now suppose Ham A in Adelaide works B in Melbourne, the Cosine of the arc on the earth's surface AB in degrees and minutes equals the sum of two terms.

Firstly, Cosine Latitude A × Cosine latitude B × Cosine Difference in longitude, written—

Cos. lat. A × Cos. lat. B × Cos. diff. in longitude.

The second term is:—

Sine lat. A × Sine lat. B.

Perform these two multiplications then if both stations are on the same side of the equator, add the answers together. This figure is the natural cosine of the angle subtended at the earth's centre by the arc on the earth's surface joining the two stations.

Convert this angle into minutes and this gives nautical miles the stations are apart, and finally multiply by 1.1515 to arrive at statute miles.

If the stations are on different sides of the equator, then subtraction of the terms is necessary. The lesser from the greater.

The following is a worked example:—

Latitude Adelaide S 34° 55' 33".

Latitude Melbourne S 37° 49' 53.5".

Difference in Longitude 6° 23' 27.5".

The first term Cos. lat. Adelaide × Cos. lat. Melbourne × Cos. Difference in Longitude =

Cos. 34° 55' 33" × Cos. 37° 49' 53.5" × Cos. 6° 23' 27.5"

= 0.318984 × 0.789819 × 0.993786

= 0.643544 using natural cosines.

The second term, Sine latitude Adelaide × Sine latitude Melbourne

= Sine 34° 55' 33" × Sine 37° 49' 53"

= 0.572516 × 0.613340

= 0.351147

Add these two results together—

0.643544 + 0.351147 = 0.994691.

Now in your trig tables look up what angle has a natural cosine of 0.994691, and we find 5° 54' 20" which equals 354.333 minutes. Thus the points taken

(Continued on page 9)

*Lands and Survey Dept., Tasmanian Govt. Service, Box 641D, Hobart.

WRITING AN ARTICLE FOR "AMATEUR RADIO"

It is the purpose of this article to give some "dope" to you, on how to impart your knowledge to your fellow Ham via the medium of "Amateur Radio."

In order to have a magazine, it is evident that editorial material be obtained. Naive as it seems, that statement carries plenty of meaning, and is not facetious as it may appear.

We like to receive articles with a basically good idea and which usually can be sent to the printer without a mark (correction) on them. But if the idea is good, we will re-write it if necessary and make it suitable for publication.

Out of ten articles received, for instance, there may be three, four or five which are acceptable as they are written (with the exception of some grammatical and technical corrections or clarifications). Occasionally the prize of them all pops up, an article which has been well written, technically and grammatically sound, and—of all things—with a subject that will be of great interest to the majority of Hams, as well as being technically hot. Yes, this sort of article is a rarity, but all connected with the magazine find it fascinating, because we never know when such a prize will show up.

The following remarks are representative of our collective sins as would-be writers:—

1. We type our manuscripts with no extra spacing between lines and/or with

little or no margins between the writing and the edges of the sheet. Manuscripts should be typewritten, if possible (or legibly written), on paper approximately 8" x 5½", with at least 1½" margins, and double spaces between lines. When the article is written, get the XYL to read it out aloud, you will see at once if it has continuity, and is legible to a person other than yourself.

2. We forget to send one or more pages of the manuscript.

3. We overlook the little matter of writing our name and the title of the article on each sheet of the manuscript, very important if the pages should become detached.

4. We fail to number the sheets consecutively, and sometimes place the sheets out of reading order.

5. We fail to include all constants in the wiring diagram. Draw the schematic clearly, mark all constants, don't worry about making a copper-plate drawing, our draughtsmen will do that for you, they know what is required by the block-makers.

6. We send a print taken on a small camera. A reasonable size print is required for blockmaking. If possible send the negative and advise if you want it returned.

THE SUBJECT

Of greatest importance is the subject, if it is a piece of equipment, expressed by the man without a.c. power, that is acceptable. Many Hams have to use

battery power in Australia. The conversion of a piece of commonly available ex-service equipment, a new antenna, receiver, or some transmitting gear, v.h.f. apparatus—the subjects are too numerous to mention.

The whole thing is so simple; merely sit down and think of what you did first in constructing your equipment or whatever it is. Make a few notes. Then write all about it. Take up the second step and write all about it. If there's some connecting point between the two, as there usually is, write it in the second step so as to make a logical connection. Proceed likewise until your story is finished. That's all there is to it. Let the Editor worry about "polishing up" the continuity of composition.

Calculating Distance of QSOs

(Continued from Page 8)

in Adelaide and Melbourne are 354.333 nautical miles apart. Multiply this by 1.1515 and we have 408.01 statute miles.

Reworking the above example by recourse to Napier's Analogy I got 408.07 miles and by vigorous application of the spherical distortion of the earth's surface and the convergence of meridians, the true figure of 408.0617 miles is obtained.

It appears to the writer that some standard formulae should be adopted for arriving at the distances likely to be claimed in v.h.f. and u.h.f. work and the above formulae presents itself in that it is easily followed and worked.

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TELEPHONE SWITCHBOARDS. 10 line. Good order, from £3 to £12 each. The Units have many uses on farms, &c.

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AMERICAN TYPE C.R.V. 52233. 6 valve, covers 40 and 80 metres Bands. Valve line-up, 2—6N7's, 1—807, 1—VR150 into 2—815's. Two slide in Coils. Phone M.C.W., C.W. An excellent buy at £10, less power supply.

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SPECIAL ATTENTION GIVEN TO COUNTRY MAIL ORDERS.

SUCH NICE PEOPLE

Victorian Divisional Council has ruled that the material contained under this heading must in future be signed by the person responsible for the writing.

I, as Editor, feel that at least "Gremlin" is entitled to make a statement, that I should justify my action in publishing the articles written by "Gremlin," and further, that the two people, who in the first place were responsible for "Gremlin's" appearance, should be permitted to defend their action.

I am aware of the identity of "Gremlin" and suffice to say that his personal integrity is of the highest, his technical ability cannot be challenged, and his writings were inspired by a sincere attempt to clean up Amateur Bands.

Thomas D. Hogan, Editor.

"GREMLIN'S" STATEMENT

Editor, "A.R.,"
Sir,

I understand you have been instructed by Council, Victorian Division, to publish my discourses under my call sign. I cannot agree to this for I firmly believe the article would no longer have the same value—however small—in this form.

Technically, I suppose you cannot accept this for publication minus call sign, but I'm sure Council will grant me the opportunity of saying "Au-revoir."

I am told several people have been greatly offended by my writings. To them I most humbly apologize, assuring

you that at all times I criticised various signs, having in mind nothing more than an earnest endeavour to assist in maintaining the high Amateur standard in VK. At no time were my remarks intended to be construed as personal reflections.

Council, in their wisdom, issued this directive with, I believe, the thought "would 'Gremlin' have the courage to come out into the open?" To my mind, it is not a question of my courage, but one of satisfying the desire of the majority of members. With the ball prettily knocked back into my court, the directive by Council has diplomatically gained the objective—exit yours truly.

Remembering my fore-runner "QRZ" I now silently steal back into the shadows, thanking Hams, one and all, for what to me was a happy association. Especially I thank those many friends who have written words of thanks and encouragement even though many have "had a mention." I have enjoyed it, for I feel I got to know more chaps than when I was a DX chaser.

Cheers and good hunting,

"GREMLIN"

Editor "A.R.,"

We were surprised, in fact astonished, to hear that Council had issued a directive which prohibits further publication of "Such Nice People" unless the real name or call sign of the author is published with it.

We have since had from the President the basic reason for Council's action, and we believe that "Gremlin" has been victimised. We further believe that a

fuller inquiry into the matter would reverse the decision made by Council.

As you know we originally vouched for the character, integrity and the technical ability of "Gremlin."

"Gremlin" will not continue his notes unless under a "non-de-plume." He is not contemptuous, deceitful, insincere, vindictive, or facetious.

His notes if published conditionally, as required by Council, would lose their "news value" for we believe an overwhelming majority of readers first turn to "Gremlin's" column when "A.R." comes to hand. No doubt, as Editor, you are aware of this fact more than we are.

May we ask that you use every endeavour to have Council re-consider the subject, for we believe that the majority of readers desire the continuance of these articles in the magazine.

Assuring you of our support, together with that of many amateurs with whom we have spoken on the subject of "Such Nice People,"

Yours etc.,

HARRY KINNEAR, VK3KN
ARTHUR EVANS, VK3VQ

ANNOUNCEMENT

Interstate visitors are invited by the Victorian Division to avail themselves of the services of the Administrative Secretary, Mrs. Cross, who will furnish suitable introductions and information if requested.

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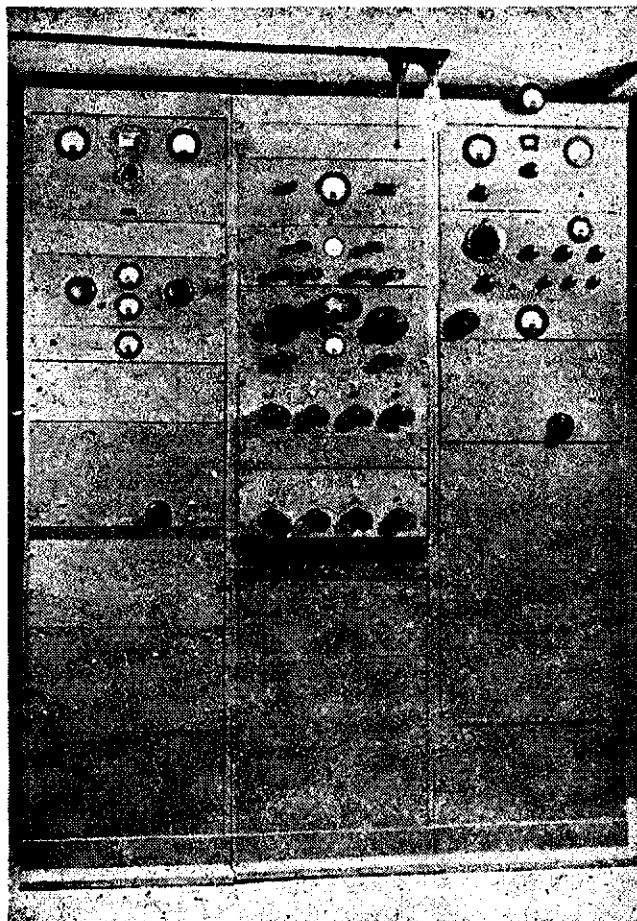
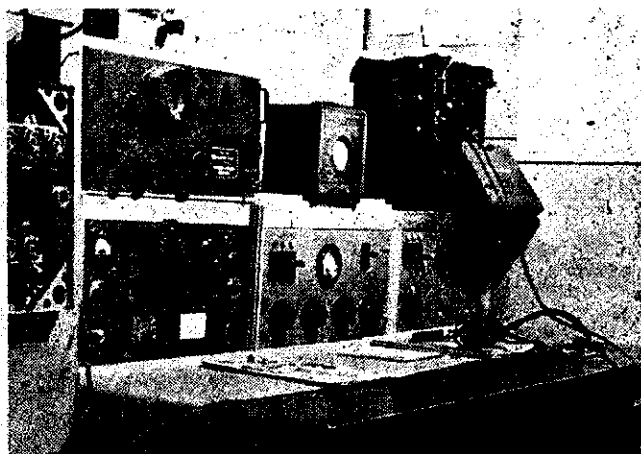
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STATION DESCRIPTION—

VK4WI

The Transmitters and Receivers pictured here are operated by the Queensland Division of the Wireless Institute of Australia under the call sign of VK4WI. The persons responsible for the planing and construction of the station are to be congratulated on the completeness of the gear.

The use of three simultaneous channels for transmission of official broadcasts gives the Queensland Division the widest possible cover for the dissemination of its Divisional news.



The transmissions of the official Queensland W.I.A. station are probably well known to most VK4s and possibly to most VKs. Established in its present form shortly after the present Council started operations, it took over after the original set-up provided by VK4HA, and at present, under the control of VK4FN it operates on the following frequencies simultaneously: 7100 Kc., 14342 Kc., and 52004 Kc. The station commences operation at 0900 hours each Sunday morning when members are invited to join in the usual round table discussion on current topics and items of news. The news for the preceding week is broadcast at 0910 hours, after which the hook-up takes place, and in all nearly 30 members have at one time or another taken part in the proceedings including several

VK2s. Frequency measurements are provided on nights specified in the Sunday broadcast, and this service is widely used according to operator VK4FN.

As you've probably been wondering what's behind the panels, a description of the station follows. The left hand rack starting from the bottom contains: bottom three panels are power supplies; panel with single knob, the modulators; meter panel; 7 Mc. exciter comprising 6F6 oscillator and 802 buffer link coupled to an 813 with 100 watts input.

The centre rack, again from the bottom is d.c. power supply for relays; two racks containing power supplies; a Jack Field; Power Distribution Panel for 14 Mc. transmitter; Relay Panel; Power Distribution for 7 Mc.; an 27 Mc. f.m.

exciter; c.r.o. unit; Modulation Meter.

The right hand rack contains the 14 Mc. equipment, in the usual order; bottom 4 panels, power supplies; Modulator Panel; 14 Mc. exciter made up of 6C5, 6N7, 807 driving an 808 p.a. with 100 watts input.

The antennae used are Verticals, mounted on the one pole. The 50 Mc. transmitter, not shown in the photo, is a DR106, a trans-receiver using a pair of 807s in the final; receiver is a super-het. It is hoped that the next time you listen to VK4FN doing his stuff over this fine set-up you at least will know something of what's going on. The receiving position is self explanatory except to add perhaps that the meter under the Microphone is a power level indicator.

PLATE MODULATING THE BEAM TETRODE

BY E. A. CHARLES, VK5YQ

The good book recommends either feeding the screen via a dropping resistor from the modulated plate supply OR the use of a separate winding on the modulation transformer. Your attention is directed to another method that appeared in an advertisement by Eimac (valve manufacturers) in QST, May 1947. Here the screen is fed via an audio choke (10 henrys or more) from a fixed supply (say, your exciter voltage

supply or from a voltage divider network on the main h.t.).

The screen is then "automatically" modulated because of normal variation in screen current under plate modulation.

It then becomes a simple matter to run the tube(s) at the correct—manufacturers'—ratings. With excessive (or absence of) drive your screen current/voltage doesn't go off on disastrous excursions.

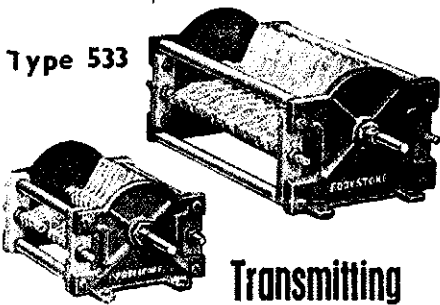
The writer uses a Japanese 8 henry 30 mil. choke in the screens of push-pull 807s (with the usual 100 ohm re-

sistors and 0.001 uF. condenser). When originally tried with a single 807, the same amount of audio was required for a given r.f. input for 100% modulation (on the c.r.o.) as when using the screen dropping resistor. However, a slight increase in antenna current was noticed (antenna was a full-wave voltage-fed zepp) using the choke method.

Your attention is called to two necessary precautions. Firstly, arrange the switching so that the screen voltage is never on without or before the plate voltage; and secondly, on c.w. it is necessary to short out the choke.

You'll Build a **BETTER** Station . . . on an **EDDYSTONE** Foundation!

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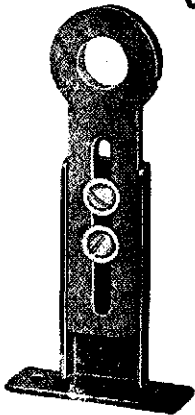


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The Cat. No. 137 Condenser is a Split Stator type, suitable for use in transmitters up to 150 watts input. The vanes, of silver plated brass, are rounded and polished and soldered to the supporting bars. The end plates are die-cast aluminium and Frequentite insulation is used.

Transmitting Condensers

Type 137



Adjustable INSULATED BRACKET

A strong bracket for mounting components which are controlled with a flexible coupler, extension spindle, etc.. The insulated portion, which is made of DL9 material, is adjustable to give mounting hole centres of from 2½" to 3½" above the chassis. The hole size gives 7/16" clearance. The metal one-piece slide is finished

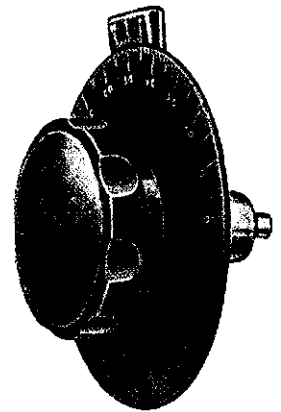
Overall Dimensions (excluding Spindle) - Cat No. 137. — 4½" long (less spindle), 3.9/16" wide, 2¾" high. Maximum capacity 60 pF per section (30 pF overall).
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Cat. No. 533. — 7½" long (less spindle), 4½" wide, 3½" high. Maximum capacity 100 pF.
Flash-over voltage, 4,500 R.M.S. (air gap, 2") £7/8/9

brown and fixes to the chassis by means of two screws

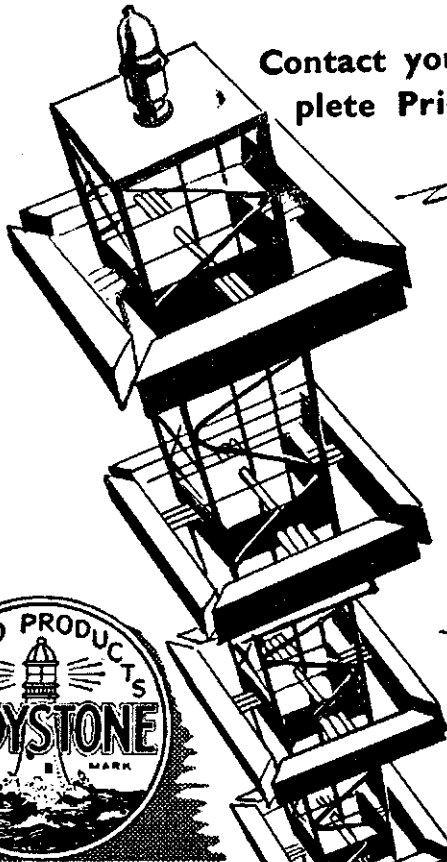
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Slow Motion Dial fitted with vernier reading device 3½" diameter scale and large fluted, instrument knob. Reduction ratio, 10-1. This model is finished in matt black with white fillings.
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FIFTY AND UP

Compiled by VK3QO, to whom all contributions can be sent

DX.—Nothing of very much interest, only general contacts between VK and ZL on several occasions!!! The band was also open over the south, central and eastern half of VK at about the same time, only the VK6s being apparently left out in the cold.

According to reports, the ZLs were first heard in VK2 on the evening of 20th December, while the first VK2-ZL contacts were made at about 7 a.m. on 21st December. The first ZL-VK3, VK7 and VK5 contacts were made later on the 21st. The ZLs were also worked on the 22nd and the 29th, and heard (in VK3) on 31/1/48. Signals were mostly very good with some QSB. The Dunedin S.I.R. report the most intensive Sporadic E they have ever encountered at the time the DX was on. Although the VK4s could hear the ZLs very well they could not raise them and so are rather sour at having missed out.

The ZLs are very up to date; most all of them using the "narrow band" technique, i.e. they tune their Receiver from 50 to 50.5 Mc. only. Many were the curses from VK stations, who, being outside this "charmed circle," called in vain. The band opened for interstate contacts on numerous occasions during December, the best occasions being on the 13th and 21st after which it "tailed off" gradually at the end of the month.

During the afternoon of 24/1/48, VK2AZ worked ZLSAW who came in briefly at approximately 1500 hours. This was done on a ground plane antenna, as a point of interest, whereas VKs 2NO and 2WJ had no luck with horizontal beams. Needless to say quite a number of the boys called rather fruitlessly. On 31/1/48 between 1030 and 1200 hours, ZL1OB was worked by VKs 2NO and 2LY. 2LY was working several of the ZLs during the day, although none of the boys down in Sydney were even hearing them (2LY it up in Katoomba).

VK6s have been heard on 50 Mc. by at least two VK4s. On Saturday, 27th December, VK4HR heard a VK6 but could not get the call, the signal being very weak; and on Sunday, 11th January, VK4XG heard a VK6 peaking at 88, 1250 E.S.T., but as far as we can gather 4XG was so overcome by the shock that he missed the call. The bird was in Subiaco however, and was rag-chewing with another VK6.

During January and February of 1948, 50 Mc. has opened several times between the eastern states, but not many contacts have been made. Keep a watch on the band, fellers, like 4BT. Reports of hearing 60 Mc. foreign signals should include time, date, frequency and remarks; our Editor is a sceptic! (i.e. a 7 Mc. man).

Some foreign DX has been logged by VK3TA in Hortham. On 4/1/48 at 1500 hours he heard KH6GQ at 87. On the following week-end (11/1/48) between 1100 and 1145 hours a series of W stations broke through. Those heard were W8CGV, W2BYM, W6VY, W7KAP and W2BQK. They were working amongst themselves and on the sign-over the calls were given quickly and only once. Their average strength was S7. On the same day at 1250 hours J3AAK was heard calling an unidentified station in Pearl Harbour. All these DX stations were heard between the low frequency end and the centre of the band. Unfortunately VK3TA was unable to call them owing to the transmitter being rebuilt. His beam was down and was using approximately 16 feet of wire (at about 60 degree angle) for reception. This proved better by two S points than a 88 ft. zepp with feeders tied together. He uses a converter (6AK5 r.f., ECH85 mixer) ahead of a AR7 for reception.

On 28/1/48 VK2WJ worked VR2AHM in Wentworth, near the South Australian border. This was 3AHM's first contact on 50 Mc. and he was using about 5 watts input to a fencing wire rhombic. 2OVV, 2NO and 5QR were also worked. VK2GU in Canberra has been getting into Sydney very consistently of late, and has been working 2JU, 2WJ and 2ALD on many occasions. 2PM, of Canberra, understands is a new arrival on 50 Mc.

The last v.h.f. section meeting of the VK2 Division was held on 18/2/48 and was extremely well attended. In the absence of 2NP, v.h.f. officer, down in Melbourne, the chair was taken by Divisional President, 2VM, and the lecture was a very excellent one by Chas. Higgins (2ALO) and Alex Steene, both of C.S.I.R. Radio Physics Lab., who are engaged in the moon radar experiments. Everyone present was quite surprised at the amount of calculation (both astronomic and otherwise) which was necessary before this project was finally put into action. Newcastle and the Coalfields were represented by 2BZ, 2ADX, 2OC and 2RU who once again made the long trip down and back by road. Other visitors

to the meeting were 43M and G8BMV, the latter from one of the ships then in Sydney.

"Short skip" in VK3 has been noticeable in February. Between 3RR at Macrae and 3VL at Red Hill 3 miles distant, rises a hill 1000 ft. high. Until a few weeks ago 3RR had never ever heard 3VL, but signals have been building up and contact should be possible soon. 3UI at Tatura (95 miles over ranges) has worked 3BQ and 3ABA in Melbourne. 3ABG with his new 4 element beam 55 ft. high can now work the Melbourne boys also. 65 miles away over rough country, 3VL and 3CI at Foster (68 miles) have worked cross-band and 3CI has heard 3HZ. 3BW has heard 3HZ (72 miles) strongly lately. 3BQ still keeps lonely DX vigils at 1200 and 1500 hours each day on c.w. (3RJ note!)

The 55 Mc. VK3 field day on the 11/1/48 was notable mostly for the country stations that were on. 3YS and 3ABA took their gear to Mt. Tar-ranower, 76 miles N.W. of Melbourne and 2000 ft. high. Quite an interesting day, good weather and enough contacts to keep them busy from 1330 to 1830 hours. High police level was noticed. 3US-3VL went to Arthur's Seat and contacted many stations. 3ABG was working from his usual location at Avenel. 3UI at Tatura had a number of fairly good contacts with Melbourne. 3FF, working fixed portable at Korop (about 95 miles north of Melbourne) was also worked by the Melbourne boys, though fading was present. 3RR, fixed portable at Macrae, was as usual well "stuck into them." Do microphones wear out with constant use?

These field days seem to encourage the country chaps very much and the continuance of 50 Mc. field days is desirable if only for that reason.

During Xmas holidays 3VL-3US (Rex) and his XYL Gwen took their portable to Ballarat and district and worked everything on the band. Tx was 6V6 e.c.o. into 6V6 p.a.; Rx was 0002, 6SJ7, 6CG6; 4 watts input. Later they went to Yallourn where they worked 3HZ. 3ALS drove them to a hill outside Yallourn where a CQ netted 5GI, which gave 3ALS a big surprise! 3HZ, 3AKM, 3HK and 3YJ were also worked. On the way home they worked 3AKM and 3HZ mobile.

PERSONAL PARS.

2JU and 2NP have worked 2GU in Canberra consistently, a matter of 180 miles, and 2JU has been getting reasonably consistent results with the chaps in the Young district. G3WBNG is now settled in Sydney and uses the call VR2AGW. G8PO and G5UB/VETALG (mobile marine) also visited Sydney. The mobile marine tests will be repeated when he sails again in a few weeks. 2TI, 2PF and 2PJ managed to be present at the v.h.f. section meeting and were warmly welcomed.

There is a movement in VK2 to populate the higher end of the band. It was noticed when the DX came so thick and fast that ORM was quite a problem between 50 and 51 Mc. whereas there were only a few voices "crying in the wilderness" from 51-54 Mc. We have no proof whatever that DX only comes to the lower end of the band, in fact 2NO has repeatedly heard some ZLs working around 53 Mc. The VK2 boys when calling, intend to state that "this station will look over the band, starting at the HIGH frequency end." Stations should also sign in c.w., it is felt, as weak phone stations can't be always copied.

In VK3 the country chaps are slowly building up a network, the latest addition being 3DI at Leon-gatha who has worked 3HK and 3VL. 3KX at Colac has also been heard. The boys at Ballarat are by now only rated as "local" contacts.

3RR, 3BD, 3HK and 3HD have been making f.m. tests on 50 Mc. 3HK and 3BD use v.f.o.s. and reactance tube modulators and modified link receivers. 3RR uses an 3.4 Mc. xtal and "narrow band" modulation and a standard AMR receiver in its sharpest position. Results so far are inconclusive, although it appears that a certain level of signal is needed to make the limiters work properly.

3VL is keen. Lacking a car, he piled his portable gear in a wheelbarrow and pushed some a mile or so up a hill, and then was unfeignably ready to sit down and just QSO for a change! 3EH is busy on separate rigs for 50, 28 and 14 Mc. Intends next S meter of 20 "round and round" (due to 3RR's new rig). Next Rx to be RL7, RL18 and CV6 osc.

Ray Jones' outburst on page 21 of February "A.R." concerning 50 Mc. "sulcet windy verbosity" calls for answer. There is far less "tripe" on 50 Mc. than on the lower frequency bands as the boys are too busy discussing special v.h.f. problems; the fact that Ray listens on 50 Mc. proves this. "Absence of c.w." is most probably due to his Rx which (by rumor) is a "rushbox"!!! 3BQ, 3CP, 3PG,

3HT, 3HK, 3YS, 3ABA, 3BD for example, all use c.w. and if Ray calls on c.w. he will have plenty of contacts—from blokes after his blood!

In VK4 ex-4LP, ex-2YQ, has been taking his broad band converter to different shacks. 4ZU has a 4 element wide-spaced beam at last! 4RB has a reflector which prefers to be a director. The Brisbane boys are seeking the co-operation of the country boys in extended ground wave work. It is felt that the use of beams will help considerably; also calls on c.w.

The only outstanding performance in VK1 of late was the reception of 4ZU by 4AB at Palm Beach at 59. The distance is only 50 miles, but it represents the best local DX worked yet in the Brisbane area. Details—4ZU used a 4 element horizontal array, 4AB a Kingsley Converter and a combination of a 7 Mc. zepp and a 50 Mc. vertical. A two-way test the next week failed due to the

(Continued on page 23)

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FEDERAL, QSL and DIVISIONAL NOTES



Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Cooberge.

Zone Correspondents.—Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, Canonba Street, Nyngan; South Coast and Tablelands: L. H. Vale, VK2ANN, Box 73, Bega; Southern: E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury.

VICTORIA

Secretary.—A. B. D. Evans, VK3VQ, Box 2611W, G.P.O., Melbourne, Telephone: FI 6997.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: B. Sactrine, VK3BI, 17a Raglan Street North, Ballarat; North Eastern: D. Tacey, VK3DW, 18 Harold St., Shepparton.

FEDERAL

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

VK2AJB—G. C. Currie	Unknown
VK2BQ—F. Easton	R.A.A.F.
VK2JV—C. D. Roberts	A.M.F.
VK2VJ—Y. Jarvis	R.A.A.F.
VK2YK—W. Abbott	R.A.A.F.
VK3DQ—J. D. Morris	A.M.F.
VK3HN—J. McCandlish	A.M.F.
VK3IE—J. E. Mann	R.A.N.
VK3NG—N. E. Gunter	M.N.
VK3OR—M. D. Orr	R.A.A.F.
VK3OW—G. L. Templeton	R.A.A.F.
VK3PI—J. L. Colthrup	R.A.A.F.
VK3PV—R. P. Veall	A.M.F.
VK3SF—S. W. Jones	A.M.F.
VK3TW—J. A. Burrage	R.A.A.F.
VK3VF—J. E. Snaddon	R.A.A.F.
VK4DR—D. Laws	A.M.F.
VK4PR—R. Allen	R.A.A.F.
VK5AF—C. A. Ives	R.A.A.F.
VK5GF—G. Phillips	A.M.F.
VK5 ?—J. Mann	R.A.N.
VK6GR—A. H. G. Rippen	R.A.N.
VK6JG—J. E. Goddard	R.A.A.F.
VK5KS—K. Anderson	A.M.F.
VK7LP—L. P. Hyland	A.R.P.

The above names and details have been received by Federal Executive. Anyone knowing of any name not included on the above list or errors therein should communicate with F.E. at the earliest.

ANTARCTIC EXPEDITION

Federal Executive are pleased to announce that arrangements were made (and only finalised at the last minute) for the licensing of an Amateur on the I.M.A.S. "Wyatt Earp," the vessel being used by the Australian National Antarctic Expedition. The call is VK1AA and the operator Mr. Ted McCarthy. The W.I.A. arranged the loan of a Type 3 Mark II and crystals of 7019, 7027, and 7186 Kc. The station will operate on 7 and 14 Mc.

The Federal Executive are making arrangements to have QSL cards printed and these will be sent out on the vessel's return to the mainland. Please send your QSLs care of VK3UM. Cards will be sent out only on receipt of incoming QSL.

All Amateurs are urged to adopt fair operating practices and keep v.f.o.'s off the frequencies above when the station is in operation. The first contact honors go to VK5CR, Charlie Cheel.

CERTIFICATES

The various certificates mentioned in these notes last month are now completed and outstanding DX Contest Certificates for the 1946 and 1947 Contests will be the first to be issued. There are some 300 to be made out and signed so please bare with us a while longer. Due to postage difficulties, certificates for each Division will be sent to the Divisional Council for issue to the winners.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 30.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7168 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

From VK6WH.—Sundays, 0930 hours WAST on 7168 Kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

GERMAN CALLS

It has been learned that the American Occupation Forces in Germany are now being issued with new prefixes. Those so far known are:—

- DA1—Stuttgart;
- DA2—Munich;
- DA6—Hamburg.

EXTRACTS FROM I.A.R.U. CALENDAR TO THE FEDERAL EXECUTIVE

W.I.A. Convention Proposal Submitted to Member Societies

At its 1947 Annual Federal Convention, the W.I.A. directed its Federal Executive to approach I.A.R.U. and "seek international member-society comment on the desirability of sub-dividing the high frequency amateur bands into phone and c.w. sections." An appended note by the Society's Secretary mentions, "We feel that any such sub-division should be on a voluntary basis rather than being achieved by government regulations in each country."

A world-wide agreement, or series of regional agreements, on the division of our bands as between phone and c.w. would indeed be a marked step forward in Amateur Radio. There are many practical problems which must first be solved, however, and we would be remiss if we did not mention them. Perhaps the principal difficulty is the differences in attitude shown by the amateurs of various countries toward the two modes of emission. For example, in many countries the interest seems to run about two-thirds c.w., one-third phone; but in some countries such as those of Latin America, the interest is about 90 per cent. phone. Then, there are technical aspects of the problem—propagation conditions and, to some extent, power permitted amateurs in each country.

Another difficulty is the fact that under international and regional treaty allocations, the available widths of amateur bands differ in various countries; this is especially true under Atlantic City as concerns the 7 Mc. band. Finally, the successful working of any such agreement, voluntary or backed up by regulations, depends entirely upon whether UNANIMOUS CONSENT to and OBSERVATION of the agreement can be had. One small group of amateurs failing to observe an otherwise-agreed scheme would disrupt the entire plan.

In a practical approach to this problem, we must revise our thinking that it is simply a matter of making up a chart and dividing the bands as between (1) phone and (2) c.w. Actually, as a purely technical matter arising from the great number of U.S. amateurs, there must be three classifications:—

- 1—U.S. phone;
- 2—Non-U.S. phone;
- 3—C.W.

Because the frequencies assigned to phone in the United States are well occupied with signals of

QUEENSLAND

Secretary.—R. Thorley, VK4RT, Box 638J, G.P.O., Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor: H. T. MacGregor, VK4ZU, "Moquet," Eldon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, Howard St., Perth.

Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—R. W. S. Hugo, VK6KW, 8 View St., Subiaco.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—W. W. Watson, VK7YY, 12 Cromwell St., Battery Point, Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

considerable strength and the frequencies are therefore "monopolized," it has been the custom of non-U.S. phone stations to operate outside the U.S. phone bands. Usually they locate themselves just below the United States assignment, as a matter of habit as well as indicating a desire to remain as close as possible to U.S. phone bands so that two way contact may be facilitated. The existence of these non-U.S. phones has a considerable effect on the usefulness of the remaining "c.w." band, since the channels they occupy are not useful at all for c.w. work. In any band division, then, if we chart c.w. as "white" space and phone as "dark" space, there is an intermediate area of indeterminate width which will be occupied by non-U.S. phone stations.

In fact, A.R.R.L. points out that in its own internal band-division on frequencies of international range, it is obliged to take into account the effects of non-U.S. phone stations operating in what (by U.S. regulations) is technically solely a c.w. band.

All these factors are well appreciated by planning groups of member-societies which have studied the international effects of our bands as between phone and c.w. V.E.R.O.N., for example, gave study to this general problem some months ago (as published in the December 1946 issue of QST) and forwarded a proposal to I.A.R.U. The Headquarters asked V.E.R.O.N. that its suggestions not then be considered a formal proposal for the Calendar, because of the imminence of the Atlantic City Conference.

R.S.G.B. has taken perhaps the biggest step forward in international band-planning. Its Council has established a Codes of Practice Committee having, among other duties, the task of studying amateur use of bands on an international basis, and making specific recommendations for band divisions as between phone and c.w. Realising that it is more than a one-society problem, R.S.G.B. has written each of the European societies to ask whether there is sufficient interest to form a regional study group. If the responses are encouraging, R.S.G.B. expects to convene a meeting of representatives of European I.A.R.U. societies to discuss band-planning. Any specific recommendations resulting from such a meeting will be placed before I.A.R.U.

Headquarters will be pleased to have the further comments of member-societies on the W.I.A. suggestion.

CONTESTS

At the same meeting, W.I.A. discussed the matter of world-wide contests sponsored by individual member-societies. It was noted there had been some difficulties resulting from failure to notify amateur societies of the world sufficiently far in advance of the contests to permit amateurs generally to become acquainted with the competitions. It is W.I.A.'s suggestion that member-societies, when planning operating contests of international scope, arrange to release announcements and rules-data well in advance so that they may be picked up

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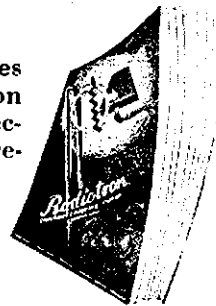


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and published by the official organs of other societies. In this connection, "I.A.R.U. News" will be glad to receive and publish any such contest announcement material.

MEMBERSHIP CHANGES

The Headquarters feels it necessary to delete from the membership list the name of the Experimental Radio Society of Egypt. No word has been received from the Society since the war. Correspondence to the pre-war address has been returned. Allied servicemen in Egypt, requested by the Headquarters to trace the society's whereabouts, have not been successful. The Headquarters is obliged, therefore, to drop E.R.S.E. from the membership roster.

We are delighted to announce the re-establishment of our Netherlands-Indies member, N.I.V.I.R.A. Active in the re-organisation work have been J. A. M. Willems, PK1AG; A. te Riet, PK1RI; L. A. Monlils, PK1EH; P. W. G. Pool, PK1PD; and J. W. A. Micola, PK1MF. An office has been established, with mail address as Post Box 199, Batavia (Java). The society is obliged to report, however, that a temporary government measure exists which prohibits the operation of amateur stations in the Netherlands Indies.

As a result of ballot taken by Headquarters three Societies have been admitted, namely:—The Chinese Amateur Radio League (C.A.R.L.) as the member society for China; The Radio Club de Chile (R.C. Chile) as the member society for Chile; and The Radio Club Paraguayo (R.C.P.) as the member society for Paraguay.

Speaking on behalf of the other members of the Union, a number of whom expressed sentiments of congratulations, the Headquarters extends to C.A.R.L., R.C. Chile and R.C.P. a cordial welcome and hearty good wishes.

The I.A.R.U. section in South Africa has changed its name, and is now known as the South African Radio League. The League felt that the word "relay" in its name did not properly reflect the full scope of the society's aims and interests.

The S.A.R.L. writes as follows:—"Our Council is perturbed at the number of amateurs in different parts of the world who flagrantly and deliberately disregard the rules of amateur operation, and, in particular, who operate outside the amateur bands. By this type of operation they receive an unfair advantage over the law-abiding amateurs. It is felt that such amateurs should be disqualified from obtaining such honours as the W.A.C. Certificates, DX Century Club and so forth.

"The South African Radio League therefore proposes that any amateur who is deemed to be guilty of out-of-band and any other illegal practice should be disqualified from receiving W.A.C. and other I.A.R.U. awards for a period of twelve months from the date of the offence, and that all contacts prior to the date of the said disqualification should be considered as void."

S.A.R.L. has agreed, in correspondence with the Headquarters, that this should be a subject for society comment but should not, at least at present, constitute an official proposal. The Headquarters would be glad to hear from additional member societies in this respect.

NEW MEMBER PROPOSED

The Isienzkir Radio Amatorar is the national amateur society for the Republic of Iceland. It has a total membership of 214, including all licensed amateurs, who number only 9. The official address is P.O. Box 1080, Reykjavik. Membership dues are 24 kronur per year, equal to 3.70 dollars in U.S. currency. Present officers of the society are: E. Palsson, President; S. Biarnason, Vice-President; I. Matthiasson, Hon. Secretary; E. Hagan, Hon. Treasurer.

In addition, there are three directors. The society maintains liaison with government authorities, and has obtained the issuance of amateur licenses. At present, operation is permitted on amateur bands above 14 Mc., similar in width to those of the Scandinavian countries. The society publishes a magazine, "Útvarpstíðindi," and maintains a QSL bureau system for its members.

The Danish section of I.A.R.U. in past years has claimed representation on behalf of Iceland, but E.D.R. has informed the Headquarters that it now fully supports the membership application from I.R.A.

Federal Executive of the W.I.A. have recorded an affirmative vote in this regard.

CHANGES TO CALL SIGNS, ETC.

Alterations:—

- VK2ABZ—W. F. Bardin, 6 Lepington Ave., Eastwood, N.S.W.
- 2ACU—R. Pike, c/o. Coonamble Ice Works, Castleknagh Street, Coonamble.
- 2AGA—T. E. Ham, 36 Hampton Court Road, Carlton.
- 2AJY—J. B. Jarman, 38 City Road, Chippendale.
- 2BW—A. S. Moye, P.O. Box 72, Wagga Wagga.
- 2DR—D. W. Reed, 69 Pacific Highway, Waitara.

- 2IU—M. J. McDonald, 40 Carabella St., Kirribilli.
 - 2KN—C. F. Peddell, 107 Kemp St., West Kempsey.
 - 2LA—L. K. Adams, 19 Norman St., Wollongong.
 - 2LB—S. Boryss, 113 Darling Point Rd., Darling Point.
 - 2NH—N. L. Ancher, 16 Coronation Ave., Mosman.
 - 2RZ—R. B. Dufty, "Bannerman Court," Bannerman St., Cremorne.
 - 2VW—V. H. Wilson, Wilson St. and Maxine Pde., Maroubra.
 - VK3AKA—K. H. Hughes, 90 Kennedy St., Castlemaine, Vic.
 - 2ANC—N. H. M. Chapman, Gibson St., Trafalgar.
 - SASD (in lieu VK7KA)—O. S. Dahl, c/o S.E.C., Kiwua.
 - 3FW—W. A. Fulton, Eurole St., North Balwyn.
 - 3FY—W. G. Clark, Wallace Ave., Hughesdale.
 - 3IQ—K. J. Duff, Carisbrook, via Maryborough.
 - 3IU—T. J. Coakley, 24 Wild St., Regent.
 - 3IX—C. J. Reed, 750 Barkly St., West Footscray.
 - 3LW—R. W. Cranch, 107 Green St., Richmond.
 - 3MR—M. R. Campbell, Clyde.
 - 3OD—F. C. Deaman, "Titinga," Lismore.
 - 3UW (in lieu of VK6NP)—G. S. Bemrose, 22 Mary St., Coburg.
 - 3WD—W. D. Mather, 59 Carroll Cres., Gardiner.
 - 3XV (in lieu of VK5CA)—C. R. Anderson, 38 Holloway Rd., Sandringham.
 - VK4VK—R. A. J. Taylor, c/o Station 4VL, Alfred St., Charlesville, Qld.
 - VK5BD—D. R. Briggs, Jarvis St., South Plympton.
 - 5CG—C. G. Cleveland, 3a Stanley St., Leebrook.
 - 5MJ—J. H. Mickless, Thirlhall Ave., Sunnyside.
 - 5TL—T. Laidler, Jetty Rd., Largs Bay.
 - 5WK—A. E. Prince, Camroc Ave., Plympton.
 - VK6AY—A. V. Trosidder, 22 French Ave., Merredin.
 - 6EI—A. W. Grogan, Port Hotel, Carnarvon.
 - 6RB—E. F. Robins, 32 York Rd., Northam.
 - 6RG—E. R. Harvey, Sackville Tce., Scarborough.
 - VK7LE—L. W. Edwards, Strickland Ave., Hobart.
- Cancellations:—
 VK2AMH has not been cancelled—F. J. Carey, 35 Ridge St., North Sydney.
 VK7JW—J. C. Wallis (deceased), Marlborough St., Longford, Tasmania.

New Issues:—

- VK1AA—E. McCarthy, H.M.S. "Wyatt Earp," National Antarctic Expedition.
- VK2DK—A. C. E. McCartney, Mulgate Stn., Narrabri.
- 2KK—A. F. Stoker, 209 River St., Ballina.
- 2ME—E. J. Kerkin, 35 Norfolk Rd., Epping.
- 2MF—C. M. King, 11 Albert St., Corowa.
- 2NV—D. G. Gilder, 17 Onslow Ave., Elizabeth Bay.
- 2OL—L. L. Squire, Karuah St., Thornton (Portable).
- 2SB—R. W. Chaplin, 80 Ray Rd., Epping.
- 2SC—S. M. Waters, 8 Short St., Glagesville.
- VK3AO—D. A. Greenham, portable of VK3CO.
- 3CW—K. J. Millbourn, 5a Melville St., Hawthorn.

- 31Y—A. P. Thornton, 23a Maud St., North Balwyn.
- 2JM—M. D. Lodge, 5 Birdwood St., North Essendon.
- 300—G. E. Wardle, 158 High St., Aahburton.
- 30X—J. W. Watson, 127 Dundas St., South Preston.
- 3PV—D. B. Shaw, 682 Glenhuntingly Rd., Glenhuntingly.
- 3QV—W. J. M. Bridge, 14a Crisp St., Hampton.
- 3UB—H. L. Byrne, 21 Wolsley Gve., Brighton Beach, Vic.
- 3VB—Mrs. C. M. Adams, 7 Wellman St., Box Hill.
- VK4MP—Rev. M. C. Pay, 186 Chatsworth Rd., Coorparoo.
- 4RU—W. W. Newman, Collinsville.
- 4SF—S. J. Ford, 75 Station St., Roosal.
- VK5CD—C. A. Doddridge, Keyneton, S.A.
- 5CZ—R. I. Scott, 82 Pulsford Rd., Prospect.
- 5LA—R. N. Lane, 3 Farah Place, Redfern West.
- VK6XP—F. R. Whitfield, Kojonup Rd., Katanning.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

DEM6753 ex-D3FBA, Waldemar Kehler, 24b, Husum-Nordsee, Kampsiedlung-Lund 17, Schleswig-Holstein, Brit.-Zone, Germany, in requesting confirmation of a report, states, "QSLs are the only connection of German Amateurs with our friends abroad. I think we have to wait long time for restoration of our licences and would much desire to exchange magazines, stamps and friendly correspondence with any amateur station."

Advice from Belgium notifies the death, on 1st November, 1947, of Maurice Caron, 30 rue Thiere, Boulogne-sur-seine, France. Maurice was a short wave listener of many years' experience and well known throughout the amateur world.

Barry Clarke (VK2ADR), of Broken Hill, has returned to the VK5 area as from January. He is now located at "Warrandyte," Karong Ave, Mirroon, via Edwardstown, S.A., where he will operate under the call sign of VK5BS. VK5 and VK2 QSL Managers please note.

The C.A.V.—national society of the Czech Amateurs, wishes it to be known that a pirate station is very active on all the amateur bands using the call sign OK3AA. It is believed that the pirate station is located in Central Germany.

The QTH of the re-established Amateur Society in Hong Kong is H.A.R.T.S., P.O. Box 541, Hong Kong.

16ZJ, G. Chiffey, advises that the following stations are operating in Eritrea:—

- 1AUSA, U.S. Army Radio Station, APOS43, New York.
- W6VKV16, U.S. Army Radio Station, AP0843, New York.
- 16AB, QSL via A.R.I. (He is ex-11AHC/16 and ex-17AA.)

T R Y

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MD3AB (in operation shortly) Eritrea Signal Squadron, M.E.L.F.5.

16ZJZ (QSL via R.S.G.B.)

ET1JJ (now QRT) was actually in Eritrea and NOT in Ethiopia. He did not and will not QSL.

HE1EO, located at various towns in Liechtenstein, is quite authentic and is the portable station of HB9EO, Ralph Graub, Farberstr 37, Zurich 8, Switzerland. He was touring Liechtenstein during the latter months of 1947.

For the Philatelists:—CE4BP, Sergio Lairain, Casilla 27, Paural, Chile, South America.

Vic Shilcock (VR2VS) hopes to get active on 50 Mc. from Canberra very shortly, and is removing gear from his home QTH in Sydney for the purpose.

ON1HC is on 3415 Kc. daily from 0500 to 0700 GMT endeavoring to contact VKs and ZLs.

The following is an up-to-date list of licences in FH:—VR2AD, 2AN, 2AO, 2AP, 2AQ, 2AT, 2AU, 2AY; all active on 28 Mc. and all located at Nadi Airport; 2AR Laucala Bay, 2AX Laucala Bay, 2AW Suva, and 2AS the QSL Manager, Stan Mayne, Box 184, Suva.

Jim Wetherall (G5UB/P) left Sydney for VE/W on 4th February and will be on 7, 14, 28 and 50 Mc. Jim hopes to give the "Six" gang some unusual DX whilst he is around the islands. He will be able to reply to 50 Mc. calls on any of the four bands if anyone desires or conditions demand a crossband contact. He will be returning to VK from W/VE in a few months and the same opportunities will again exist. Jim is always on the Ham bands around 1000 GMT.

NEW SOUTH WALES

NEWCASTLE ZONE

2BZ is doing good work on 50 Mc., and worked 2CI—225 miles distant. 2AHA mainly on 14 Mc. 2CS has 50 ft. mast up, won't be long now. 2PQ has new shack and promises himself a 28 Mc. rotary. 2TE with a new welded rack is going ultra modern. 2AFS is changing from series to plate modulation. 2AGD waiting with fine phone on 28 Mc. for the band to really open. 2ANG going back from v.f.o. to crystal. 2ADX in Maitland is putting nice signals into Newcastle on 28 Mc. Congrats to 2DGC on winning 14 Mc. section of the VK DX Contest. 2AMM is on 7 Mc. from new QTH. The XYL is interested in radio too. 2MC, a new Ham, is putting out a nice signal on 7 and 14 Mc. 2CI helping the new boys a lot. 2AMU getting some fine DX. 2FP has been away on holidays.

WESTERN ZONE NOTES

Congratulations to Gordon and Dr. Freddie of Dubbo with new A.O.C.P., will both be heard shortly. 2II is busy revamping Receivers for various members. 2VII has one of the above mentioned BC348s; V beam still won't work. 2NS also has a new receiver, and a W.A.C. in two hours on 14 Mc. 2AGU also has a new receiver; where do they come from? 2ACT operated portable in the mountains while on holidays. 2AMR has completed the shack and is resting on his laurels. 2HC has been reported on 7 Mc. 2TG and 2ALX, of Orange, are both plugging away at DX C.C. 2EI, an old timer, has been heard again. 2IE still on 14 Mc. chasing DX. 2EX working 7 and 14 Mc. bands with varied V beams in the trees. 2AII has revamped the rig and has a new ARS. 2QA has a new speech amp. (no one would have known). 2HZ allowing two weeks of his holidays to complete receiver. 2LY, with 50 Mc. beam on VK3, wants one to catch up with gang. 2AFO going on 50 Mc. also. 2LZ still on the v.h.f.

COALFIELDS AND LAKES ZONE

2MK broke out on 7 Mc. again or should the prepositions be reversed. 2PZ used his holidays to re-organise shack; with 2XT toured Newcastle shacks collecting more gear? 2KF on 14 Mc.; "rock crushing" tritet defeating attempts to make 2S Mc. 2KZ firmly convinced no Hams in Vermont on 28 Mc. phone, nearly prepared to give up idea of W.A.S. 2ADX appeared on 28 Mc. from 166 Mc. after working with 2FY, both complain others are using their calls, QSLs can be collected. 2OC busy on new 28 Mc. rig with special allowance for 2I Mc. 2RU with a new four element beam on 50 Mc. turns it on the line transformers to burn them up. 2AMU busy with a new receiver. Zone Officer (2YL) is laid low in hospital and all members hope for a speedy recovery. 2ADT back after six weeks' holiday; unlike the DX, the good ones all got away.

VICTORIA

The monthly meeting of the Division was held at the Melbourne Technical College on the 4th February. Visitors introduced and welcomed were 2ZB, 3GZ, 5ME, 5CU, and 6DX.

Following a suggestion by Mr. Marshall, it was decided to develop an informal discussion group at the Institute Rooms to take place before each general meeting. The first of this gatherings proved to be most successful and was especially appreciated by those members who remain in the City on the night of a general meeting.

A brief explanation of the items which had been accepted for the Agenda of the State Convention was given by the President, Mr. Cunningham and further items were then submitted by members.

A suggestion of showing some mark of respect at the general meetings for any Amateur who has passed on was sympathetically received and the Federal Councillor was requested to refer this matter to Federal Executive for consideration.

Mr. Neil Smith was introduced and provided an interesting demonstration by the use of a graph to be used in determining ionospheric predictions. It is hoped that Mr. Smith would be able to go more fully into the subject for the benefit of members at some future meeting.

The State Convention, at which approximately 50 members were in attendance throughout the day's proceedings, was held in the Institute Rooms at Queen Street, Melbourne, on 7th February, the Divisional Zones being represented by Mr. Bruce

Mann (8BM) from the North Western Zone, Mr. Howard Wollers (8YV) North Eastern Zone, Mr. G. Weynton (3XU) Western Zone, and Mr. W. Ross (3UT) South Western Zone.

Other members from the country included W. J. Kinsella (3AKW), Lubeck; H. B. Dobbyn (3MF), Mildura; R. N. Whalley (3WZ), Wangaratta; G. S. Vincent (3AGV), Colac; R. Tandy (3KX), Colac; M. Folia (3GZ), Mildura; W. H. Barber (6DX), Kalgoolie, W.A.

Mr. R. Cunningham (3ML) presided and addressed the Convention; "the object of the Convention being held was to direct Council activities for the following year, so that Council could plan and formulate a policy for the future. Then continuing, "As the Victorian Division has a very strong country membership, the Zones should have an opportunity of voicing their opinions on administrative matters and it is at these Conventions that the representatives can do so."

The Agenda as presented for discussion contained 29 items and of these, the items relevant to the Zones were grouped for purposes of general discussion and representatives spoke in turn on behalf of their Zone.

Arising out of these discussions has been the decision to form a new Zone within the Division and it is to be known as the Far Northern Zone. This Zone is beyond a line from Pinaroo to Nyah and takes in Mildura and Ouyen.

From the comprehensive list of items debated, seven of these have been put down for inclusion on the Federal Agenda and a recommendation made that the attention of the Federal Convention be invited to the Editorial in QST of December, 1947.

All remaining items were fully discussed to some length and at the close of the debate on all matters the Convention terminated at 6.45 p.m.

Intimate details of the day's proceedings and motions were fully broadcast from 3WI on the Sunday morning broadcast of 15th February for the interest of all members.

Following the more serious side of the Convention the first "Ham Fest" was held the next day, Sunday, 8th February, at the National Park, Yarra Bend, and with Melbourne weather at its best for this social occasion members and families enjoyed the outing to the fullest extent. During the afternoon footracing and novelty races were held for the children and adults, handsome prizes being provided.

T.A.C. MEETING

At the January meeting of the Committee, activities during 1948 were discussed generally. Among the suggestions put forward was a request for a practical summary of the published ionospheric prediction data, to be presented in a form, which if not embracing all conditions to be met with, will at least provide some useful information in a readily assimilable form for amateur use. T.A.C. expect to be able to supply this information during 1948, both for publication in the magazine and for broadcasting from VK3WI.

V.H.F. Group

At the January meeting of the group VK2KI and VK2NP were present as visitors, and were able to give an outline of v.h.f. activities in the N.S.W. Division. VK3EM brought along his modified SCR522 receiver and this was examined with great interest by those present. The v.h.f. group meets on the second Wednesday of each month.

Receiver Group

At the January meeting of the group tracking problems in superheterodyne receivers were discussed. The uses and limitations of the theoretical formulae were commented upon and Mr. George Neilson described suitable practical means of adjusting a receiver to give exact tracking at three points in the tuning range. Tracking problems at very low and very high frequencies were discussed and the necessity for correct design of the aerial coil to suit the antenna used was mentioned. The receiver group meets on the fourth Wednesday of each month.

FOOD FOR BRITAIN FUND

At the last general meeting of the Division, a collection for the Appeal was made and yielded the sum of £19/5/11. This brings the total receipts to 3/- under £250 since the Appeal commenced in April, 1947. Total expenditure on food parcels amounts to £201/9/11 which represents 250 parcels. The Fund is still in hand with a balance of £48/7/1. The Committee wish to thank 3CN, 3JK and 3BP for recent generous donations. What about some donations from the Eastern Zone, Graham?

CENTRAL WESTERN ZONE

Zone hook-up last month was notable for its short and snappy procedure. Apparently there was a State Convention on in Melbourne so only two stations were on, 3EP and self, so not too much information came from that. The big news of the last four or five weeks has come from 3TA and 3WC in Horsham with their reception of 50 Mc. sigs from KHC and W in addition to ZL. The most surprising part of it was that 3TA was only using a plane antenna two waves long straight to his antenna

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terminal. Byron uses a Kingsley Converter ahead of an AR7 and Claude a double conversion super GAK5 to a ECH35 to 10.7 Mc., then to 455 Kc. Claude is also building a 100 watt Transmitter for 50 Mc. using 829 so should be in the running when the band comes good. Ye scribe is getting excellent reception also from the local doctor's diathermy machine about half a mile away.

There is no doubt that fashion moves in circles. Heard 3IQ from his new QTH busy working 3GN one Saturday night, and was amazed when Kevin mentioned he was using an E406 in a Hartley oscillator with 6 watts and, believe it or not, LOOP modulation ("Gremlin" please note what you missed). However the quality was better than others heard on the band.

3XC has erected a three element beam for 50 Mc. and is building a transmitter and converter for that band. 3IQ has a self-excited job on 50 Mc. and reckons to work at least into Maryborough.

3DP is busy with a new shack, and when everything is finished and Jim gets his AT5-ARS combination going he will have an f.b. set-up. 3AKP is at present bogged down with power leaks; tough Keith when you help make the juice that makes the QRM. However Stawell is due for further QRM as two of the locals are busy sweating.

Apart from the beautiful diathermy notes heard on 50 Mc. ye scribe by some outstanding miracle worked LU4DJN on 14 Mc. so after nearly 10 years trying has at last made W.A.C. Incidentally LU4DJN had I suppose what one might term a 1925 note. Well gang that's all for now—see you next hook-up—Sunday, 7th March, 10 p.m. on 7050 Kc.

NORTH-WESTERN ZONE

Delegates from the N.-W. Zone got together at the State Convention and settled our difficulties re transport and communication between the widely separated ends of this large Zone by dividing the Zone into two. The new "Far North-Western Zone" is beyond a line from Pinaroo to Nyah and takes in Mildura and Ouyen. Kerang, Swan Hill and Sea Lake are the main centres in the N.-W. Zone, not to mention Quambatook!

3TL has had an operation followed by a couple of weeks in hospital, but is now home and was last reported in bed building a v.f.o. 30A is working DX on c.w. like nobody's business. The rotary works OK. Is busy with a new receiver and intends to rebuild the modulator. 3CE is at Portland with family enjoying a well-earned holiday. 3LU has moved to Quambatook for some months but has not got on the air from the new location so

far. 3HR is rebuilding. There was much Ham talk when 3LU, 3BM and 3HR all got together unexpectedly in Quambatook P.O. recently. Clyde Case (2nd op. of 3CH) now has a ticket and his call sign is VK3ACE. Associates, Bud Page and Wal Loveland, are hard at it practicing the code. 3BM (with XYL and three junior ops) is at Edithvale on holidays. Is working on design of triple detection crystal-controlled single-sideband receiver. Attended the State and Maffra Conventions recently.

QUEENSLAND

Nominations of office-bearers for the ensuing twelve months formed the main item of business at the January general meeting of the Queensland Division. The President (4AW) occupied the chair, with Secretary (4RT) and Treasurer (4ES) also on the official dais. Mr. P. Kelly (4KB) who has held the position of Federal Councillor for the past twelve months advised the meeting of the invalidity of the election of the Federal Delegate made at the previous meeting, a mistake due to the fact that no Federal Constitution was at that time in the hands of this Division. Nominations were again called for and F. M. Nolan (4FN) and H. MacGregor (4ZU) were elected. A ballot will be taken to determine who represents this State at Melbourne at Easter.

The President then called for nominations for office-bearers and was speedily nominated for the chair once again by 4KB, seconded 4FN. For Vice-Presidents, 4EB was nominated by 4FN and seconded 4HR, 4VJ was nominated by 4KB and seconded 4HR. The retiring Secretary 4RT had the pleasure of seeing 4XG nominated for his position by 4HR, seconded 4KB. For Treasurer, the man nominated was 4SV, who like 4XG, is a newcomer to the Council, nominated 4KB, seconded 4XG.

It was decided to create another position in the QSL Department, making separate jobs of inward and outward cards. Those nominated were 4EN and 4RC, while for Library Manager 4LT and 4WF were nominated, 4LT later declining because of election for another position—that of Publicity. Country men who look forward to VK4WI broadcasts will be pleased to learn that 4FN was nominated for the job of Station Manager. As before Country Representative will be 4SN, and "A.R." Sub-Editor, 4ZU. Another new face at the Council table will be 4PR, the new traffic man, recently returned from Guam. 4RT moved that a new post be created for an Associates' Member Representative and the following were nominated: 4KP, 4PB and Mr. K. Robinson. The attendance at the meeting was quite large, being

in the vicinity of forty-five, so the new Council should be truly representative.

Agenda items were called for and 4KB moved that Convention Delegates' expenses should be paid on a per capita basis by all Divisions. To assist the Food for Britain Appeal an inlaid tray, presented by member Mr. F. Barraclough, was raffled and yielded £5/15/- toward the Fund. Thanks, o.m.l.

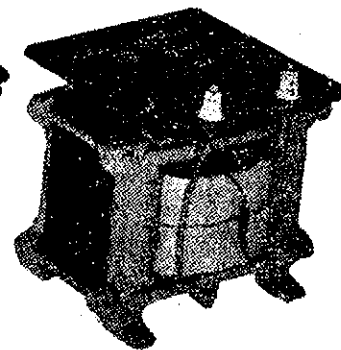
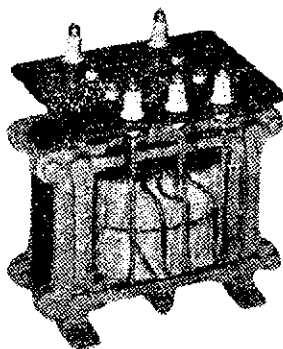
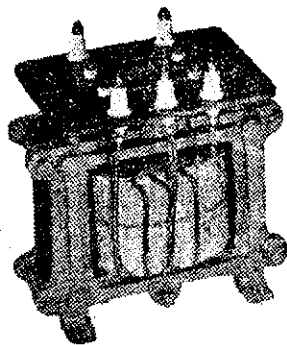
As the business just outlined occupied a considerable amount of time, no lecture was presented, and the meeting closed with the usual rag-chew around the coffee urn.

SOUTH AUSTRALIA

The monthly general meeting was held on Tuesday, 10th February, and a capacity audience was present. The weather was hot and decidedly "sticky," which was an asset in one respect as the few members who stayed away on account of the heat did us a good turn, because I don't think we could have crammed another one into the hall. Mr. Roy Buckerfield (5DA), assisted by Mr. Capell, lectured on "Some Aspects of F.M. as Applied to Amateur Radio." Fortunately for me the lecture consisted of a particularly interesting film on f.m. plus an unusual amount of blackboard explanation and therefore an attempt to rewrite the lecture is almost impossible under those conditions. Suffice to say "Buck" is our star turn with regard to lectures and has never failed to deliver the goods. A vote of thanks was proposed by Warwick Parsons (5PS) which was received with acclamation by all present.

Amongst the visitors were Messrs. Phillip, Lampe, Jackson (V4DJN), Mayman, Powell, Ulstrup, Basset, Warren, Wood, King, Rodgers, Peters and Jameson. Visiting Hams included Graham Pitt (5GE), Harold Weber (3PW), Bill Barber (6DX), and last but not least our first YL member, Miss Andrews, whose arrival caused quite a ripple of excitement among the "wolves" present.

The meeting was decidedly enlivened by Ted Cawthron (5JE) who rose during general business and had his customary "wings." Ted does a good job at this and will in time be the cause of several over Hams getting on their feet and having a say. This is a good thing and should be encouraged. Although Ted tackles his "wings" from a humorous angle, don't be deceived, he knows more about radio, Amateur Radio in particular, than a good many, and nobody has done more for the up and coming Ham than he. Ever ready with advice, both theoretical and practical, he is a typical Ham and everyone will readily admit that his "wings"



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are more often on the target than off, and his main quality is a capacity for "taking it" as well as "dishing it out."

The communications officer for VK6 respectfully asks that all VK Amateurs endeavour to keep the frequency of 7055 Kc. clear on Mondays and Fridays between 6.45 p.m. and 7 p.m. (Adelaide time) especially the phone stations. When it is realised that this frequency is used as the official communication channel for VK5 at the above times the importance of this request will be understood by all.

At the moment of writing the "wireless bird" tells me that the cuckoo is in my nest again, but as the magazine is not out in VK5 as yet, my hands are tied. From observations on 7 Mc. the finger of suspicion points to "Doc" Barbier and my respected Editor. I can't do much about Tom, but "Doc" should be in gaol if you ask me!

The W.L.A. representatives on the VK5 Advisory Council are as follows:—E. Barbier (5MD), G. Bowen (5XU), R. Gaie (5QR), T. Laidler (5TL) and E. Cawthron (5JE). The non-members representative is J. Stratford (5JS).

The Technical Committee comprises the following:—E. McGrath (5MO), F. Wreford (5DW), Roy Buckenfield (5DA), R. Smyth (5MF) and Pete Bowman (5FM). This represents probably the pick of the brains in Amateur Radio in VK5 and nobody should hesitate to seek their advice. They are all good fellows and easy to approach, but they are not psychic and therefore don't know who wants advice and who does not. If you feel nervous about them, come and see me and I will be only too pleased to give you an introduction.

VK5 Hams were tickled pink to know that Charlie Cheel (5CR) was the "Wyatt Earp's" first contact. Whilst realising that this is probably no more than working a VK3, it's nice to steal a little "thunder" from the "wise men of the east."

To clear up any misunderstanding regarding Ross Kelly (5LW) operating portable at Cape Jaffa, South East, S.A., it was the antenna that was 132 feet long, and not the shark he caught, that was only 8 feet. After all who ever heard of a shark being over 10 feet. Strange places Ross gets to with that Type 3 Mark II. If your receiver suddenly gets blocked with chunks of r.f. don't pull it to bits without first checking outside. Ross may be working portable in your chicken house.

Al Smyth gave up work to "carry bricks" recently. He spent his well-earned holidays putting up a new 28 and 14 Mc. super light aluminium tube signal squitter. The 28 Mc. beam is in the sky and the front to back ratio for reception is second to none in the State. The power leaks in his vicinity (almost inaudible on a single wire antenna) are now 80 plus plus!

The power leaks at Max Farmer's (5GF) QTH have been fighting with him for so long that Max has adopted the slogan "if you can't beat the racket then get into it." Therefore over the Xmas period the noise level in the shack rose almost to bursting point with electric drills, spot welders, hammers and many unprintable words. When the smoke and din cleared away, lo and behold, into being had come (chrome plated and all) a swanky 50 Mc. transmitter (1625 in the final) complete with built in modulator and all mod. cons. It is not certain yet whether Max is going all commercial or trying to pinch 5PS's handle of "Pansy."

There is in VK5 a Ham who has a call sign, paid his licence fee, is financial on the W.L.A. books, has more gear than the Eskimos own ice, and all and all is as good a bloke as one would wish to meet. The name! certainly, Dick Scott (5RU). The catch is that not a drop of r.f. has as yet crawled up the "sky wire." Let's hear from you Dick, or should I say "Open the r.f. Richard."

Having been blamed for most things, I am getting in early by telling Jim Sullivan (5JK) that I had nothing to do with the new regulations handbook, especially the paragraph changed from "plain language" to "plain English." It's a darn shame Jim, that from now on no more "Spanish" and just when your star pupil E. A. Charles (5YQ) was coming on so well too. Never mind Jim there are always those inexhaustible subjects of sky wires and qualities of microphones that can be discussed at great length on 14 Mc. when the DX is not on.

The Burnside boys are frantically erecting 60 feet galvanised iron shields around their shacks since the word has been passed around that Gordon Bowen (5XU) has placed the last dry joint on his high power rectifier unit which will feed the "soup" to the 803 final. If Gordon experiences as much trouble in getting r.f. feedback out of his new rig as he did with the baby outfit the boys will have no trouble in procuring the galvanised iron as it will be off the restricted list by that time.

VK5 has had a military signals' display this month, and part of this display consisted of a couple of teleprinters mounted up in a departmental store, connected to the Military Parade ground. Messages were swapped between these two stations and the public is supposed to be suitably impressed. "Wick"

Bayly (5WM, "Bendix" to you) noticing that the operators were using what appeared to be Amateur abbreviations said to one of them, "Ever work any DX on these gadgets?" The operator looked at him and not wishing to appear ignorant said "No not here, but we have one or two of them down at the parade ground." They tell me that the shop-walker had to throw two buckets of water on "Wick" to revive him.

Strange are the workings of officialdom, when newspaper space was unlimited the Institute was battling every week to get any publicity in its weekly column in the local daily, now that space is at a premium, no trouble is experienced to get all we want every Thursday's issue. Wouldn't it!

The young associate member who remarked some months ago that he did not think he would bother much about the Morse code for the A.O.C.E. as it would be cut out of the examination before long, certainly has revised his opinion regarding the code after seeing his marks in the recent examination for receiving. Yes YOU'RE RIGHT, a lovely big O.

Members learnt with deep regret the news that Lance Coombe's mother had passed away, and all extend their sincerest sympathy to Lance and his father Vic (ex-5WS) in their sad loss. Mrs. Coombe's sacrifices over the years is well-known to all Amateurs, her life of service was outstanding, and she will long be remembered by all for it.

Another sports day has come and gone and full credit must go to Joe McAllister and his XYL for such a splendid day's outing. The attendance was rather disappointing, but the infantile paralysis scare was naturally to blame for this. The weather was also very hot, so all in all the day was a huge success. The cost of the day was £7, although £15 was voted for expenses, so that all must feel very satisfied. George Bruce (5GB) did a good job with his pa. Max Farmer (5GF) and Ross Kelly (5LW) had a splendid array of gear on display and all those who assisted to make the day such a success deserve the greatest praise. The highlight of the day was the opening address by the Hon. Secretary Doc. Barbier (5MD) which was picked up on 7 Mc. and relayed through the p.a. It's all a matter of opinion of course but I am not very keen on Doc's voice, I would rather get a letter from him any day. I have been battling to get one from him for years, but so far no good.

This is a story of a young associate member who upon hearing that there was a possibility of some disposals gear being available thought a personal call at the Hon. Secretary's (5MD) QTH would achieve better results. Arriving at the said QTH and being uncertain as to which door was Doc's, he knocked on the biggest one he could find. A gentleman in a nice new uniform answered the door (the butler presumably) and the associate member said "good day, is this the place where one gets cheap radio parts?" "No," said the butler, "this is where you come to if you are silly enough to buy 'cheap' radio parts!!!" You don't believe it, well please yourself.

Being a c.w. and phone man myself, nobody can accuse me of being one eyed, but the over indulgence in words of some of the phone men on 14 Mc. is getting over the fence. Taking fifty words to explain a point when three would be as good is becoming the accepted thing. Perhaps it is a good thing that there were no phone Hams on Nelson's "Victory" as his now famous message "England expects that every man will do his duty" would have been sent as "England anticipates that with regard to the current emergency, personnel will duly implement their obligations in accordance with the functions allocated to their respective age groups."

The VK5 delegate to the Easter Conference will again be "Doc" Barbier (5MD) and Frank Wreford (5DW) will accompany him as an observer.

Dr. Ross Adey (5AJ) has been appointed to the VK5 Council together with Jim Paris who will be the associate member's representative.

WESTERN AUSTRALIA

Owing to the Annual Meeting being held on the third Monday in February, notes from this meeting were not available. By the time these appear, the new 1948 Council will have been elected. Great interest has been shown this year by the members in choosing their new Council. More nominations than usual were obtained and a ballot was necessary. We feel sure that this fares well for Amateur Radio in VK6, assuring us of a very healthy future.

PERSONALITIES

VK6QF: congratulations o.m. on being the first VK to work Heard Island. We guess this makes a new country for you. A f.b. effort. 6MB: QRM by a canary is Bill's background these days. "Mike Bakers" Canary is the watchword. 6HT: Harry has quite a fine set up down in Albany. A nice rotary beam finishes the job and good DX results. 6LW: Getting f.b. results down on 50 Mc. and we guess Wally will be one of the first VK6s to work interstate. 6HW: One of the State's well-known

Hams, and despite a noisy QTH still gets on the air.

VK6MO: A very nice contact for the 7 Mc. lads; Alan, the operator, does a f.b. job, and we believe has now turned GMD v.f.o. 6DX: Bill has been away visiting VK2 and VK3, and we guess absorbing the speech of these wise men. This station has been heard on 14 Mc. Short skip in Perth lately. 6PD: Likewise heard in Perth working on 14 Mc. Boulder seems to be keeping on the map these days. 6RT: Len made a visit to Perth recently and acquired some new gear to help the signals from Dangan. 6CN: Putting out a f.b. signal with 9 watts from Geraldton. Keep up the good work Cyril. 6WH: Heard calling Heard Island recently on 7 Mc. Keep it up Ted, and keep Claremont going on 7 Mc.

VK6LM: Has been giving the air at Merredin a rest again. Holidaying at Rottnest Island, has been f.b. according to Mal. 6AH: Our VK6 of Wiluna fame has been busy lately and has not been on the air so much. Stan has usually a f.b. 7

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Mc. signal. 6WU: Been holidaying in Perth and Albany. From Wubin, Ray puts out a good signal on 7 Mc. 6ND: A new VE6 with a fine c.w. signal on 14 Mc. A new antenna is being built and Neville should be working some real DX. 6SN: Has been heard quite frequently lately on 14 and 7 Mc. QTH troubles limit the antenna and Alf is not able to erect the best.

DX OF THE MONTH

During this last month, conditions on 28 and 14 Mc. have been worse than this time last year. From about the 4th to the 18th the phone sections of these bands produced just about nil, but outside these dates, conditions were quite good.

28 Mc. Phone; Europe.—Has provided most of the contacts when the band has been open. Gs were quite prevalent and quite a few new contacts have been made in addition to the old ones. GW8UO and 4CC in Wales, GM3XB and 4II Scotland, DA4UW and 4AAG Germany, OZ7PH Denmark, PA0MJIH Holland, F8TY France, NICE and 1MX Italy, OK2IK Czechoslovakia, SM5OH Sweden, and OX2NB Greenland were all good contacts during late afternoons or early evenings.

Asia.—VU, VS, J, etc., all still plentiful, but two contacts worthy of note were HZLAB Saudi Arabia and AR5AB Lebanon—the latter being a long sought-after contact.

North America.—We have at last put in an appearance in the early mornings from 0700 onwards, the stronger signals coming from W6 and W0, although all districts have been represented. Conditions to this continent have been only spasmodic, but when the band has been open some of the signals have been well over S9. The only Canadians worked were: VE7EL, 7ER, 7AFD—from British Columbia.

Africa.—The only two South Africans to be heard were ZS6JB and 6RS during one Sunday afternoon, and this continent has been very conspicuous by its absence.

Oceania.—Activity from the Pacific has been very limited and apart from a few ZIs, KH6GT Hawaii was the only one worked.

14 Mc. Phone; Europe.—Quite a good variety of DX has shown up from this continent, particularly in the late evenings. G3ASC, 8QW, 3AP, 8TH were the best from the Old Country. G18UW Northern Ireland, MB9AU and 9AI Austria were the first from that country to be worked on phone post-war, F8MY and 8BS France, SV1RX Greece, OZ3J Denmark, and PA0NG Holland were all good QSOs.

Asia.—The VUs from India practically fill the high end of 14 Mc. these early evenings and are easier to work than VKs. In between these S9 plus signals, if one is lucky, a few rarer birds may be heard and worked (with the aid of a v.f.o.) and the best of these were ZC6JP, 6JM Palestine; AR5AB Lebanon.

Central America.—Some of these more elusive chaps have put in an appearance again—the four worked were 1120A Costa Rica, CO7VP Cuba, XE1AC Mexico, NY4ZQ Guantamano Bay, and they provided nice contacts. VK6AP was heard working YS1AC San Salvador one evening.

South America.—HR1FO is still heard almost nightly and the QSOs with Victor are steadily growing in number as the v.f.o. beats the QRM (sometimes).

Africa.—Has been a most consistent continent this last month, the ZSs being in the majority. Amongst the Union boys worked were ZS5M, 4T, 2GL, 5O, 2AA, 6CY, 6GI and 1B. From further north VO4AWH Kenya, VO8HJP Tanganyika, ET3AF Ethiopia, ZR2IG Southern Rhodesia, VO8AD Mauritius, MD5AM Suez Canal Zone were all contacts.

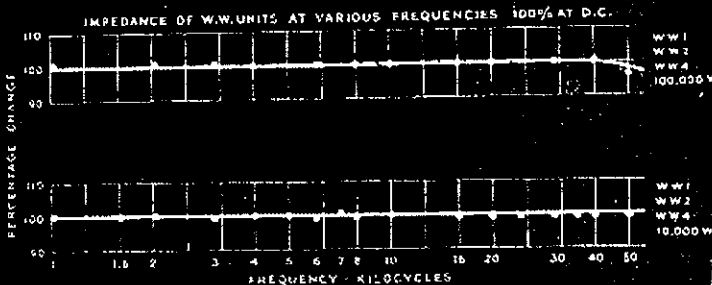
Oceania.—A few rare boys were heard and worked, one of them providing great excitement amongst the VK2 boys, namely ZK6AF in Western Samoa, one Sunday afternoon. WZFH/VK4 in Guadalcanal, Solomon Islands, was an interesting QSO particularly his explanation of the unusual type of call sign. W91YO/KJ6 in Johnston Island was also a rare one. KB6AC on Canton Island in the Phoenix Group is pretty active on both c.w. and phone these days, and he also took up a very pleasureable half hour of my time.

14 Mc. C.W.—The old adage "a change is as good as a holiday" was well adhered to this last month when the low end of 14 Mc. was graced consistently with a few more VKs than usual. This fortnight's bashing at CQ provided many new countries never heard before on phone.

Europe.—The Russians are there in droves and providing they are called on their own frequency contacts result in nine out of ten calls. Incidentally all different prefixes of the U.S.S.R. represent a new and different country in the eyes of the DX C.C. Those worked were UA9LD, UD4RM, UB5KAB, UJ3AE, UH8AA, UC9CD, UJ7BS, UB5KAD, UJ8AE, UH8KAA, UH8AA, UA9KCA, UA9LC, UR2KAA, UA6LK, UA0KFA, UD6AG, UG6WD, UR5I Roumania, MD7DA Cyprus, SM7MS and 6NU Sweden, YU2KX Yugo Slavia (a welcome rare bird), MB9AS

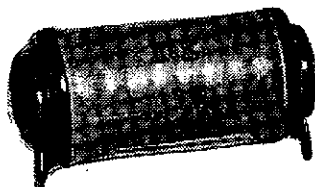
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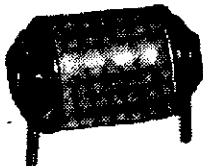


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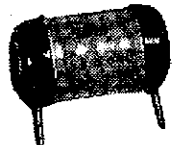
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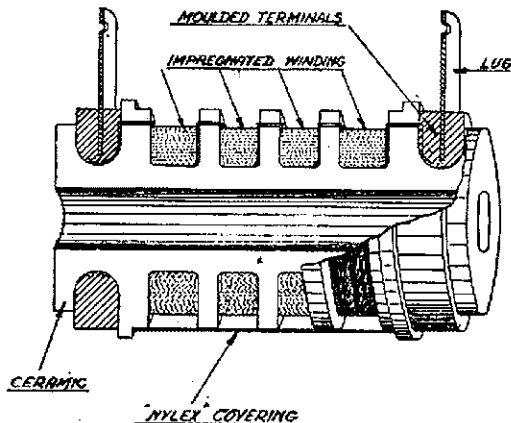
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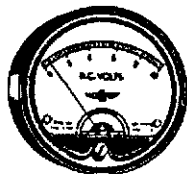
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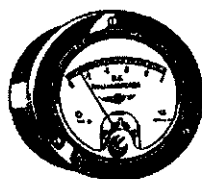
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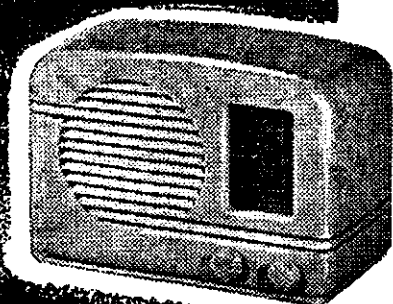
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H.F.P.

Austria, OX8SF and 3RG Greenland, LA50A and 7WA Norway, OH6NN Finland, OK2DD and 8AL Czechoslovakia, DTJF Germany were all added additions in the hope for QSLs.

Asia.—The rarest ones were EP1AL Iran, VS9AN Aden, GR9AN Macao, ZC6WL and 6JF Palestine.

Central America.—TIEEXO Cost Rica, CM2AZ and 2WD Cuba were the only QsOs.

South America.—LU7OD Argentine was worked one evening about 1730, although PY1AJ and 1HX in Brazil were chased for a few nights without success.

Africa.—A few interesting chaps were met in VQARAW Kenys, MD1I Tobruk Libya, GNSMI Casablanca, French Morocco, VQ8AD and 8AF Mauritius, MD2U Tripoli were the best.

TASMANIA

Holidays again took their toll of attendance at the February meeting, with a total of twenty-four, but there should be a decided rise at the end of the month. The annual dinner is once more upon us and the festivities are to be continued next day in the form of yet another D/F field day.

3OB visited us on this occasion and was able to resume VK7 rag-chews which began in the days when most of us were banging the old man's pet crystal detector on the side of our cot. Or so it seemed.

The intended lecturer could not get along at the last minute, and his place was ably filled by Mr. Alan Morrishy, who took us on an intricate black-board tour around a 3-channel carrier system.

These D/F field days come thick and fast in Tasmania. They are certainly a good way of having a picnic, but the boys are getting on to the transmitter so smartly these days that we may soon just as well have the picnic and leave the transmitter at home. The most recent one was held on Sunday, 25th January, when 7OW took the rig to Pipeclay Lagoon, about twenty miles away by road on the east side of the river. Well-known cars have been a give-away on previous occasions, so Crosby borrowed an A Model Ford and used a well-nigh invisible aerial just to make things a bit hard.

Anyway, 7LJ and Barney Watson got home within a few minutes of each other, the latter winning 6-points through having done a few miles less than 7LJ, and the place soon became well populated with queuing loops. Prominent among these was 7BJ, who was seen to spend some time investigating a nice healthy looking aerial, at the bottom of which was a box, a dud bottle and the legend: "This is NOT it."

7LL took 7YY's receiver for a lengthy trip around Lewisham and other large tracts of country, but charitably blames himself. Bad luck dogged the chap who broke an axle—oh, it's red-blooded game, this—but he had a spare on board and wisely contrived to be overtaken by 7AF who, being a motor mechanic, was certainly the right man at the right moment. We are pleased to record that 7CW's stratagem of using an old car was rewarded by a puncture on the way home.

Perry ("Simbad") Connor is back with us, filled with strange oaths and a smell of tar after his trip to ZL and back to Sydney on "Kurrewa III." 7CI mobile did not operate for lack of an 3.5 Mc. crystal, but in spite of salt water and battery troubles, the commercial skeds were kept every night, going and coming.

NORTHERN ZONE

This month I have little to report having been over in VK3 portion of the period and consequently having less time to go snooping around our members. Incidentally if our numbers continue to grow at the present rate, I will have to advertise for an assistant so as to be able to cover the rounds in the allotted time.

This month we welcome to our ranks still another member, Mr. Rex McLean, of commercial station 7IA. Having successfully passed his code and regulations he expects to be on the air immediately he gets the OK from the P.M.O.'s Department. The only visitor to the Zone last month was Mr. Bill Sievers (VK3OB) who is at present holidaying in Tasmania.

The W.I.A. monthly circulars published in Hobart are well received in this Zone and are a big help in keeping our members informed of the various activities of the Institute at State headquarters. A recent circular asking for suggestions in regards to the forthcoming conference caused much discussion amongst Zone members and some suggestions were forwarded to Hobart for discussion.

The activities of our various members have not deviated much from those recorded in previous months excepting that 7RK now goes after the early morning DX on 14 Mc. 7BQ, 7GD, 7LZ and 7DS are all following along their beaten tracks. DX this month has been rather poor. A few of the best stations heard on 14 Mc. being JSAAU, KG6AW/VK9, W2WVW/C9, KH6LK/J9, MD1D, XZ2KN, OB5AW, W6CTV/VR1, VS4VR, VS4WL, U18AE, VP9D, HS1LA, OX3MG in Kangerdlugssuak Greenland and a few UA0s.

FIFTY AND UP

(Continued from page 20)

absence of 4AB, 4CU and 4KK have signified their desire to try and establish 50 Mc. links with Brisbane. Glad to hear it o.m. 4RY is rebuilding with new 522 type receiver, 14 and 28 Mc. exciter, etc. 4ZU and 4AB are busy digging bugs out of c.r.o.'s. 4BT, 4NR and 4JP are active on the band. 4FN is getting much better quality out of the 50 Mc. transmitter.

From our good friend 5JD:—5NG's forty watts certainly goes places! A v.h.f. listener recently reported excellent reception from the verandah of the "Old Spot." The listener's rig consisted of a single stage superregen. with the antenna mounted on the carrier of a motorcycle. Incidentally, the "Old Spot" is located about 15 miles from Adelaide and is well down in a gully. 6KZ is heard now and then. Not up to his old standard. 6UB has a few QsOs now and then also. 5GA an ardent listener. Receives 'em with co-axial antenna about 8 ft. from the turf. As soon as Doc produces the co-ax cable there will be another transmitter on the band. 59I removed the 166 Mc. antenna from atop the tower for a working bee. The bees buzzed off without replacing the antenna. 5JD signs as usual. Is awaiting the pleasure of the local timber merchant—wants to get on the beam.

Since our last notes, several new stations have made their appearance on 50 Mc. in VK6. 6FV is putting out a very f.b. signal from his new QTH. 6MG of Manjimup has receiver and transmitter on the band and has been testing with Perth and Albany but no success so far. 6WH has now a receiver on 50 Mc. and can be worked cross-band on 7 Mc. 6EC, of Munding, broke through to Perth (118 miles) on 31st January at 1945 W.A.S.T. and was worked cross-band by 6LW on 7 Mc. from 2040-2255, Eric's c.w. signals running S4/5. These signals were also heard by 6HM who was not able to QSO as Charlie had no 7 Mc. transmitter. Unfortunately 6EC has not yet finished his 50 Mc. receiver.

A further cross-band QSO took place on Sunday, 8th February, from 2155-2305; Eric's signals this time being S0/7. 6GB reports having heard 6EC at 1955-1958 and again at 2015 at S5. Incidentally 6EC uses 30 watts to 807 into a dipole—wait till you put up a beam Eric! Still no trace of eastern states' signals in VK6 despite constant nightly watching of the band by several VK6s.

For the benefit of all chasing W.A.S. on 50 Mc., the VK6s are usually on nightly between 2100 and 2360 hours E.S.T.

166 Mc. JOTTINGS

Things seem to be quiet in all states due to DX on 50 Mc. On 18/1/48 the Kingsford Club in VK2 held a 166 Mc. field day, quite a number of the boys taking part and some very useful information being obtained. More tests were made with horizontal polarisation, which would appear to bear out previous observations. One new station is known to be operating in VK2 on 166 Mc. in the person of Fred Caruthers (2PF) who is back again after a long silence. Latest news to hand is that 2ADX of West Maitland, and 2BZ, of Tighe's Hill, are now on 166 Mc. which should mean much turning of beams to the northward in the hope of getting through to Newcastle and the Coalfields.

3ACM lost his 815 due to broken seal. 3JK and 3YK in Wangaratta, and 3WC in Horsham, expect to be on soon. 3ABA is also on with a consistent signal. 3MB and 3TZ still run their "private phone." 3LH uses a 10 ft. aerial with good results. 3EM gets out from two half waves in phase 3 ft. high. 3YJ, 3CO and 3NB are also on the job.

In VK5 5NG was heard calling but he needs a new receiver to match his new transmitter. 5JD returned from holidays in Darwin where he got a few bits, etc. to improve his rig.

The VK3 v.h.f. group, at their last meeting were able to meet in person two notable v.h.f. workers from VK2 in the persons of 2KI and the N.S.W. v.h.f. officer, 2XP. The latter provided a good insight as to the 166 Mc. doings in the Harbour City plus a valuable insight as to the temperature inversion effect on the 50 Mc. break throughs over ZL and VK.

USES A BOOT POLISH TIN!

1400 Mc.—2DB had some 1400 Mc. gear in operation at a recent v.h.f. meeting in VK2. His field strength meter resonant cavity being made from a boot polish tin! He uses a 446 lighthouse tube and there seemed to be quite a bit of r.f. there. 2NQ and 2FK also have gear but no contacts have been made. 3VM is still trying to get on 10,000 Mc. but no reports so far as to success.

CONDITIONS IN ENGLAND

News from ex-VK8NW, Ken McTaggart, now C3CUA (temporarily) is to hand. Quoting from his letter:—"Five meters in 'G land' is good but

methods are rather different from VK. Most of the contacts are straight c.w. No m.e.w. heard so far. We get good contacts up to and over 200 miles, e.g. G2XC, Portsmouth, 125 miles, is very good here at S6 though there are hills between. Almost continuous conditions of temperature inversion over this little island cause this DX. Nearly all sigs fade, even those from London, 50 miles, so obviously they are being bent. We hear Fs, etc., occasionally, though I have not worked out of G. Have not struck any Spor. E, but expect to in the summer. There is a good scattering of stations all over England so that you get good variation of contacts.

"The idea here is to work as many countries as possible. The keen blokes have 35 countries, but I have only 3 so far. The rigs here are much the same as at home; c.c. with a variety of p-a's. 832s are fairly plentiful and cheap, so is v.h.f. gear which goes for a mere song. Our band is 58.5-60 Mc. though some have permits to work on 50-54 Mc. I am also on 14030 and 14948 Mc. phone and would like contacts with VK."

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Editor "A.R."

May I thank you most sincerely for your continued kindness in sending me your monthly journal every month since I left your old "Aussie" almost two years ago. The journal is something that I have always looked forward to receiving and it has helped me to keep contact with the boys of VK3, many of whom I got to know so well whilst I was "down under" amongst you all.

May I take this opportunity of wishing VK Hams, VK3s in particular, all the very best of good luck for 1948. May the "Amateur Radio" journal be the brilliant success in the future, that it has undoubtedly been in the past.

Yours sincerely,

TOM O. CADELL,
PAOTOM, ex-VK3EE

SUGGESTIONS

26 Frederick Street,
Horsham, Vic.

Editor "A.R."

May I be permitted to express a couple of ideas for our journal. Firstly, I would like to support W. Burford's suggestion that a "Hints and Kinks" Section would be a good thing and very popular with everyone.

Secondly, I feel that the "country cranks" are at a disadvantage in this respect—they cannot attend meetings and lectures in the city. What about letting us have the lectures, etc., in print? I am sure this would find favor amongst us chaps.

"Gremlin" is a fine fellow and is doing a fine job, good luck to him.

Many thanks for your interesting journal articles.

Yours sincerely,

H. R. PITZSIMMONS, VK3FL

"Hints and Kinks" will be commenced as soon as we have sufficient material. Contributions are welcomed. Some lectures have been printed in the past, and will be in the future, when manuscripts are submitted.—Editor.]

Mort Street,

Katoomba, N.S.W.

Editor "A.R."

For some time I have considered a few ideas which may be of use to you as Editor of "Amateur Radio." You may or may not like the ideas, anyhow no harm done so here goes. I would like to suggest a question column for technical questions. The questions to be asked and answered by the readers themselves. The Technical Editor would most likely be the best person to edit the column, limiting the questions and answers actually printed to subjects of general interest considered instructive to the average reader.

I would suggest that a few rules be made concerning writing into the column. (1) The subjects must be of general interest to the average reader. (2) The question to be not more than fifty words and answers as short as possible. (3) The Editor does not have to publish every question or answer or answer all correspondence. (4) Those whose questions have been printed may obtain all answers to same by sending a stamped and addressed envelope.

Such a column would probably make interesting and educational reading; provide a useful service to those wanting information and bring out of their shells a number of writers of technical articles. One trouble would be that questions would be printed one month and the answers the month following, making it necessary to either reprint the question or say number the questions. I would suggest the questions be numbered throughout the year and answers to always bear the number of the question.

I hope this suggestion may be of some use and wish you 73 for the present.

Yours sincerely,

B. HANNAFORD, VK2ALR.

[The idea is a good one OM and consideration is being given to it.—Editor.]

17 Berwick Street,

Coogee, N.S.W.

Editor "A.R."

I read with interest VK3GE's letter in December, 1947, issue and think it was one of the best and to the point that I have read in "A.R." Like 5PB I intended to make a contribution but did not get around to it, but after reading the letters from 3EL and 5PB I thought the time had arrived to pick up the pen.

The articles I like to see are those describing a piece of gear or an antenna, what the writer has found out, what worked and what did not and why. I agree in parts with 3EL that we should improve

our knowledge of the art and should have improved on the fundamentals needed for the ticket and most of us can make a substitution and know what goes on in a piece of gear at a certain frequency, but if we don't know what we are doing in involved mathematics the slightest mistake will give an answer which has no relation to the problem on hand.

3EL says there are plenty of publications for the layman and 5PB states there is an excellent range for the technically minded, but I think quite a few of us are in between. Suggestions? Give us the dimensions of an antenna, the basis of a v.f.o. or the dimensions of a wave guide and I think most Hams will be interested, but mathematical approach to these things will be passed over. I like to turn to Ham Radio as a relaxation and had often thought I had neglected things a bit when reading these complicated articles, but was interested to find there are at least two Hams like myself, maybe there are more.

In conclusion I would like to say that the articles on safety are timely considering the frightful hay-wire we have at times and that the articles by "Gremlin" are always read with interest, possibly I have not been active enough to receive mention or by some extraordinary stroke of luck my sigs have been good.

Yours sincerely,

W. P. NELSON, VK2KH.

43 Yanko Avenue,

Waverley, N.S.W.

Editor "A.R."

Apparently Lt. Col. George Every (VK3GE) started something when he entered that plea for simplicity in articles in a purely "Ham" magazine. George SHOULD know the thought trend of the average amateur, also his likes and dislikes; for many years he has schooled army personnel in Signals theory and practice. Service students making up a class invariably included a sprinkling of would-be "Hams"—during the war such classes included many members of the fraternity. Nevertheless, out of a class of 35 students, the top rankers in E and M and radio theory—relatively simple at that—comprised no more than about 3 per cent. Theory exam failures could be placed around 40 per cent., again, despite the elementary nature. In practical work however, failures in exam would be, conversely, about 4 per cent.

The Army's needs at that time were for men with plenty of practical ability, plus a small amount of theory, and under that form of training, there emerged men of considerable Service value. So it is with the average Ham; he acquires enough "know-how" to qualify for the A.O.C.P., and if he is no shining light, he is probably the first to admit the failing, if such it be. No doubt as VK3EL says in "A.R." for February, 1948, "the chap with little or no knowledge of the theory behind the job he is on generally makes a hash of it," but we should not lose sight of the primary consideration that Amateur Radio is a HOBBY. For those with a professional background in technical radio, an ample quota of technical-scientific knowledge is of paramount importance, and if the professional man is attracted to Amateur Radio, then the hobby will benefit, if he goes out of his way to help less learned colleagues over hurdles with proffered advice. But, if he descends rarely to the technical status of the many modestly-inclined Hams not gifted with mathematical brilliance, and if he writes articles for magazines only in expression fitted to I.R.E. papers, he definitely sounds a wrong note in Amateur Radio.

Practice and the mathematical reasons for it are inseparable, but there is an appropriate method of dealing with the theory, and that is, in as simple a form as possible where Radio Amateurs are concerned.

That outstanding publication "QST," aptly dubbed the "Amateur's Bible," is always to the forefront with practical development; in many instances through the years it has been ahead of professionalism. It amply supports any practical story with the why and wherefore, but always in the language of the man in the street. The humble not-so-clever amateur can follow it all with average reasoning.

As one who has contributed "acres" of copy in technical radio journalism for more than 25 years, I suggest that VK3GE is right. Fill the pages of "A.R." with a mass of equations and calculus, and readers interested will be in a small minority. The majority wants to know "how many turns" and "what size former?" etc. It is by catering for this majority that your publication will remain what its title implies.

In conclusion, a word or two about the doctory "Gremlin." Criticisms of his repartee are rife on 7 Mc. R/T. May I suggest that some grizzlers take him too much to heart? A sense of humour is necessary in this hobby, which after all, is merely that, and Australians are supposedly noted for their ability to "take it." I even heard one individual attribute "Gremlin's" identity to myself,

an "accusation" that I must, out of fairness to "Gremlin," whoever he may be, deny forthwith. May he continue with wasp-like persistence to sting wrong-doers in tender places.

Yours sincerely,

D. B. KNOCK, VK2NO.

"GREMLIN'S" ARTICLE

678 Forrest Hill Ave.,
Albury, N.S.W.

Editor "A.R."

I am amazed to read in February "A.R." references to 20J by "Gremlin" under the heading "Such Nice People." 20J is accused firstly of being a v.f.o. user, running a carrier around the band, and signing once. Will "Gremlin" please tell me when the alleged offence took place, on which band, and with what station was 20J QSO?

The answer will be very interesting, because, believe me, I have never used a v.f.o. Way back around 1928 I scrapped a t.p.t.g. oscillator for crystal and have been c.c. ever since. How could I possibly run a carrier around the band? As for signing once, I wish it to be known that this accusation is definitely against my idea of operating, apart from regulations in force. "Gremlin's" wording of "It is a New Year resolution you want, try skipping Hi on phone—if you can't laugh, it's not funny I guess." I agree, there is nothing like a hearty laugh at something funny—it does one good. Hi is for use in c.w., not phone. I know that, and there is no need for "Gremlin" to try to tell me something which I already know. To sum up, 20J is not guilty of "Gremlin's" accusations, and a published apology is requested.

What is wrong with a v.f.o. anyway? I think it an asset to any station, but of course must be used and not ABUSED. You must agree. I intend to install one as soon as possible and be proud of it, but it will be used as one should be. I think the other comments have been explained.

I think it high time this sort of thing is brought to a close. Why not a bit more helpful co-operation? There is an Advisory Committee, which I am sure would tackle any "Breaches" in a more business-like manner, and be certain before making an accusation. "Gremlin" is not getting us anywhere. As Hams we should be pals and help each other—that's in the game. Satirical and erroneous remarks are not helping any. Think it over. Come out in the open "Gremlin," and let us look you over. Whether you've been a Ham for 20 or 2 years, what does it matter. Non-de-plume is not for me.

Yours faithfully,

NOEL ARNOLD, VK2QJ

["Gremlin's" closing paragraph was a general observation on the use of c.w. abbreviations when using telephony, and did not refer to VK2QJ. Has the possibility of a pirate using the call VK2QJ occurred to the writer?—Editor.]

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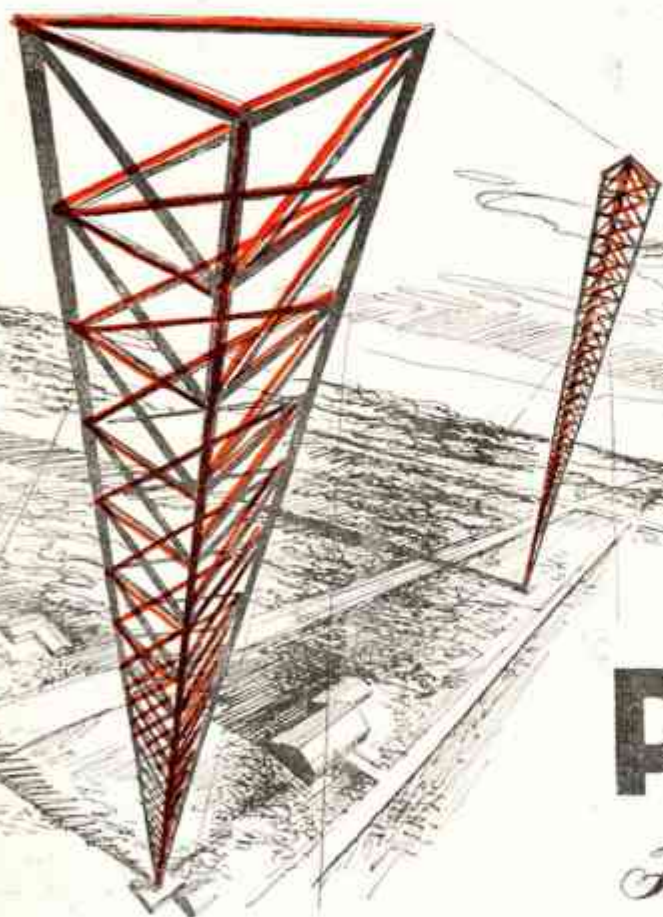
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EDITORIAL



In order to represent the requirements of Australian Amateurs regarding the establishment of amateur band frequency allocations, action has been taken to present to the P.M.G.'s Department in tabulated form a complete picture of the amateur allocations as envisaged by the W.I.A. after consideration of the findings at the Atlantic City Conference.

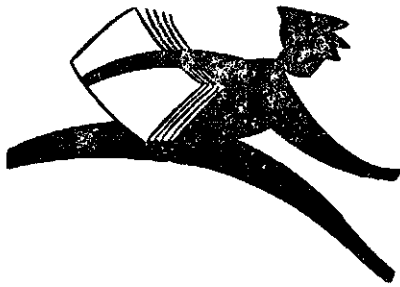
To this end, a request has been made to the Department to consider changes to present allocations to provide as expeditiously as possible those frequencies upon which available Disposals equipment may be used without modification. As a result of evidence placed before the Department by the Federal Executive of the W.I.A., a favorable decision has already been given in the case of the 144 Mc/s band. It is hoped that shortly a similar favorable decision may be reached on frequencies in the vicinity of 200 and 400 Mc/s, thus giving the Amateur a wide scope for experimentation on frequencies in which anomalous propagation conditions warrant considerable investigation. It is in fields such as this that information obtained by a body of widely dispersed stations can

prove of inestimable value in times of national emergency.

The present range of frequencies abovementioned would fill what would otherwise form a gap between our present lower frequencies and those of the ultra-high frequencies. Proposals have been made for an extension of some of the Atlantic City allocations in the lower frequency bands, where feasible in Zone 3. The present and future ultra-high frequency bands provide ample scope for those interested in the special problems associated with these more complex types of emission and equipments. Naturally enough, our requests cover consideration of the various types of emission from the bands in question, and include such types as facsimile television and such new techniques as may be developed.

It is hoped that the Department will see its way clear to give permission for the use of these facilities prior to the full implementation of the Atlantic City findings, provided that conditions existing in Zone 3 permit.

W.R.G.
G.G.
W.T.S.M.



Homecrafts

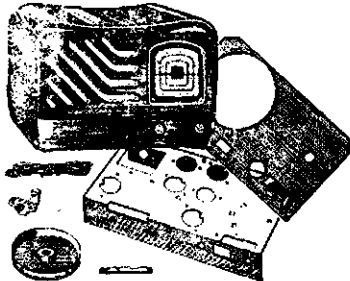
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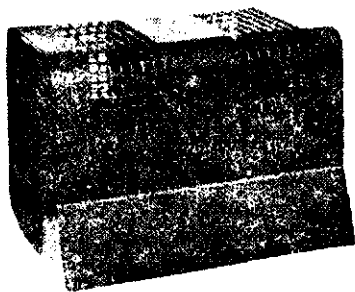
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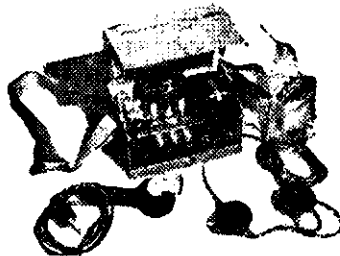


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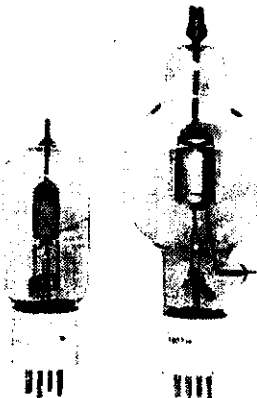


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CONVERSION OF THE SCR522

One of the best known v.h.f. sets in the R.A.A.F. was the U.S. Army SCR522, or English TR5043, operating in the region of 100 to 156 Mc. It operates from either 12 or 24 volt battery supply and may be converted to a.c. operation with little change in wiring.

In order to eliminate redundancy, information supplied by various authors has been intermingled during compilation. The Technical Advisory Committee of the Victorian Division feel that readers generally will appreciate the completeness of the picture thus provided.

The SCR522 set-up comprises the following units:—

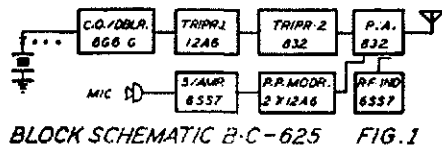
Transmitter	BC625 (Type T5017)
Receiver	BC624 (" R5019)
Dynamotor	PE94 (" 5016)
Rack	FT244 (" 5009)
Case	CS80 (" TR5043)
Control Box	BC602 (" 5003)
Jack Boxes	
interphone 629/631.	

PANEL MOUNTING THE BC625 TRANSMITTER

BY C. SERLE, VK3RX

By courtesy of Leo Meyerson, W0GFQ, the writer received the details of how one Ham adapted his set to work on 144 Mc., on which band we will all soon be working when the provisions of the Atlantic City Conference agreement come into the picture in Australia.

The BC625 transmitter makes an excellent little low-power job for mobile or home station. Having four crystal controlled channels with built-in phone or tone modulator and excellent frequency stability, it will give an admirable account of itself. (see block schematic Fig. 1.)



BLOCK SCHEMATIC B-C-625 FIG. 1

Alternatively it may be used to drive a husky power amplifier on 144 Mc. if you want a rock-crusher.

It has seven tubes; 6G6G as crystal oscillator with the plate circuit operating at twice the crystal frequency—which would be between 8,000 Kc. to 8,255 Kc. for the band 144-148 Mc.—thus bringing output of the first stage to 16 Mc. The second stage is a VT134, better known as 12A6, used as a tripler to 48 Mc. The third stage is also a tripler but here the v.h.f. type tube (VT118) or 832 is used. This 832 stage, being a tripler, converts the incoming 48 Mc. energy to the desired output frequency of 144 Mc., the ultimate output frequency being eighteen times that

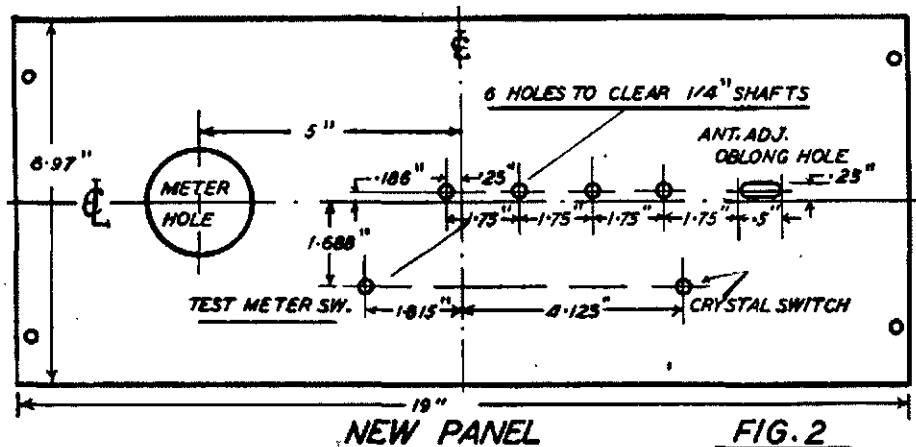
of the crystal. The plate circuit of this stage utilizes a hairpin line type of tank inductance and a butterfly split-stator is bridged across it for tuning purposes.

The final r.f. stage makes use of another 832 operating straight through for a power amplifier. This feeds the antenna which can be anything from 20 ohms to 600 ohms load. Varying the coupling is provided by a swinging link and all lines and coils are silver plated.

The audio section consists of the VT199 (6SS7), fed by a carbon mike or 600 ohms line, coupled to the push-pull stage of two 12A6 tubes, which in turn modulate the plate and screen of the final as well as the screen of the tripler, which drives the final.

To enable the transmitter to be used as a driver for a high-power stage in fixed station work, it was decided to remove the transmitter from the rack and case and mount it on a standard 7" x 19" panel.

The panel was laid out according to the drilling sketch (Fig. 2) and two mounting brackets were made to bolt to the transmitter chassis. All controls are brought to the front panel and the tuning is done in the conventional way. To avoid complications, the ingenious push-button ratchet-type tuning system was scuttled in favour of the regular tuning knobs.



NEW PANEL

FIG. 2

As well as tuning the transmitter to any of four pre-set channels, it tuned the receiver to the same pre-set frequency channel and selected the proper crystal in the BC625. Perhaps some Hams may like this feature to remain untouched and to tune the receiver with a geared gang, but that is a problem that they will have to work out for themselves.

First of all the power pack. The requirements are 300 volts at 260 Ma.,

and 12 volts for the heaters, which is most easily obtained by putting two 6.3 v. windings in series, with a total drain of around 1½ amps. The negative bias requirement is -150 volts, by tapping below ground on the pack or by using B batteries. It is not recommended that you obtain it by adding resistors and altering the circuit of the transmitter which has been thoroughly tested under war conditions and the bugs ironed out. Efficient operation depends a great deal on the proper bias and drive being maintained and much of the trouble on the higher bands arises from insufficient and incorrect bias and drive. With a power input to the final of about 20 watts you can safely assume that 12 watts gets to the aerial.

Front Panel Layout.—A new 4-position crystal switch is brought out through the front panel. The original crystal switch was removed and the wiring substituted on the new one. In the old one the three crystals not in use were grounded; this is not done in the new arrangement to simplify the contact circuit. (Could be overcome by using shorting-type switch—Ed.)

The oscillator and tripler tuning knobs as well as the final plate tuning are lined up in a group of four along the middle right of the panel. These shafts were made by sawing the correct lengths of ¼" brass welding rod and drilling and tapping one end for 8/32 threads (American No. 8 size, 32 threads). Each shaft is screwed down tight on its proper tuning condenser control in the original transmitter, since each shaft is threaded for a pre-set locking device. The ratchet tuner need only be disengaged from the tuning system.

Originally the transmitter provided a

pair of test pins to plug in a 1 Ma. test meter for tuning (resistance of meter 75 ohms). Each circuit was then selected by a 6-position test switch. The test meter was external and used only when the set was in for repairs or re-tuning.

As modified (see Fig. 4), the meter was made permanent on the panel and the leads soldered to the meter receptacle pins. This meter test switch also has a ¼" extension shaft fitted so

that it projects through the front panel.

The six positions of the meter test switch correspond to the following circuits:—

Position No. 1—1st frequency-multiplier plate circuit.

Position No. 2—2nd frequency-multiplier plate circuit.

Position No. 3—Power Amplifier plate circuit.

Position No. 4—Not used (some earlier models used this position as an antenna indicator; it was discontinued on later sets).

Position No. 5—Power Amplifier grid circuit.

Position No. 6—Not used.

The antenna coupling is variable with a setscrew. This is adjusted through the oblong hole which is shown on the right hand end of the panel. A screw driver adjusts this feature. The final tube is held in place in the BC625 by a piece of Mycalex strip which is bolted to the right cover plate enclosing the final amplifier compartment. By turn-

ing four locking screws, tubes are easily changed, antenna coupling adjusted, etc.

Tuning Procedure.—Tuning up is quite simple and straightforward. The circuits are designed so that there will be little likelihood of incorrect harmonics being selected. A loop absorption wave meter is still a most useful and handy gadget to have around just to make sure.

Using a power supply which delivers 300 volts and around 260 Ma., representative currents as read on the test meter will be:—

Position	Normal Reading	Full Scale in Ma.	Actual Current
No. 1	0.4	50	40
No. 2	0.5	100	50
No. 3	0.6 to 0.7	100	100
No. 4*	not used	—	—
No. 5	0.6 to 1.0	2	2
No. 6	not used	—	—

*where used as r.f. indicator, diode current range is 0-1 Ma.

type trimmer capacitors to minimum capacity and spread each coil (antenna, r.f. and mixer) to 3/16" between turns, being careful to maintain the coupling of the coils with respect to one another, and peak the trimmers on the band.

9003 Harmonic Amplifier.—This stage is retained as a straight amplifier because it couples the oscillator to the mixer without further alteration, and if removed would necessitate series resistor to replace heater and some complications in coupling the oscillator to the mixer.

The hairpin coupling loop needs to be squeezed together as close as possible, without actually touching, for the full length of the parallel section leaving the loop at the end coupled to the mixer in the same position as previously. The trimmer is unscrewed to minimum capacity, slight readjustment may be necessary when re-aligning.

9002 Harmonic Generator.—This stage becomes the v.h.f. ultraaudio oscillator. As before the trimmer is set to minimum capacity and the coil spread to 3/16" spacing between turns. When aligning receiver the oscillator trimmer should be adjusted to put the oscillator

MODIFICATION OF BC625 TRANSMITTER FOR USE AT 166 Mc.

BY E. MANIFOLD, VK3EM

Hereunder is listed the line up of tubes in the receiver showing modifications required as pictured in Fig. 3:—

9003, R.F. Amplifier—Tuning range extended.

9003, R.F. Mixer—Tuning range extended.

9003, Harmonic Amplifier—Tuning range extended.

9002, Harmonic Generator—Becomes v.h.f. oscillator.

12AH7GT, Squelch Tube—Becomes first audio amplifier.

12AH7GT, Crystal Oscillator—Becomes "S" meter tube.

12SG7, 1st I.F. (12 Mc.)—Remains as original.

12SG7, 2nd I.F. (12 Mc.)—Remains as original.

12SG7, 3rd I.F. (12 Mc.)—Remains as original.

12C8, 2nd Det./A.V.C.—Removed entirely*.

12J5GT, Output—Removed entirely*.

12H6, A.V.C. Delay—Becomes 2nd Det. and A.N.L.*

12H6, Noise Limiter.

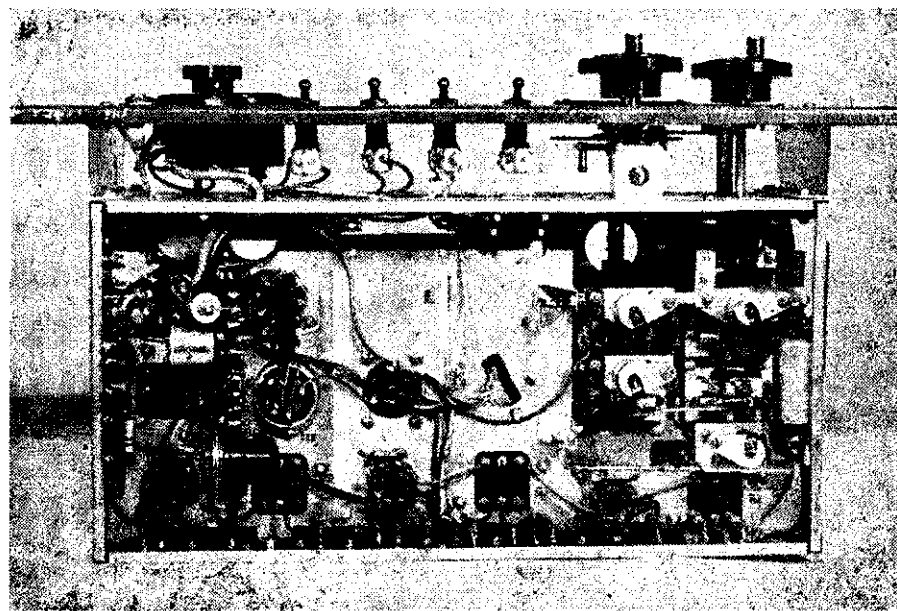
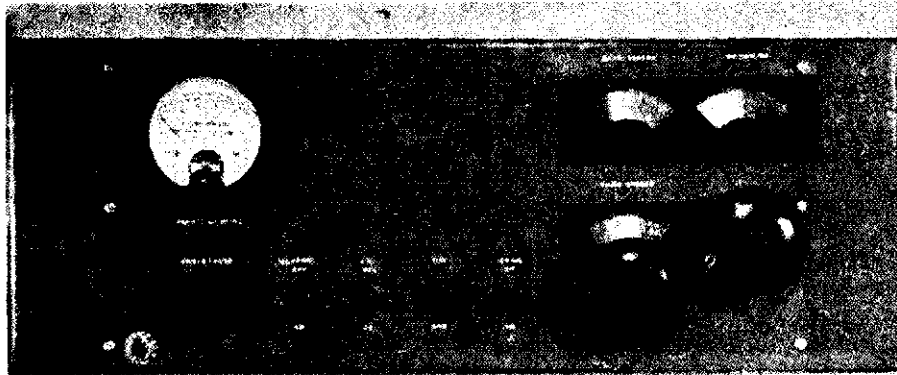
Note.—The 12H6 is only installed in the BC624M. The "M" denoting modified receivers.

Refer to Fig. 1 in "Amateur Radio," January, 1948, page 3, for block schematic of original receiver.

9003 R.F. Amplifier and Mixer Stages.—The only modification to these stages necessary to enable them to cover the 166 Mc. band is to unscrew the slug-

†It is unfortunate that the news of the release of the 144-148 Mc. band was received just as we were going to press. Nevertheless the articles as they stand deal more specifically with structural alterations, and for that reason we decided to go ahead and use the articles—Editor.

*267 Jasper Road, McKinnon, Victoria.
*Optional.



Connections to Power Input Plug, or if you insist, male socket, is an 8 pin Jones' type located at centre of chassis with connections as follows:—

- Pin 1: —150 volts.
- " 2: +13 volts.
- " 3: 300/320 volts, 260 Ma.
- " 4: Bridged to No. 3.
- " 5: Sidetone (not used).
- " 6: Sidetone (not used).
- " 7: Press to transmit (not used).
- " 8: Ground B— C+.

Connections to Mike/Key Input Plug.—This plug is on the same side as the meter switch and at end of chassis. Key

connections used with 13 volts d.c. only. Connections are as follows:—

- Pin 1: Primary mike transformer, 250 Ohms.
- " 2: Primary mike transformer, 250 Ohms (opposite end).
- " 3: Transmit (not used).
- " 4: Channel selector common (not used).
- " 5: Channel "D" (not used).
- " 6: Contactor/Key 13 volts d.c. only.
- " 7: Press to transmit, used d.c. only.
- " 8: Nil connection.

taken to remove all stress from the ceramic capacitor ends while spreading turns (replacements are not available for ceramics in question). The coils could be removed with a large soldering iron; but can be spread far enough to cover the band if sufficient care is taken.

Original spacing of coil is equivalent to wire diameter between each two-turn section and approximately two diameters' spacing between the antenna coupling coil and plate coil. Latter spacing should be maintained, while each two-turn section is spread to approximately 7/16" between turns.

The adjustments to coils as outlined above should enable all tuning capacitors to be adjusted to approximately 150-156 Mc. calibration points on each of four dials on top of the unit; any large variation of tuning of any particular control indicates that wrong harmonic is being selected. An active crystal may produce numerous harmonics; hence the tuning should be checked with the station absorption wavemeter or lecher wires before going on the air.

Tuning.—Tuning is rather unorthodox insofar as general Ham practise is concerned. Assuming power supply and antenna have been connected, crystal and 0-1 Ma. meter inserted, proceed as follows:—

- (a) Tune first doubler (left hand end of slide mechanism) for maximum.
- (Continued on page 11)

MODIFICATIONS TO BC624 RECEIVER FOR USE AT 166 Mc.† BY E. MANIFOLD, VK3EM

C.O./Doubler Plate Tuning Coil (6G6G).—The original 11½ turn coil was reduced by removing two turns from the bottom end of the coil, leaving 9½ turns. This enabled the doubler tank to resonate at the higher frequency required, that is, in the 18 Mc. range provided by doubling crystals in the 9.2 to 9.4 range or tripling crystals in the 6.13 to 6.26 Mc. range.

First Tripler Plate Tuning Coil (12A6).—Having in mind the possibility of 144-148 Mc. operation at a future date, the original wire was removed from the former and stored for further use. Twelve turns of 16 s.w.g. enamelled copper wire were then wound on to original former. Tap was provided at

7 turns for out of phase drive necessary for second tripler p.p. grids. Be sure to note original phasing before removing the coil.

Second Tripler Plate Tuning Assembly (832).—This consists of linear tank on the underside of the chassis, and requires very little alteration other than gently squeezing two legs of the hairpin loop together, until spacing is equal to one diameter of the wire (approximately 3/32") remains for the entire length.

Power Amplifier (832).—Plate coil may be made to resonate to 170 Mc.—merely by spreading the turns. In the writer's case turns were spread over and apart as far as the connections would permit, extreme care being

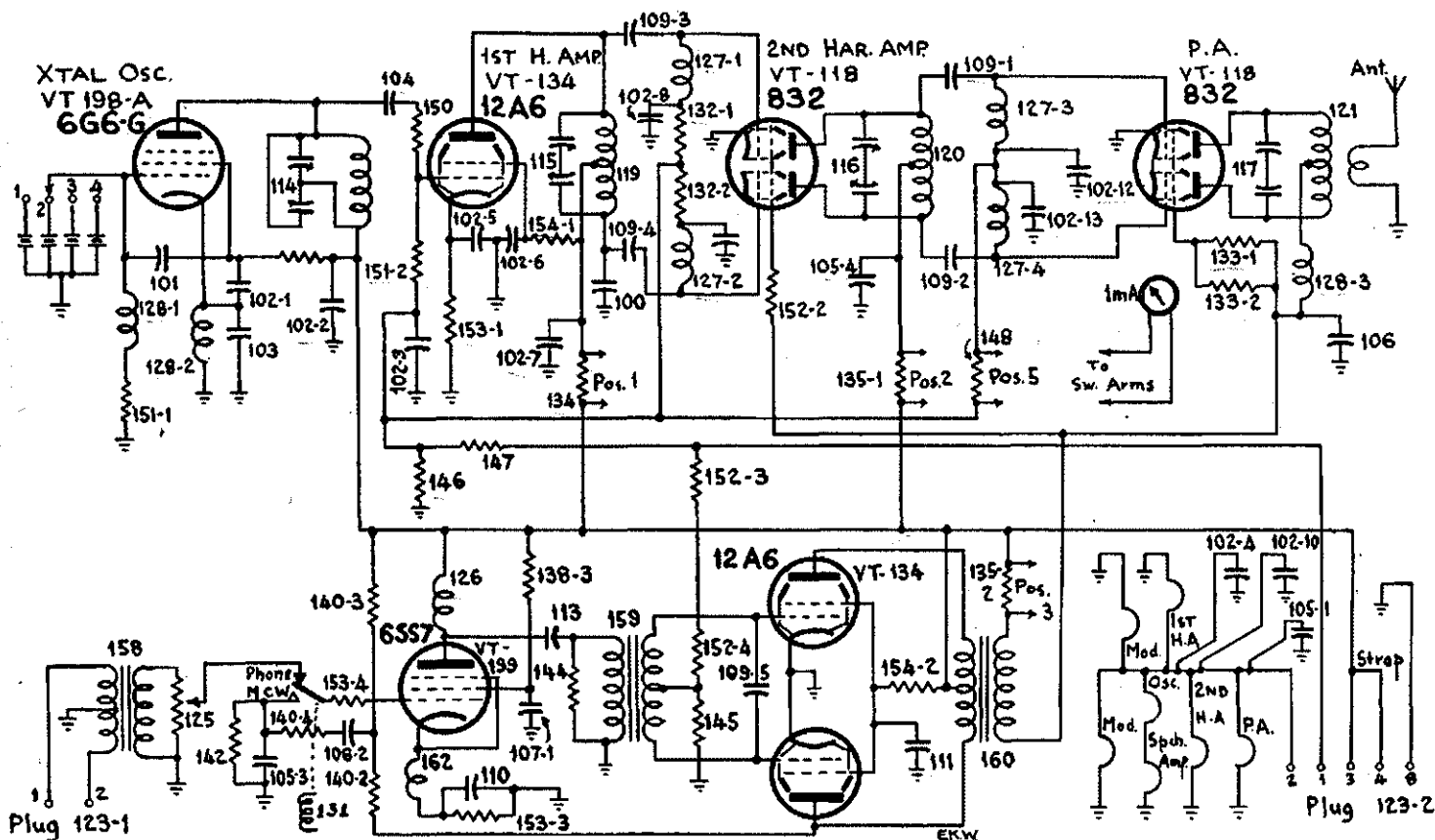


Fig. 4: Simplified Schematic Circuit of Modified BC625 Transmitter.

Going Portable With Type 3 Mark II

BY C. C. QUIN*, VK3WQ

The Type 3 Mark II set is by no means a stay-at-home affair. It is a well-designed set, and to the keen Amateur it will provide many opportunities to experiment in numerous ways, several of which were dealt with in December, 1947, issue of this journal. If you intend to go portable the following mechanical and electrical modifications can be made.

POWER SUPPLY To make this more universal, a miniature bakelite wafer octal socket was mounted in place of the on and off switch and fuse plate. The plate can be cut into four sections and the respective titlings cemented above and below the switch and fuses. A $\frac{3}{8}$ " hole was drilled below this and a rubber grommet inserted to protect the wires.

The following connections were made to the octal socket:—

- No. 1—Filament.
- " 2—500 volts from power supply.
- " 3—500 volts to transmitter.
- " 4—250 volts from power supply.
- " 5—250 volts to transmitter.
- " 6—Receiver output (see text later).
- " 7—Wander lead to "hot" side of the key socket on transmitter.
- " 8—Earth.

*111 Edgevale Road, Kew, E.4, Victoria.

RECEIVER It will be noticed that the lead to the power supply uses only five of the six pins. An external wire was joined from the "hot" side of output transformer to the sixth (the right-hand pin), which was connected to No. 6 pin on the octal socket, as mentioned previously.

TRANSMITTER Although not mentioned in December "Amateur Radio," several Amateurs have modified the bakelite portion of SW.4, section C. In the circuit it will be noticed there is a spare contact located between the contacts of R16B. When using plate and screen modulation with a dropping resistor between 500 volts tap and the screen of the 6L6 p.a., it will be found that the 6L6 will draw current if the key socket is shorted whilst on "receive" position. To obviate this, the earthed side of the key socket is taken to the aforementioned switch contact, and by fitting a jumper wire across the key socket this action will obviate the use of an extra switch,

unless use is made of a relay, as suggested in the latter part of the December article.

Incidentally, it will be obvious that the "T.S.R." switch must be left in the "S" position for the system to work, and it is further explained that the receiver power supply was used for the modulator when transmitting.

As a precaution against burns when using the "T.S.R." switch, fit an extension shaft about 3" long.

MINIATURE LOUD SPEAKER

The spares box was used to house a dynamic earpiece, which is mounted partly beneath the key at the top end of the lid, so that it protrudes into the smaller spare tube compartment of the box. The division was split and a portion turned down to allow leads to pass. The "hot" lead of the receiver was taken to the dynamic earpiece.

A "Don 5" handset and socket was used and the 4-pin socket mounted to one side of the lid, and when plugged in, the earpiece (wired in parallel with the dynamic earpiece) provides additional facilities for listening to weak signals, though this is hardly needed, as most signals can be read quite easily from the dynamic earpiece.

MODULATION As suggested by Ian Sewell VK3IK, and also by Harold Webber VK3PW, it was found that a single 6V6 can be used as a series modulator as per circuit. Note that a 4.5 volt battery is essential

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to provide sufficient drive to the 6V6. This tube, together with associated apparatus, was mounted on the lid of the spares box, still leaving space underneath for spares.

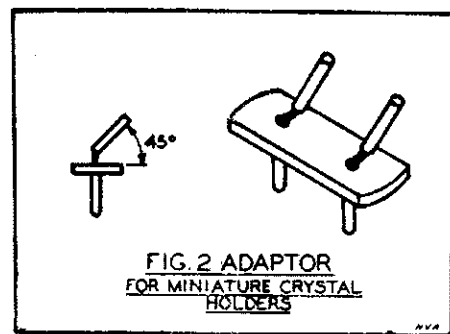
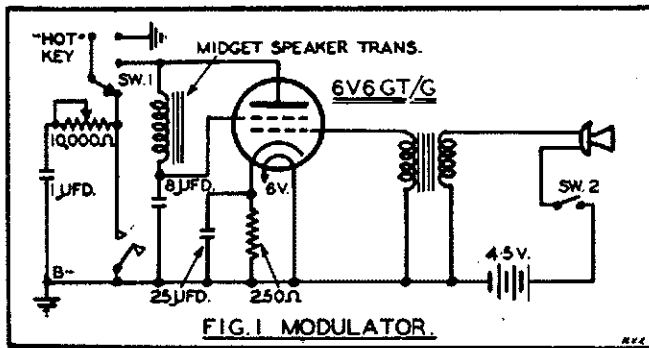
For **Series Modulation**, an octal plug is plugged into the socket of the power supply, with pins No. 2 and 3 jumpered, and No. 4 and No. 5 jumpered. The other leads, Nos. 1, 6, 7 and 8, go through a grommetted hole in the lid of the spares box to supply the series modulator. A change-over switch is also used to change to c.w. and for tuning-up purposes. SW2 is, of course, the pressel switch on the "Don 5" handset.

For both this and cathode modulation the key click filter condenser C23 (behind the earth terminal on the transmitter) must be disconnected.

For **Cathode Modulation**, the matching transformer from the output of the modulator is connected to No. 7 and 8 pins of the octal socket (jumpers on No. 2 and No. 3, No. 4 and No. 5, as above), with switch or relay contacts in series, or straight into key socket.

For **Plate and Screen Modulation**, the matching transformer is connected between No. 2 and No. 3 pins, and No.

4 and No. 5, also No. 7 and No. 8 pins are jumpered, keeping in mind the alteration made to the switch contact as mentioned in paragraph on transmitter earlier.



the centre pins of the plate tank coil socket. Remove this jumper and the link may be wired to these, add another antenna terminal, and this facility may be used. Four turns will usually be sufficient on 7 Mc. at the cold end of the coil.

CRYSTALS Herb Stevens VK3JO, suggested an adaptor socket for using miniature crystal holders. This is made by cutting the filament and grid pins off a UY base and soldering filament pins to the plate and cathode pins, spacing the same to take the pins of the crystal holder. Solder the holder pins at an angle of about 45 degrees and it will facilitate quick changes—see Figure 2.

LINK COUPLING Upon examination of the circuit it will be found that no useful purpose is served by the jumper across

INSTITUTE BLOCKS

The attention of members of the Victorian Division is again drawn to the fact that the Council have obtained a number of printing blocks of the Institute badge. There are two sizes, one the size of the badge which appears on the front cover of this Magazine and the other the size which is at the heading of the Divisional Notes. These blocks may be had on loan by applying to the Administrative Secretary, 191 Queen Street, Melbourne, C.1.

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M.O.P.A. FOR 166 Mc. BAND

BY J. M. COULTER*, VK5JD

The modulated oscillator has much to commend it as a band "opener." It is simple and inexpensive for the initial work. However, it will soon be discarded by the serious experimenter.

In the writer's case the modulated oscillator was more or less useless as the QTH is not particularly good and all other interested persons were located some 5 or 6 miles distance, across the city. It was therefore decided that a more efficient rig was necessary. Taking into consideration present conditions and gear available, it seemed that a simple m.o.p.a. would be suitable.

The tubes chosen were 815 p.a. (832 or 829 should be better) with a push-pull oscillator using 2C22s (7193).

The Oscillator.—This is the familiar parallel line, plate/cathode arrangement with the addition of an idea gleaned from an old copy of R.C.A. application notes. This results in greater efficiency and the power of the oscillator is much in excess of that required. The reserve power permits light coupling to the power amplifier, a desirable feature, if the maximum stability is to be obtained.

The plate line is constructed from half inch copper tubing with a solid shorting bar sweated in position. The shorting bar is drilled and tapped to permit h.t. connection and mounting of the single insulating support. If it is desired to change frequency, another line, longer or shorter is substituted. It is believed that this system results in greater efficiency and stability.

The cathode line, arranged beneath the chassis, is constructed of quarter inch copper tubing and is supported at one end by the cathode terminals on the tube socket. The other end is shorted by a heavy copper strip. The point of support and connection to the chassis is found experimentally. It is quite critical, for best operation, but adjustment is made easy by slotting the chassis directly above the cathode line. The oscillator will work at any setting of the cathode shorting bar but minimum plate current is only obtained at one point and should be readjusted when a load is applied.

Power Amplifier.—The p.a. chassis is mounted vertically at the feed end of oscillator lines. This enables the use of extremely short leads in the grid circuit and the grid coupling is adjusted until the required drive is obtained. Four Ma. being sufficient to drive the 815 to the recommended input at 166 Mc.

Some difficulty was experienced with the p.a. until it was realised that neutralisation was necessary at this frequency. However, the tube is quite stable once it is properly neutralised. The neutralising condensers consist of two lengths of 14 gauge wire placed

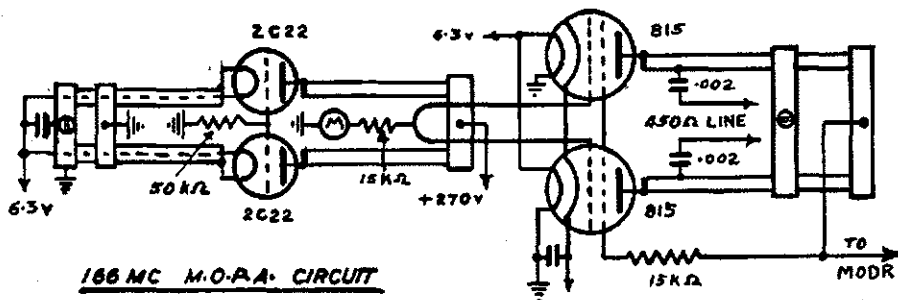
alongside the glass envelope and bent into the position which neutralises the feed back.

The plate line of the p.a. has a heavy shorting bar sweated to the feed end and another sliding bar to tune to resonance. The latter bar is the sole support for the line.

The usual screen by-pass condenser has been omitted as this resulted in far better performance. The reasoning behind this may be argued further but for the present the writer is satisfied with results.

Several methods of coupling to the "J" antenna have been tried but that shown appears to be the most efficient.

The Modulator.—Approximately 15 watts of audio are required and this is easily obtained with a pair of 6L6s or 807s. The present modulator was de-



scribed in QST, September 1946. It has one very desirable feature—the mike battery (?) is never flat!

Construction and Adjustments.—Both oscillator and p.a. chassis are of aluminium 16" x 5½" x 1½". A minimum of insulating materials have been used. Air, even though the cheapest insulator, is still the best.

The shorting bars may seem rather solid but they pay dividends in performance. The original experimental "shorts" were made of light material but were discarded as they could not be clamped securely enough.

The flexible plate and grid leads are made of soft copper strip in preference to braid, this being commercial practice, even on low frequencies.

The tuning of similar rigs has been described quite frequently and no difficulty should be experienced.

As mentioned previously the oscillator plate line is fixed and the length given results in a frequency of between 168-169 Mc. Oscillator cathode line and p.a. plate line is more than long enough to take care of any desired frequency

change. However, no frequency change has been made here for some time as the "J" antenna appears to favor one frequency and one only.

The antenna is constructed of ¾" aluminium tubing, the separation of the "J" section being two inches centre to centre. The 450 ohm line is spaced two inches also and the point of connection to the antenna adjusted experimentally. It is felt that copper tubing for the antenna would be an improvement in that all joints could be sweated.

Tuning Up Procedure.—To tune a transmitter of this type, it is advisable to insert a milliammeter in the oscillator h.t. lead and also one in the grid return to the power amplifier.

Remove the h.t. from plate and screen of the power amplifier and apply h.t. only to the oscillator. Move the cathode shorting bar of the oscillator until the plate current dips. The meter in the power amplifier grid circuit should now show rectified r.f., indicating that the oscillator is delivering power to the grid circuit.

Check the frequency of the oscillator by means of an absorption wavemeter or Lecher wires. If the frequency is not correct, alter the shorting bar position on the oscillator plate lines and again

adjust the cathode shorting bar for plate current dip.

After the correct frequency is obtained, the wire inductance loop on the grids of the power amplifier should be varied to obtain the recommended grid drive. The meter should now be shifted from the oscillator to the power amplifier h.t.

Apply h.t. to the plate and screen of the power amplifier, and adjust the shorting bar for minimum current, then move the feeder taps forward or back along the plate lines until proper loading of the final is obtained.

If neutralisation is necessary it should be carried out as mentioned previously.

Finally the frequency of the transmitter should again be checked to see that the adjustments on the power amplifier have not altered the oscillator frequency.

LINE ELEMENT DIMENSIONS

		Diam.	Len.	Spacing*
Oscillator	Plate	1/2"	12"	1"
	Cathode	1/2"	14"	3/4"
Amplifier	Plate	1/2"	12"	3/4"
	Grid	12†	2"φ	1"

*Centre to Centre.

†Gauge.

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SUCH NICE PEOPLE

The interest aroused by the directive of the Victorian Council concerning the publication of this column under the "nom-de-plume" of "Gremlin," is to my knowledge, the greatest since the end of World War II when the question of the day was "When do we get back on the air."

Victorian Council, in issuing this directive, were solely activated by the facts then in their possession, facts which showed that the articles were causing considerable disagreement within the Wireless Institute. Council, in making the decision, showed that on the facts they acted in the best interests of Amateur Radio in Australia, and on those facts, I am of the opinion that Council was perfectly justified in taking the action they did.

However at a Victorian Divisional meeting members expressed themselves in no uncertain terms, of their disagreement of the directive. Letters received by me since the publication of the March issue of "Amateur Radio" express approval of "Gremlin's" writings, and desire the continuance of the articles.

In view of the expression of opinion at the meeting, Victorian Council, at its following meeting, rescinded its motion directing "Gremlin" to sign his name or forbidding me to publish his article if he did not do so.

This action by Victorian Council in admitting that they made a mistake, of perhaps jumping too hastily, will I feel sure, receive the commendation of all members of the Institute, no matter to

which Division they belong. I believe that Council by their decision have won the confidence of members of the Victorian Division (whom they represent) if not that of the majority of Amateurs in Australia.

The "Status Quo" of "Gremlin" having been restored, it is regretted that the usual article will not appear this month. The decision to allow "Gremlin" to continue was only made a few days before the writing of this, and a few days before going to press. The Post Office has been working overtime between myself and the "Gremlin" in an endeavour to have the usual article ready for this issue.

Unfortunately the "Gremlin" had ceased logging offenders during the ban and consequently the time factor did not allow "Gremlin" to get the article to me in time for inclusion in the April issue.

However the May issue will see "Gremlin" back with the usual article, perhaps written in a different style, as from now on the date of the offence will appear, together with the reason why a "mention" was deserved. I believe by so doing Amateurs will become more familiar with the regulations, as well as becoming more conscious of the sloppy operating, poor signals, and speech which is present our bands today.

I believe, in fact I have heard, that the identity of "Gremlin" has been someone residing in VK3—don't be too sure about this for it is possible that he resides in one of the other States. In fact "Gremlin" may be one of your best friends.

THOMAS D. HOGAN, Editor.

CONVERSION OF SCR522

(Continued from page 6)

imum reading of meter in position No. 1 (approximately 0.5 to 0.7 Ma.).

- (b) Switch meter to No. 2 position and tune No. 2 control; that is, first tripler for maximum indication (approximately 0.5 to 0.7 Ma.).
- (c) Set meter switch to No. 3 position and tune No. 3 dial (second tripler) for maximum reading.
- (d) Without shifting the meter switch from No. 3 position adjust No. 4 dial for **minimum** reading. In all previous cases meter has been in the plate circuit of succeeding stage, hence tuning has been for **maximum**; however in this case the meter is in plate circuit of stage being tuned, namely the final amplifier. Reading should lie between 0.6 and 0.65 Ma. on meter scale.
- (e) Switch meter to position No. 5 and retune all stages for maximum indication possible. Final adjustments should always be made with antenna connected. Any indication greater than half scale in this position is considered satisfactory.

ALTERATION TO V.H.F. BAND

As a result of negotiations between Federal Executive and the P.M.G.'s. Department the band 144 to 148 Mc. becomes available for exclusive Amateur use as from the 1st May, 1948. This band replaces the 166 to 170 Mc. band.

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LINING UP I.F.T.s., B.F.O. COILS, ETC.

Sometimes it becomes necessary to check the resonant frequency of an i.f.t. or b.f.o. after making alterations to it; e.g. adapting an ordinary i.f.t. for the crystal filter described in a previous issue.

In the Ham shack the procedure can be simplified with the following scheme, using a receiver which has already been correctly aligned. Separately parallel the primary and the secondary across the grid circuit of the i.f. channel of the receiver, and tune for maximum signal output. If the receiver i.f. stage has grid cap valves, the coil under test is simply connected between the grid cap of the i.f. valve and chassis, remembering that this will effect the a.v.c. line unless it is switched off.

The theory is simple and can be applied to almost all such circuits. Parallel resonant circuits reflect pure resistance at the resonant frequency of the l.c.r. circuit, therefore at resonance the addition of the i.f. circuit under test will make little or no difference to the output of the receiver. Off resonance tuning will place a detuning inductive or capacitive load across the receiver i.f. circuit, hence a drop in signal strength.—VK5XU.

NOTES ON CLEANING CRYSTALS

Undoubtedly there is hardly an Amateur who has not removed the crystal from his transmitter and taken the holder apart for some reason or other. Usually it was because the crystal did not operate properly. The remedy was to wash the crystal with carbon tetrachloride or another cleaning fluid. Nine times out of ten, the rig would then operate correctly and everyone was happy for a few months until the action had to be repeated.

However, in the past five years techniques in the manufacture of quartz crystals for frequency stabilization have changed tremendously, and there will be relatively little need for cleaning a crystal made in these years.

It was learned during the war that crystals changed frequency while resting on the shelves awaiting shipment. The ultimate solution of the fault was to eliminate the use of abrasives as well as carbon tetrachloride in the final finishing. It was observed that abrasives left a broken surface which rearranged itself constantly, and that carbon tetrachloride left a residue which was detrimental to the oscillating qualities of the crystal. Thus was adopted the acid etch or fluorine etch process to finish the crystals, plus the use of warm water and soap to keep them clean. The result is that now, with the use of air-tight and hermetically-sealed holders, it is not necessary or even possible to remove the blank!

If you do happen to have a pre-war crystal and it does need cleaning, do it in the following manner: Lay the crystal on a piece of clean cheese-cloth or kitchen toweling, and using a toothbrush

RESULTS OF W.I.A. NATIONAL FIELD DAY

Very little interest was shown in the National Field Day, and results were very disappointing, as only two logs were received and it is believed that only two or three other stations participated. The results are as follows:—

Open Section:—

VK3ADF, 224 points; VK3UM, 153 pts.

C.W. Section:—

VK3UM, 150 pts.; VK3ADF, 132 pts.

Phone Section:—

VK3ADF.

VK3ADF, situated two miles north of Warrandyte, worked four bands, using a Type 3 Mark II and a 28 Mc. transmitter with an 832 in the final. Receiver was the Type 3 Mark II and a converter. Operators were VK3ADF and VK3YS.

VK3UM also used a Type 3 Mark II and was situated on One Tree Hill, in the Dandenong Ranges. Operators were VK3UM and VK3UH.

Both these stations worked 4 continents, namely North America, Africa, Asia and Oceania.

It is hoped that considerably more interest will be shown in the National Field Day in the future.

RULES FOR THE 1948 TRANS-TASMAN CONTEST

1. The Contest will commence at 0400 hours GMT on Saturday, 15th May, and continue until 0200 hours GMT on Sunday, 16th May.

2. The Contest will be divided into three (3) Sections, namely Phone, C.W. and Open. The Open Section will be a combination of Phone and C.W. operation. A contestant may enter for each or all Sections provided a separate log is submitted for each Section entered.

3. Operation may be on any licensed Amateur band, and transmissions will be in accordance with existing Regulations.

4. A six number serial group must be exchanged before any points can be claimed. The first three numbers chosen by the station will be retained throughout the Contest, and the second three numbers will commence 001 with the station's first contact, 002 with the station's second contact and so on.

5. A station may be operated by more than one operator, provided a separate log is entered by each operator.

6. Scoring.—Three points can be claimed for each complete exchange of numbers. The total points will be multiplied by the number of ZL Districts worked on each band in the case of VKs, and the total number of VK Districts worked on each band in the case of ZLs. For the purposes of this Contest, the prefixes VK2, VK3, VK4, etc., will constitute Districts. (VK5s in Darwin will not count as separate multipliers). ZL prefixes likewise will count as multipliers for VKs.

7. A log showing Date, Time (GMT), Station Worked, Band, Number Sent, Number Received, and Points claimed must be sent to reach the Federal Executive, Box 2611W, G.P.O., Melbourne, not later than 5th June, 1948. The log must be signed by the operator with a statement that he has complied with the existing Regulations, and a state-

pure soap and warm water, scrub both sides of the blank carefully. Then rinse in clean water, and make absolutely sure that the crystal is free from all soap and dirt. Rest the crystal on edge and let dry. While it is drying, wash the crystal electrodes in the same manner, and blow all of the dust and residue from the holder, being careful not to get any moisture in the holder. After everything is dry reassemble the works. Cleanliness is an important factor, so keep your fingers off the surfaces of the crystal and electrodes. If you take the extra precaution of sealing the top carefully with shellac, you will probably never have to take the holder apart again.—QST, July, 1946.

CLOGGING DRILLS

When drilling aluminum with high speed carbon drills the metal burrs over the cutting edge. Lubricate by having a small jar of turpentine into which the drill can be dipped during working—the turps evaporates and cleans. Next best is a light oil like 3 in 1.

ment of the power input to the final stage of the transmitter.

8. Awards.—Attractive Certificates will be awarded in each Section to the outright winners in VK and ZL, and also to the winners of each Section in each District of VK and ZL. The outright winners will not be eligible for the District awards.

1947 W.I.A. DX CONTEST

There were a number of logs for the Contest arrived quite some time after the closing date, and it is regretted they could not be accepted. There are also two errors and one omission from the results published in February, "A.R.," which are as follows:—

W3DKJ should have been W3DKT in the 14 Mc. c.w. section.

VK4HC should have been VK4RC in the 28 Mc. phone section.

W7JL was omitted with 5 points in the 14 Mc. c.w. section.

The following are the late logs:—

Transmitting:—		Receiving:—	
	47,652 points		
VK2DA	3,303	OE304	4,140 pts.
OK1HI	2,409	OE010	3,600
F5EO	2,088	DEM3053	3,366
VE3QD	1,248	DEM2415	2,769
1IAY	900	OE341	2,160
CR9AN	870	OE352	2,079
1IKN	432	DEM1687	1,818
1IKE	396	DE3514	1,818
P8TM	270	DEM0676	1,746
PSZW	225	DE3693	1,428
VK1CU	120	DEM3036	1,188
PA0CP	120	OE359	1,170
LA8GA	60	DE3764	1,098
OK1CX	36	DE8138	1,062
PA0DC	36	DE1936	954
		DE8277	918
		OE366	900

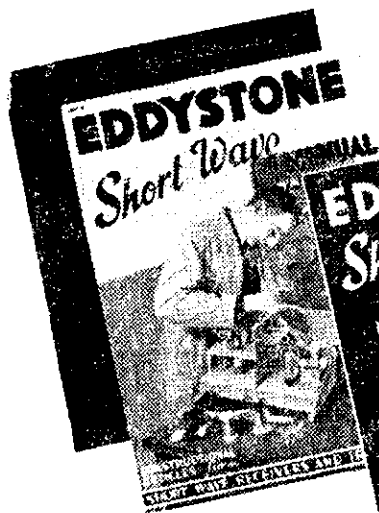
Open:		28 Mc.:	
OE299	840 pts.	DEM6950	81 pts.
DEM0768	810		
OE301	798		
OE004	624		
DE6774	612		
OE361	468		
DE1219	432		
DE7153	414		
DEM6533	375		
DE8166	375		
DE6865	360		
DE6492	273		
DEM3562	270		
DE2157	252		
OE321	168		
DE6312	72		

SHIELDING MICROPHONE PLUG

A common cause of r.f. feed-back in phone transmitters is inadequate shielding of the microphone circuit. The ordinary bakelite shell plug may be shielded easily in the following manner: For shielding material, use a small piece of tinfoil taken from an old paper condenser. Do not detach the tinfoil from the waxed paper; instead, cut both paper and foil to size so that when formed in a cylindrical shape, a snug fit inside the bakelite shell of the plug will result. When forming the cylinder, make sure that the waxed paper will be turned to the inside, so that there will be no chance of the foil shorting the microphone connections. When the bakelite is screwed back on the plug, the thread will bite into the foil, thus grounding it and making the shielding effective.—QST, May, 1938.

B.C.L. TROUBLE

Ever tried reversing the leads to the 240 a.c. mains—it cured VK5MD's trouble.



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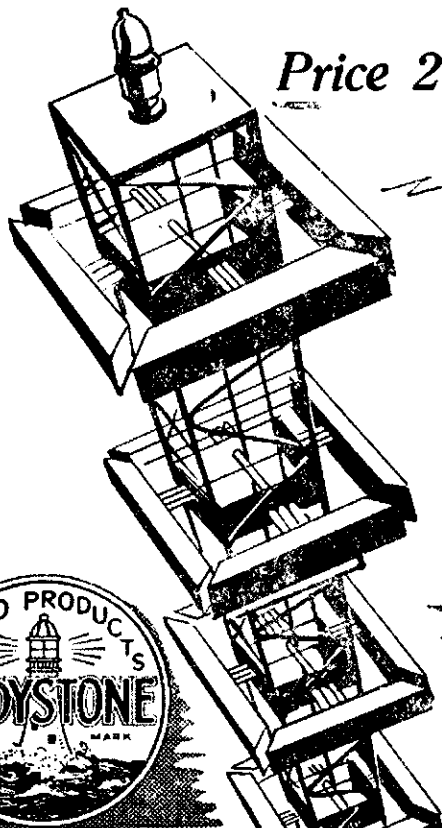
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Compiled by VK3QO, to whom all contributions can be sent

VK6 HEARD THE EASTERN STATES

From Western Australia the following came to hand. "Great excitement reigned in VK6 on the evening of Tuesday, 2nd March, when what looked like the long-awaited East-West opening occurred at approximately 2000 hours WAST 6SA switched on his 50 Mc. receiver, while finishing some typing and was astonished to hear 'VK2MD over to VK2AQ.' From then on till 2050 he heard many stations between 50.85 and 51.23 Mc. including VK3KX and SS definitely identified (Kilowatt Xray). 6HM and a.w.l. (v.h.f.) Alec Massingham also heard this signal at 50. Other stations heard by all three were 2SP, 2MD and 2LD7, and 6SA also heard 4EQ. 6SA went so far as to turn off all other receivers in the house (we have been caught that way) but the signals still remained. 6HM caused much excitement in VK2 and VK3 by reporting matters on 14 Mc. Skeds were kept next evening but nothing was heard. Receivers used were 6HM superhet, with two r.f. stages; 6SA super-regen with r.f. 3KX has already reported that he was not on 50 Mc., but he was on 14 Mc. at the time. Where were you other chaps? 6HM is six miles from 6SA and Alex is about three miles from 6HM and 4 miles from 6SA; so what? Any solutions will be welcomed here."

To the writer, here in VK3, this sounds genuine enough as a report but something seems a bit "screwy." Not very complimentary to 3KX to have "harmonics" that get over to VK6; maybe 3KX pulled one switch too many and put the 50 Mc. Transmitter on together with his 14 Mc. rig. (2VL for example, can transmit on 50 and 3.5 Mc. at the same time.)

Anyhow there was plenty of activity in VK3 on 50 Mc. that night. 3UI in Northern Victoria, 3PG, 3HT, 3ABA, and 3RR all in Melbourne; and 3HZ in South-Eastern Victoria, for instance, were all busy, and it seems strange that none of these were heard, seeing that they are spread out over a wide area. Ye scribe did not know that 3SP at Colac was working on 50 Mc., however.

There is an acute shortage of notes this month, what is wrong?

VK3 FIELD DAY

On Sunday, 7th March, the following went portable: VK3YS-ABA, 3CI, 3US, 3FR and 3RR. 3YS used the usual phone rig, 6N7, 6V6 and 832 with 3 watts at Mt. Tarrengower, 2,000 feet high. The receiver was a new converter, 6AK5, 8AK5, 9002 into a Type 108 (on 6.3 Mc.) with a three-element beam 12 feet high. 3CI, 3RR, 3HK, 3HT, 3UI, 3ABG and 3GM were worked, and 3GG, 3CP and 3DW were heard. Signals varied from S7 to S9. Their best was their contact with 3CI at Foster 165 miles north, S8 signals both ways.

3CI was at Mt. Fatigue, near Foster, but no further details are to hand.

3US was near Red Hill, but no dope to hand. 3HK took his usual portable to near Ferntree Gully at 1,800 feet high. He used his usual portable with 5 watts input and a converter, and worked 3US, 3RR, 3BI (aj Leongatha) S7, 3CI at Foster S9 plus, 3CP, 3FF and 3GG. Had to shift location to Sassafra before he could contact 3YS who was S "zero" at Ferntree Gully.

3RR, fixed portable at Macrae, used usual rig with about 30 watts. "Dicky" made concrete bricks and a few contacts in between. He noticed marked "selective" fading on 3YS, whilst 3UI and 3ABG were very weak.

Seems to ye scribe that the country boys are stealing the show at these field days and it is very good to hear them on.

50 Mc. VK3 JOTTINGS

3UI at Tatura (95 miles north of Melbourne) now has a three element close-spaced beam 45 feet high, giving him three S points better reports. The difference is very marked in Melbourne. 3UI is using 40 watts on a 807. On 2nd March he celebrated by working 3HZ (130 miles) with 5/5 sigs both ways. Also worked 3PG, 3HT and 3ABA with S6 signals.

3ABG with his new 51 feet stick now reports 3DW (18 watts on a 807) S7.

3ABA quite active of late with beam to the north trying to work 3UI, 3ABG and 3DW, etc. Finds c.w. to be surest way of getting through when signals are down (3RJ please note).

After 3YS came home from the field day (7/3/48) he heard 8UI, 95 miles away, "like a local" and 3UI worked 3BQ and 3RR, so 3YS called 3UI on phone with 8 watts for a joke—what's more 3UI came back and gave S5, so Fred changed to 20 watts and got S8!

3AFP is a new station on 50 Mc. at Shepparton. 3ZL at Ballarat still works Melbourne stations

regularly. The "f.m. gang" 3RR, 3BD, 3DH and 3HK still going strong. 3DH has f.m. transmitter now; he uses a three tube f.m. adaptor on the receiver, cathode follower (from i.f.) into limiter into discriminator, then back into set audio.

3GG on again lately, "when are you going to clean up your shack?" visitor 3KN asked 3GC. Bon stares and says, "gosh, I just have!!" Bon is keen to go mobile.

Max Howden calls every day at 1200 and 1500 hours on c.w. Judging on facts, lack of DX is caused by Max, for as soon as Max took his holidays in December last, the band opened wide; so there is talk of "passing round the hat" to give Max another holiday. 3BD is still haunted by b.c.i. trouble. 3XA's c.r.o. showed acute lack of pos. modulation peaks on 3BD's signal so Eric scratched round and found that removing 0.5 mfd. 807 screen by-pass condenser it cleared the trouble.

3ABG has heard 2BW (125 miles away). 3EH is busy building a big receiver to feed the converter into. 3ZD busy making comparative tests on dipole and 7 Mc. zepp as antennae for 50 Mc.

It is nice to see the friendly spirit that exists on 50 Mc. For instance the other night 3BD was cuddled up nice and close (in frequency) to 3QE, whilst at same time 3RR and 3DH were even more intimate. Perhaps they were practicing for the days ahead when a 4 Megacycles band width will be a memory! There were no other stations on, by the way!

VK4 50 Mc. ACTIVITY

A feverish burst of activity by VK4 Hams on Wednesday evening, 3rd March, followed the reported results by VK6 on the previous night of VK2, VK3 and VK4 50 Mc. signals. Several of the Brisbane gang are waiting for the erection of a beam at 4CU's QTH. The 50 Mc. section of 4XG's de luxe transmitter is nearly complete; 100 watts to an 829B. The owner, Gordon, is waiting for some twin lead to arrive. 4RY's new transmitters and receivers are complete and waiting their owner's return from the south. Must have had to tear yourself away, Bill.

4RT, now free of the Secretarial duties, is rebuilding in a big way, using SCR522, 4AW, "the end up on the hill," consented to favor the 50 Mc. band with his presence on VK6 night. The gang are getting a little restive and a field day should eventuate any old time now. 4ZU, according to certain local reports, is slightly off the beam with a project to indicate the arrival of 50 Mc. signals (from 4CU, he hopes) on the band without having to be in personal attendance. It is all done with mirrors. More details later if the scheme is as successful as is hoped. Believe the north gang are active but no details.

VK6 ACTIVITY

6EC, at Minding, is still putting in good signals and we are all waiting to hear that the receiver is ready Eric.

Still no sign of 6MG, Manjimup, nor of 6HT and 6WT of Albany.

6GS, of Harvey, has converter going nicely. 6FR, of Mullewa, back from holidays in the city, and we are expecting to work you over that 270 mile path Frank.

BEWARE! A 24 ELEMENT BEAM ON 166 Mc.

3OF expects to put up a 24 element beam on 166 Mc. Look out for 3QK, 3LV, 3ZU, 3BM and 3OA, all of whom have receivers and expect to be on soon.

Mr. W. J. Hartley, an enthusiastic v.h.f. listener, supplied the following information of activities on the 160 Mc. band. The most outstanding event on 166 Mc. for the month of February was the exploit of VK2BZ of Tighe's Hill, Newcastle, in creating a new DX record of a one-way contact to Katoomba, a long haul of 100 miles. Three stations in 2LZ, 2LY and 2AFO heard the signals which resulted from 50 watts to a 829 final, plus a fine four element vertical rotary antenna 40 feet high and the same equipment was responsible for a S9 two-way chat with 2VW at Moroubra. Nice going for a 72 mile contact, yet 2RZ cannot hear 2ADX who is a few miles away. However some company will now be on hand as 2ADP, of Cessnock, is making his debut on this band.

Speaking of 2ADX, it is worth while to point out that he is prepared to put a signal on 166 Mc. every night except Tuesdays at 1900 hours EST by prior contact at 1845 hours on 7 Mc.

The fifth district activities are given over to rebuilding of rigs by 5GA, 5SP, 5OG and 5MZ, so that the only busy ones are 5JD, 5NG and 5GB. The first two Hams have figured in a 166 Mc. scare

which apparently was started by some crack-pot in using the calls of 3ACM and 3BG to work 5JD and 5NG. The latter has made it quite clear that the Bilsley shot tournament is not the only place where guns are used.

Prompted by the VK2 doings on the band, there will be attempted an effort to break the present two-way phone record of 80 miles, and in this respect we wish both 3LS and 3MB every success. For the VK3 v.h.f. group, April 11 promises to be the biggest 166 field day yet held, as it is understood that there will be five portable stations out on the job with the calls of 3LS, 3MB, 3RR, 3ABA-3YS, and 3ACM (the latest to go gas buggy). At the city end SEM, 3AKI, 3YJ, 3LH, 3MN, 3NB and 3XM will be by for contacts and a possibility of some country observers keeping tab. Several new recruits have had their initiation to this spectrum via the hardest test, their receivers, and no doubt 3TQ, 3KV and 3JP will make plenty of use of the breathing space on 166 Mc.

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FEDERAL, QSL and DIVISIONAL NOTES



Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.
Meeting Night—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.
 Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Coogee.
Zone Correspondents—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, Canonba St., Nyngan; South Coast and Tablelands: R. H. Rayner, VK2DO, 42 Pettit St., Yass; Southern: E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury.

VICTORIA

Secretary.—A. B. D. Evans, VK3VQ, Box 2611W, G.P.O., Melbourne, Telephone: FJ 6997.
Meeting Night—First Wednesday of each month at the Radio School, Melbourne Technical College.
Zone Correspondents—North Western: B. R. Mann, VK3BM, Quambatook; Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: B. Seccrine, VK3BI, 17a Raglan Street North, Ballarat; North Eastern: D. Tacey, VK3DW, 18 Harold St., Shepparton; Far North-Western Zone: Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; Eastern Zone: J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7168 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

From VK6WH.—Sundays, 0930 hours WAST on 7168 Kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—G. G. Auguataean, Box 638J, G.P.O., Brisbane.
Meeting Night—Last Friday in each month at the State Service Building, Elizabeth St., City.
 Divisional Sub-Editor: H. T. MacGregor, VK4ZU, "Moquet," Eildon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box i234K, G.P.O., Adelaide.
Meeting Night—Second Tuesday of each month at 17 Weymouth St., Adelaide.
 Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.
Meeting Night—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.
 Divisional Sub-Editor.—R. W. S. Hugo, VK6KW, 8 View St., Subiaco.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.
Meeting Night—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.
 Divisional Sub-Editor.—W. W. Watson, VK7YY, 12 Cromwell St., Battery Point, Hobart.
 Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL

ALTERATION TO HIGH FREQUENCY BAND

As a result of negotiations between Federal Executive and the P.M.G.'s. Department the band 144 to 148 Mc. becomes available for exclusive Amateur use as from the 1st May, 1948. This band replaces the 106 to 170 Mc. band.

DX CENTURY CLUB RULES

As previously mentioned in these notes, a proposal was put to Federal Council to amend several of the Rules of the DX C.C. It has now been agreed by Federal Council that the amended Rules will be as follows:—

Refer to "A.R." August 1947, page 9.
 Rule 1.—Applications for membership shall be addressed to the Federal Secretary, Box 2611W, G.P.O., Melbourne, and shall be accompanied by the necessary Confirmations and List of Countries as required by Rule 10, together with a sufficient remittance in postage stamps to cover return of the Confirmations by Registered Mail.
 Rule 12.—Applications and Confirmations shall be examined by an Awards Committee, consisting of

SILENT KEYS

MAYO RICHARDS, VK5WR

It is with regret that we announce the passing of Mayo Richards, VK5WR. Recognised by such an authority as "QST" as the top DX man pre-war in VK, Mayo made a host of friends both national and international. Modest and unassuming, he was always willing to assist the younger Ham, and his advice was backed by years of practical experience. Talking to him a few weeks before his death he impressed upon me just what a wonderful hobby Amateur Radio was and how much it had helped him during his illness. Amateur Radio can ill afford to lose such a stalwart as Mayo, and all will join in extending sympathy to his relatives.

the Federal QSL Manager, the Federal Traffic Manager and the Federal Secretary, who shall, if satisfied that the applicant is eligible for membership in accordance with these Rules, arrange for the member to be listed in "Amateur Radio," under the appropriate section.

Rule 13.—The decisions of the Awards Committee shall be final and binding in respect of any matter pertaining to these Rules.

DX C.C. LISTING

Phone—	
Nil	
C.W.—	
VK3CN	Open— 108 (3)
VK3BZ	109 (5)
VK3HG	100 (4)

Two other applications have also been received but are still awaiting further checks by the Awards Committee. The figure in parenthesis indicates the Membership Number to the DX C.C.

W.A.C. CERTIFICATES

All applicants for the W.A.C. should insure that their applications are made through their Divisional Councils who will submit them to the Federal QSL Manager.

CHANGES TO CALL SIGNS, ETC.

Alterations:—
 VK2ES.—E. M. Simpson, 12 Merlin Street, North Sydney, N.S.W.
 2GG.—J. W. Wood, Flat 265c, Housing Estate, Herne Bay.
 2NU (in lieu of VK4DC)—D. Dawson, c/o Station 2YM, Tamworth.
 2OP.—A. B. Roy, 38 Hobart Road, New Lambton.
 2PI.—W. L. Pitts, c/o Station 2OA, Canberra.
 2QS.—N. O. Scott, 3 Devon Street, Hamilton, via Newcastle.

2SS (in lieu of VK3SS)—A. Skene-Smith, 30 Malcolm Street, Narrabeen.
 2WR.—A. Shipley, 65 Brisbane Street, Bondi Junction.
 2WY.—W. L. Butters, Rambuca Heads, North Coast.
 2XU.—W. L. Nye, 168 Ramsay Street, Haberfield.
 VK3AJG.—J. S. Griffiths, 30 Griffiths St., Caulfield.
 3CY.—C. Yeoman, 17 Jennings St., Sandringham.
 3KI.—T. P. Kirby, 79 Normanby Road, Kew.
 3IP.—G. Wiburd, 96 Roslyn St., Middle Brighton.
 3MK.—N. D. McKenzie, 18 Porter St., Prahran.
 VK4AJ.—A. Miller, 164 Boundary St., West End, Brisbane.
 4EW.—E. H. White, Mount Bassett, Box 303, Mackay.
 4KA (in lieu of VK3ASD)—O. S. Dahl, Kalamia Estate, Ayr.
 4SN.—F. H. Shannon, State School, Minden.
 4VJ.—V. Jeffs, McPherson St., Gordon Park.
 VK5IJ (in lieu of VK3IJ)—I. L. Griffin, Box 46, Wirrabarra, S.A.
 5OX.—H. C. Freeman, 12 Third Ave., St. Peters.
 5VO.—J. G. Mason, 12 Dunn St., Semaphore.
 VK6FM.—R. H. Mould, 6 Mile Hotel, Wyndham.
 6MG.—L. P. McGuire, Duffield St., Minjilup.
 VK7GA.—G. D. Aschman, Flat 4, The Continental, Macquarie St., Hobart.
 7RA (in lieu of VK3RA)—J. H. Ratcliffe, 10 Mona St., Battery Point.
 7SJ.—S. J. Excell, 77 Mollie St., Hobart.
 VK9HI (in lieu of VK3HI)—L. C. Raebel, Radio Transmitting Centre, Samarai, Papua, T.P.N.G.

Cancellations:—

VK2AKT.—A. A. Sinfield.
 2ALD.—Rev. R. B. Dransfield.
 2ANV.—A. W. Munro.
 VK4KF.—K. F. Price.
 4VG.—V. J. Griffin.
 VK9BX.—N. L. Bonney.
 9CV.—R. B. Phelps.

New Issues:—

VK2ARC.—R. C. Godsal, "Burrawong," Pacific Highway, Palm Beach, N.S.W. (Portable).
 2OW.—G. W. Reid, 157 de Boos St., Temora.
 2QO.—G. E. Nolte, Windsor House, Challis Ave., Potts Point.
 2RO.—A. R. Gray, 30 Jarrett St., Campsie.
 2RS.—R. K. Try, 4 Mary St., Rhodes.
 2SP.—A. H. Sherrland, 61 Ocean St., Woollabra.
 2SN.—M. C. Griffin, 138 Clarinda St., Parkes.
 2SU.—C. B. Jones, 2 Raphael St., Casino.
 2SY.—G. A. Cliphams, 3 Elizabeth St., Parkes.
 2SZ.—K. R. Harvey, 59 Macquarie Rd., Auburn.
 2TW.—O. O. Smith, 20 Grafton St., Cremorne.
 2WV.—G. O. B. Waters, 8 Bourke St., Wollongong.
 2YG.—L. J. McGarrigle, Princes Highway, Engadine.
 2YR.—R. H. S. Adams, 54 Hurstville Rd., Hurstville.
 2YS.—S. P. Sorenson, 589 Wyse St., Albury.

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

VK2AJB—G. C. Churle	R.A.A.F.
VK2BQ—F. Easton	R.A.A.F.
VK2JV—C. D. Roberts	A.M.F.
VK2VJ—V. Jalvis	R.A.A.F.
VK2VK—W. Abbott	R.A.A.F.
VK3DQ—J. D. Morris	A.M.F.
VK3HN—J. McCandish	A.M.F.
VK3IE—J. E. Mann	R.A.N.
VK3NG—N. E. Gunter	M.N.
VK3OR—M. D. Orr	R.A.A.F.
VK3OW—G. L. Templeton	R.A.A.F.
VK3PI—J. L. Colthrup	R.A.A.F.
VK3PV—R. P. Veall	A.M.F.
VK3SF—S. W. Jones	A.M.F.
VK3UW—J. A. Burrage	R.A.A.F.
VK3VF—J. E. Snaddon	R.A.A.F.
VK4DR—D. Laws	A.M.F.
VK4PR—R. Allen	R.A.A.F.
VK5AF—C. A. Ives	R.A.A.F.
VK5BW—G. Phillips	A.M.F.
VK5EM—J. Mann	R.A.N.
VK6GR—A. H. G. Rippen	R.A.N.
VK6JC—J. E. Goddard	R.A.A.F.
VK6RS—K. Anderson	A.M.F.
VK7LP—L. P. Hyland	A.R.P.

The above names and details have been received by Federal Executive. Anyone knowing of any name not included on the above list or errors therein should communicate with F.E. at the earliest.

We are indebted to VK5CB and VK2JT for some corrections to the above list.

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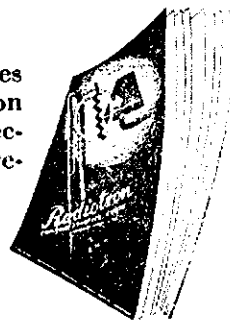


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3RD—H. V. Amor, 26 Crotonhurst Ave., Caulfield.

3YX—J. N. Blake, 185 Beaconstead Pde., Middle Park.

VK5BJ—E. B. Haynes, M.V. "King Stephen," c/o. George Wills Co., Port Adelaide, S.A.

5HA—R. H. Harvey, 8 Ada St., Unley.

5LU—C. S. Schick, 154 Drayton St., Bowden.

VK6AZ—H. M. Watson, Hostel, Forrest, W.A.

VK7DM—E. C. Sheldrick, c/o. D. M. Richardson, 6 Cooper St., Burnie.

7RB—R. B. McLean, 84 Invermay Rd., Launceston.

FEDERAL QSL BUREAU

RAY JONES (VK3RJ), MANAGER

Printed rules and proformas of Entry Form for the forthcoming B.E.R.L. contest commencing 0001 GMT 3rd April may be had on application to this Bureau.

A circular from the Secretary (KSNAC), Naval Air Station, Columbus, Ohio, U.S.A., dated 16th February, solicits much information which could have been readily obtained from any call book. The station will be on the air shortly and its mission is "to promote good-will, to offer a means of recreation for personnel interested in radio, and to promote world-wide friendly contacts."

Further alterations to Overseas Bureaux:

Canal Zone—C.Z.A.R.A., Box 407, Balboa.

Cook Islands—Ray Holloway, Box 65 Rarotonga.

Northern Rhodesia—VQ2DH, Box 93, Livingstone.

Philippines—Eldipio G. De Castro, Radio Training Institute, Manila.

The statistical year of this Bureau has been altered to close at the end of February each year to conform with the fiscal year of the Federal Executive. For the 11 months ended February, 1948, the total of cards handled by the Bureau is 71,868 as compared with 22,271 handled during the year ended March, 1947.

NEW SOUTH WALES

NORTH COAST AND TABLELANDS ZONE

Bob Gream (2AFP) has resigned as Zone Officer. Bob could not compete with the man-made interference at the new QTH and Peter Alexander (2PA) takes over. 2AQJ is moving to Sydney shortly. 2ON has a new 28 Mc. rotary. 2ASF is now at Kempsey, but inactive at the moment; teaching at Murwillumbah. 2JK works on 14 Mc. phone, not so often on 7 Mc.; lot of trouble with man-made QRM. 2OE has nice phone and consistently on 7 Mc. 2NY doing good work on 28 Mc. with a new final. 2SH is active with excellent portion of an AT20 on 7 Mc. Old-timer 2XO has made a comeback on 3.5 and 7 Mc.

COALFIELDS AND LAKES ZONE

2YL celebrated his return from hospital by working 2LY on 50 Mc. 2MK has taken up archery, filling the air with arrows instead of r.f. 2PZ and 2XT still battling on 7 Mc. 2ADT contacted 2GU on 50 Mc. 2KZ continues to chase exclusive States on 28 Mc. 2KF has graduated to 50 Mc. Wonder if 2TY and 2ADX are on 166 Mc. 2OC has a rig on each band 50 to 3.5 Mc. 2RU was another to work 2GU on 50 Mc. 2AMU has a nice beam and rig on 28 Mc. 2AEZ on 14 Mc. chiefly and building up his post-war countries slowly.

NEWCASTLE AND DISTRICT

2CS almost completed an article on wide-spaced "Yagi" arrays—much valuable information included—the Editor should get it shortly (Be pleased to receive same—Ed.). 2AHA is using a wide-spaced array on 28 Mc. with excellent results. 2AFS now a DM, new daughter; also on 28 Mc. Congrats to 2BZ on working to Sydney on 166 Mc., has beam arrays on 14, 28, 50 and 166 Mc. 2TE has joined the ranks of the 28 Mc. boys with a dural rotary. 2XQ has been absent from Maitland for about nine months but is now back again and pounding the brass. 2ADX on 28 Mc. and working 166 Mc. regularly. 2AMU has a beautiful signal on 28 Mc., DX is easy. The Newcastle gang are waiting for 2TY to put up a rotary and beam it their way. 2AGD has nice phone with new xtal mike and compressor working nicely. 2FP still trying to get the 88th country on 28 Mc. phone. 2PQ has cleared up the drive problem on 28 Mc. 2CT working 14 Mc. DX mainly. 2AGG has the rotary tuned and results are f.b. 2AGY what about trying 28 Mc. Fred? Would anyone around Newcastle please forward news to 2FP by the 3rd of each month for these notes.

WESTERN ZONE NOTES

2AMR has new transmitter and v.f.o. on all bands, push-button control, 17 coloured lights, 18

meters and 90 watts!!! 2II has been holidaying at Port Macquarie where he landed some big ones. 2SN, a new Ham at Parkes, uses an AT5 and 11 tube home-built receiver. 2BT has gremlins in his transmitter and still awaiting his copy of "A.R." 2WJ working DX on 7 and 14 Mc. c.w. and phone. 2IW. Broken Hill, has joined the W.I.A.; still trying for his first DX contact, has one G contact but that was as a mobile marine. 2NS had a visitor in the person of VK3JR/portable, who worked plenty of DX using 2NS's rig; believe Trevor is now going to put up some of his better DX cards. 2LY has pushed his 50 Mc. antenna up off the roof, result 2ADT getting signals in lieu of the drain pipe. 2LZ and 2FI hearing 2BZ in Newcastle on 166 Mc. 2HZ can't get bolts to put receiver together, another excuse. 2DQ is working plenty of DX on 14 Mc.

SOUTH COAST AND TABLELANDS

Tubby Vale (2ANN) resigns from the position of Zone Officer owing to pressure of business and reckons he couldn't stand 7 Mc. to gather news. Roy Rayner (2DO) will be taking over and notes as usual next month.

SOUTHERN ZONE

Zone Officer 2OJ still suffering from shock after being mentioned in despatches by "Gremlin," "A.R." February page 14. As Nov never had a v.f.o. he is still pretty hot under the collar. Maybe a pirate anyway. "Gremlin" must be able to twiddle to follow a v.f.o. around, either "Gremlin" is very good, or the v.f.o. didn't move very fast!!

VICTORIA

With 170 members in attendance, amongst whom were two visitors in Mr. H. W. Hannam (VK2IR) from South Hurstville, N.S.W., and Mr. N. G. Roberts (VK5NR) from Katherine, N.T., the March general meeting was held in Melbourne on the 3rd March; the President, Mr. R. Cunningham (3ML), occupied the chair. Reports from Mr. Glover for the Technical Advisory Committee, Mr. W. Mitchell in charge of the Food for Britain Fund, and Mr. C. Quin, Disposals, were received. The President also gave a summary of the business which had been conducted at the last Council meeting. The Treasurer reported that he had found the volume of his work to be too great and notified that it would be necessary to organise this work on a different basis.

Mr. T. Hogan, Editor of "Amateur Radio," mentioned some of the interesting material which was being received by the Magazine and urged members to keep up the supply of technical articles. A great deal of discussion arose following suggestions by members as to what type of material they desire to see published in the Magazine.

Mr. W. Gronow, President of Federal Executive, announced that the Federal Convention would take place in Melbourne at Easter. He said that one important aspect of the Convention was the definite planning towards attaining the objectives of the

Institute. Mr. Gronow also expressed his appreciation of the fine co-operation of the officers of the Federal Executive throughout the year and urged all members to think "Federally" as well as "Divisionally."

Comments on the recent "Hamfest" were invited by the Chairman with the view of improving this function for future occasions. It was decided that it would be desirable to emphasise radio activities by organising such features as a transmitter hunt, and that these functions should be held more often. A motion was put that an Entertainments Committee be formed to promote such functions.

Many new members as recommended by Council were presented and approved.

In the time devoted to general business for the night Mr. H. Kinnear (VK3KN) spoke on the subject of "Gremlin" and moved that the VK3 Council be requested to reconsider, and if thought fit, rescind their earlier determination that articles written by "Gremlin" appear in "Amateur Radio" under his own name. This motion was seconded by Mr. A. Evans (VK3VQ) and when put to the meeting after discussion, the motion was overwhelmingly carried.

Council met twice during the month and on the first occasion much business was on the table for discussion that a second meeting was necessary to fully review the agenda for the Federal Convention being held at Easter.

Items of general interest arising out of these meetings is as follows. Council, following a motion carried at the prior general meeting, has seen fit to rescind its former earlier decision re "Gremlin."

Mr. Harry Fuller (3HF), Warrnambool, of the South Western Zone, has been elected as Country Councillor. To represent the Victorian Division at the Easter Convention, Mr. H. Stevens (VK3JO), Councillor, was appointed. As Mr. Stevens is of long standing in the affairs of Amateur Radio in Victoria, it was felt his appointment to represent this Division at such an important function and conference was most apt.

The remaining decision, and of importance to all, is that QSL cards which are unclaimed after being held for not less than 6 months, will, after call signs concerned have been publicised both in "Amateur Radio" and broadcast from VK3WI, be destroyed at the discretion of the QSL Manager.

EMERGENCY NETWORK

When a fire started in hilly bush country 6 miles east of Springhurst at approximately 1330 hours on Saturday, 6th March, Henry Fleming (VK3EP) set up portable equipment at the scene of the fire and was in communication with Des Terrill (3BP), at Rutledge, by 1445 hours. Emergency messages were sent to the Chiltern Brigade Captain via VK3BP.

On Sunday, 7th March, 3HP again operated from the fire area, during the cleaning up of burning scrub, etc., and on this occasion Henry worked to Howard Wohlers (3YV), at Wangaratta. Emergency messages were sent to the Springhurst Brigade Captain and the Regional Fire Officer at Wangaratta.

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The following is a review of the equipment used on Emergency Stations on 4984 Kc. 3HP's transmitter consisted of a 1D4 crystal oscillator and 6V6 as power amplifier, anode and screen modulation being supplied by a class B type 19, driven by a 1L5G speech amplifier for a carbon microphone. Power input was 9 watts, and h.t. supply was derived from an FS6 vibrator unit. The receiver was a modified FS6, battery operated. 3BP used an FS6 transmitter/receiver on c.w. and 3YV used his normal station equipment.

In concluding this report it might be mentioned that the portable station of VK3HP operating from the fire area, was also in communication with VK3IS in Melbourne on the network schedule 10-45 hours on Sunday.

Several members of the Geelong network went to various locations in Geelong and surrounding districts on Sunday, 14th February, and carried out a rehearsal for the demonstration of emergency communications. Present at the tests was the Regional Fire Officer who expressed interest and satisfaction at the set-up. Reviewing the results

of the tests it was apparent that this district could be well covered in case of emergency. The equipment used by the Geelong network consisted of Type 3 Mark II, remodified FS6 and base station equipment operating on frequencies of 3492 and 6984 Kc.

EASTERN ZONE

The Eastern Zone Convention was held on the 14th and 15th of February. Hams gathered during Saturday afternoon at the home of Ossie Kellas (3AHK). He has a dairy farm one mile from Timambra. Bob Cunningham, President of the W.I.A. Victorian Division, and member of the Zone, came from Frankston. En-route to Timambra 3HZ and 3VL were contacted with 3HK's portable 50 Mc. gear. Visitors included 3BM (Northern Zone), 3AG, 3HK, 3AN, 3VC and Keith Hatch all from Melbourne. Many Hams met for the first time those whom they knew so well on the air.

Raffle tickets in aid of the Food for Britain Appeal were quickly disposed of at 1/- each. The prizes, a 2 1/2 inch c.r.o., pair of dynamic car phones and an 807 were donated by 3WE and 3SS. Zone contributions to the Appeal now total £4710/-.

High praise must be given for the sumptuous dinner provided. Our thanks go to Mrs. Kellas and Mrs. Scott, ably assisted by other XYLe and friends. In proposing the toast of the W.I.A., 3WE said how pleased he was to see such a large and representative gathering. 3ML in response said he and those with him were very pleased to be present, among other points he stressed the necessity for us to make the most use of our bands lest commercial interests claim them.

After a short break to allow the tables to be cleared, the Zone meeting followed. Officers elected for the ensuing year are as follows:—President, A. K. Williams, 3WE; Vice-President and Secretary, J. G. Colley, 3QZ; Official W.I.A. Communications Stations and Notes Correspondent, J. Chilvers, 3DL.

Resolutions passed included a request that the W.I.A. conduct intensive propaganda to induce Hams to abstain from local contacts on 14 Mc. bands. Norm Chapman (3ANC) was proposed as a Country Councillor. Sunday evening Zone hook-up is to be continued as at present.

On Sunday morning members assembled at Maffra. A number accepted the invitation of Dr. Brent to inspect audio equipment and hear some of his very fine records. Later, cars conveyed the gathering to Glenmaggie Weir. The weather was fine at Maffra, but on arrival at the weir it was raining heavily so we proceeded to Glenmaggie Hall where the supper room was hired for a picnic lunch, 27 Hams were now gathered with their XYLs and junior ops., making a total of 42.

After lunch 3IK set up his 50 Mc. receiver and transmitter. Keith gave a very interesting talk on the conversion of the FS6 to a portable 50 Mc. job that has proved itself over the past 12 months to be a complete success. This was followed by a very much appreciated talk by 3ML on V.H.F. Development. 3DI also brought his very creditable 50 Mc. equipment. 3AJJ, and 3ANL added interest and assisted with FS6 portable gear on the 7 Mc. band. Afternoon tea at 4.30 p.m. brought our first post-war Convention to an end.

FAR NORTH-WESTERN ZONE

The formation of this zone took place at a meeting held on Sunday evening, 21st February. The following officers were elected: President, Max Folie (VK3GZ); Secretary, Harry Dobbyn (VK3MF); Treasurer, Frank Clark (VK3FC); Communications Officer, M. Folie (VK3GZ). Attendance was ten, including both members and potential members. The State President, R. H. Cunningham (3ML) was present and met the boys. He spoke informally on W.I.A. matters and urged us to make an early start with some 50 Mc. equipment. All in Mildura showed keen interest in the fine 50 Mc. converter 3ML brought along for our inspection. We hope to be active on 50 Mc. as soon as possible, as Melbourne to Mildura will afford the longest 50 Mc. link with the metropolis that will still be within the confines of the Victorian Division.

WESTERN ZONE

The Zone has been rather quiet over the past month. 3YW has been rather inactive too owing to business moving. Had a chat with our President (3GN) the other day and he was very thrilled with what he saw of the State Convention; if it does nothing else it gives us a chance of bringing what to most of us are only voices into solid reality. George (like others) is waiting to get an AT5, which he intends to use as an exciter for a new (and permanent) 28 Mc. transmitter. The old reliable Type 3 Mark II will continue as of yore to cover 3.5, 7 and 14 Mc. George also plans a three-element beam as per VK3JK, so should do quite well on 28 Mc. but will probably miss the hill location Ian has.

3IQ, of commercial fame, has discovered, among other things, he cannot operate while 3CV is on the air owing to feed-back into the programme. Kevin has been very busy putting up a 60 foot

tower from Oregon collected about the place. After lots of fun and games the tower stood up. It is to have 14 Mc. beams plus all trimmings and a platform at the top to adjust everything right on the nose. 3IQ can also take his 50 Mc. gear up there so that he should be able to hear Willie's sweet tones from 3XC. Kevin has a 100 watt rig already for 14 Mc.

3HL has just returned from holidays and managed to collect a 24 volt, 1/2 h.p. motor, from VIM to drive a 28 Mc. beam (possibly a 14 Mc. one also). Allan has a windmill tower just about ready to go up so after cropping is over should be going f.b.

3AKP plus YF plus two local prospective Hams had an impromptu hamfest at 3AKW over one week-end, main reason for visit was to look over 3LK transmitter and of course 3AKW's.

Heard 3XG (at Kaniva) working 5RA the other Sunday. A nice signal Ben for 15 watts and your 50 watts on 14 Mc. should be better still. Hope to hear you in the zone hook-up soon. We are to have a new member in 3QL from Mornington, who is going to Kaniva.

The writer has spent quite a lot of time listening on 50 Mc. during the last field day but heard nothing. Is there such a thing as a 50 Mc. band? Anyway boys don't forget the zone hook-up on the second Sunday, 10 p.m., 7050 Kc.

NORTH-WESTERN ZONE

The N-W Zone congratulates their erstwhile spare part, Mildura and district, on their excellent "kick-off" as the new Far North-Western Zone, and we trust that the operation of "multiplication by division" will be all to the good.

We are pleased to welcome two new members 3GW and 3AIT and two new associates J. P. Troy and D. G. McLennan. We hope to rope in the last two or three non-members to make 100 per cent. membership in our zone.

Our zone was represented at the S.E. Zone Convention by 3BM who reports an extra good time. He invited S.E. members to return the call by visiting the N.W. Convention on a date to be arranged to suit. There is likely to be a lot of activity on 50 Mc. in our zone very soon judging by the enthusiasm aroused in two of our executives on their recent visit to Ham shacks in the city.

3OA has brought home a lot of gear from the city and will be on 50 Mc. soon. His new receiver is a No. 11 set re-built and hotted up for 14 Mc. only. 3TL's activities have been limited by an operation, from which we are pleased to say Mr. Treb. is well on the way to recovery. When visited on one occasion he was found in bed, building up a v.f.o., an f.b. job too! 3HR is re-building, and making a lovely job we've heard. 3IL is handicapped by the d.c. supply in Quambatook. Doubts if he will change his gear as his stay may be short. 3BM visited several Ham shacks down Melbourne way and has been bitten by the v.h.f. bug. Much technical activity, very little operating.

NORTH EASTERN ZONE

Benalla, Sunday, 22nd February, 1948. The second N.E. Zone Convention was held there in the Shire Hall, with a good muster of members. Those present being 3AT, 3ABG, 3AOB, 3APE, 3CN, 3DW, 3KR, 3UJ, 3WZ, 3YV, also Ron Anderson, Wai Share, Les Taylor, Alec Dickson and Doug Brook.

3YV occupied the chair and the meeting opened with the boys observing one minute's silence, standing with bowed heads as a token of respect in memory of our late member, Bert Buck (3TM). This was most impressive and a reminder to all of us. Need I say more.

General zone business followed, and at the conclusion of such heavy labor we retired for refreshments to a popular local cafe. As has become usual, 3ABG and 3UJ again entertained with 50 Mc. portable gear at points 10 miles apart, 3KR's shack being one location at which most of the gang gathered.

Considerable improvement in Alan's and John's 50 Mc. gear yielded a corresponding improvement in the contacts, and we hope, stimulated sufficient interest to induce more zone members to "Try Six."

Final round-up for the day was at 3KR's, and after an hour or two spent in chatting to one another (one of the real treats of these Conventions), the gang gradually drifted home. As before, our second Convention was well received and a firm desire expressed by all to "be in the next," which by the way, may yet be held at Avenel. (City Hams please note.)

Nice going fellows, the spirit is right, as evidenced by the £23/1/- contributed to the Food for Britain Appeal, so keep it up until our next merry meeting.

3JK is very busy building new speech amplifier and modulator units—very nice job too. 3HP, 3BP and 3YV very busy on the emergency frequency of 6984 Kc. during the 6th and 7th March, with

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bushfire at Springhurst—excellent work done by 3HP. During same busy period 3YV also found time to work ZLs, HCLFG, LALF, PAUMJH, VS7RM, F8PA on 28 Mc. phone.

QUEENSLAND

March has been a busy month in VK4, at least as far as Council has been concerned. At the last general meeting election of officers took place and comprised: President, A. E. Walz (4AW); Vice-Presidents, P. Kelly (4KB) and V. Jeffe (4VJ); Secretary, G. Augustesen (4XG); Treasurer, H. Hansen (4SV); "A.R." Sub-Editor, 4ZU; Federal Councillor, 4FN; Library, 4WF; Publicity, 4LT; QSL Officers, 4EN and 4RC; Traffic, 4PR; Country Representative, 4SN; Associate Member Representative, Mr. Stevens; Station Manager, 4FN.

The existing Disposals Committee having performed 12 months arduous duty, an election of new officers took place in this department also, and the following were elected: 4ZU (Disposals Manager), 4FN, 4AP, 4TR, 4AW. Discussion took place at a subsequent Council meeting and 4FN and 4ZU were instructed to represent the Institute at the forthcoming Eagle Farm sale.

The annual Dinner of the VK4 Division was held at Anzac House on Friday, 5th March, and proved, we believe, the best yet. Over fifty were present, including the Superintendent of Wireless, Mr. Conry, and Assist. Supervisor, Mr. P. Andrews; Mr. R. F. Roberts, City Council; Mr. G. Gipps, Radio Research Board C.S.I.R., and visitors VK3ARK and Les Page (ex-VK4LP, now VK3). In his address the President (4AW) reviewed activity over the past year and appealed for more co-operation from members, both in assisting in the presentation of lectures at meetings and in more v.h.f. activity. He said that it was a source of amazement to him that so many SCR522s had found new owners and yet there was such a small amount of them apparently on the air. He thought that the Queensland Division would do well to start a museum of old radio equipment, and in response to the murmur which was heard throughout the hall, he speedily explained that he wasn't suggesting a junk-pile, but genuine antiques. In concluding 4AW thanked the retiring Council for the loyal and untiring support given during the past year.

Mr. Russell F. Roberts was then asked to propose the toast to the W.I.A. In his speech Mr. Roberts spoke of the pleasure it gave him to speak once again of grid leaks, etc., and mentioned that although his activities did not now allow him to be

active as a Ham, he often took a look around the various bands—"a little different to the old 30 metre days." He appealed to all Hams to stick to the W.I.A. and work hard for it, for it was the Institute and the hard working pioneers who had got us the privileges we now enjoy, and by sticking together we could keep what we have and get back, in part at least, some of what we had lost.

In his reply to Mr. Roberts, the retiring Secretary (4RT) said that the President had given him some hard tasks but this one capped them all, as it was difficult to respond to a toast so ably proposed, and covering such a lot of ground. 4RT said that he had seen the Institute progress from a low ebb with 69 members to the present record of 192 members. The Institute had taken some hard knocks, with two wars and at times, doubtful administration, but had emerged triumphant and it lay in the hands of members to decide whether in completing the building the walls were to be built of granite or of clay. In thanking the Council for assistance, 4RT said it had given him real pleasure to work with them.

The toast to the R.I.'s Department was proposed by 4ZU who welcomed the Department and spoke of the pleasure it gave the Institute to be able to look forward to the R.I.'s attendance at the annual Dinners, and also acknowledged the friendly co-operation at all times forthcoming from the Department. In replying, Mr. Conry spoke of the faith which the P.M.G. had in the Institute and said that after listening to Mr. Roberts' talk of old 30 metre days, he would like to be at it himself once again.

4KH proposed the toast to the retiring officers, saying in effect that he thought they had done an excellent job, he personally was sorry to see them go. The main point in 4ES' reply was that he hoped that the growth in membership was not due solely to the availability of disposals gear. Herb said he was sure the meeting would join with him in expressing regret at losing some of the old Council, especially 4RT who as Secretary had done a grand job.

4XG was called on to propose the toast to the Radio Research Section, Queensland University, and in doing so thanked the Department for the assistance rendered during the year with information on 50 Mc. conditions, etc. Mr. Gipps, in reply, said that he would like to receive reports on v.h.f. conditions from VK4 Hams as they were endeavouring to compile data on sporadic E occurrence. Reports could be sent to the Secretary or through 4WI.

4FN proposed the toast to the Radio Trade Houses, 4XG responded, while Mr. P. Andrews proposed the toast to the Chairman.

Various competitions were run off during the evening, prizes being a microphone, i.f. transformers, and sets of v.h.f. tubes. Perhaps the luckiest (there is another word) recipient was George Barr (4GB), who had got his licence that morning, worked a G that afternoon and "key-presto" got a microphone that night.

SOUTH AUSTRALIA

The monthly general meeting was held at 17 Waymouth Street on Tuesday, 9th March, when Mr. D. Wilkinson (5WD) gave a very interesting and instructive talk on "Air Radio." Once again I cannot write this talk up, as "copy" is due on 10th March which makes it impossible in the time allowed. It is unfortunate that our general meeting is so close to the deadline for "copy," as I gather, that our country members would appreciate a short re-write of the lectures, etc., but the Editor cracks the whip and who am I to query his commands. Among those present were: H. Phillips, R. Lampe, J. Jackson, C. Mayman, A. Powell, S. Ulstrup, C. Basset, G. Warren, R. Wood, S. King, P. Rodgers, N. Bruce, A. Peters, G. Jamieson, C. Warren, A. Kavanagh, K. Turner, and H. L. Fogg. VK5HF, from Mt. Barker, was also present.

The vote of thanks to the lecturer was proposed by Ross Kelly (5 Love William) and was received with acclamation. The lecture having finished earlier than usual an opportunity was given to members to discuss several controversial matters affecting the VK5 Division. The members seized on this with both hands, or should I say feet, because before long they were proposing, seconding, amending, etc., with gay abandon, the obvious result was that someone stood on the programme director's toes (Gordon Bowen, 5XU) who quickly rose to his feet and told all present what they could do with their Xmas pudding, I beg your pardon, their programme.

An icy silence greeted this little homily and then the air was thick with votes of appreciation and everybody telling "Bruiser" Bowen what a good job he was doing. Gordon was completely overwhelmed and all was well. You can deny the rumour that the next lecture will be "The Gentle Art of Fisticuffs," by 5XU!! I pity those poor scholars at Woodville High School.

The copy of the agenda for the Easter Convention was then read and our delegate given some idea of

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what line of action he could take in Melbourne. A letter was read by our disposals manager, from VK3, which explained the whole disposals position to the satisfaction of all present, and after a lot of members had said a lot about nothing, the meeting closed with the general opinion that a good time had been had by all.

The Council meeting for February was quite an outstanding event, as it was the first night in the new quarters, Maughan Church Buildings. Portion of this building, as you know, is occupied by a commercial broadcasting station and this night was apparently their community singing night. To enliven the proceedings I presume, several elephants were borrowed from the local zoo and as they danced to the tempo of the music, large chunks of plaster from our ceiling fell at regular intervals on to the council table. Mr. Ross Harris (5FL) who has never quite forgiven me for writing that paragraph regarding chocolates, etc., suggested that if I went upstairs and joined the elephants in their dance the said elephants would stop in sheer envy. I dismissed this spiteful idea with my usual cold disdain, but the others seemed to enjoy it, and some time elapsed before they stopped their insane cackling, in fact "Doc" was almost convulsed.

I might mention that two new Council members were present in Jim Paris, representing the associate members, and Dr. Ross Adey, who was co-opted to fill a vacancy recently created. The presence of a real live doctor caused a ripple of suppressed excitement to permeate the meeting, although speaking for myself I was a little disappointed because Ross gave no sign of being anything so important, and looked just like any other Ham. I toyed with the idea of urging him to jump up and "whip" out "Doc's" appendix and then if I applauded loud and long enough perhaps he would remove "Doc's" tonsils as an encore, but I gave the idea away.

Business proceeded at a merry pace until we were noisily interrupted by a very charming little girl who persisted in looking through the open door. Receiving the high sign from the chairman I tiptoed to the door, and in my best manner said, "On your way, sister." "Yes Reverend," said this modern example of church-going child and I retired somewhat humiliated, more by the guffaws of the Council members than anything else.

We continued on with business for a short while until interrupted again by what was apparently the "Hunchback of Notre Dame" who said in a voice dripping with fire and brimstone, "Ten o'clock is the time we close," immediately disappearing through a secret panel in the wall. The meeting broke up in some disorder but not before we took the opportunity of making a presentation to Cec. Baseby (5BZ), recognised as the unofficial strongest station (102 watts). The presentation was made by "Doc" who in a few well-chosen words handed Cec. a huge water-cooled tube which everyone present admitted would be in keeping with the fifteen inch water main recently installed in his street. Mr. Baseby seemed a trifle overcome and after being told that the filament took 17 volts at 35 amps, he almost collapsed. He thanked the Council members from the bottom of his heart (yes treasurers have hearts) and said that he would try and leave some of the DX for the rest of the members.

I herewith warn Ralph Turner (5TR) to look to his laurels as any day now we may expect to hear the South Americans all saying "Ullo Cec. Amigo. You have da beeg signal these days!" My spies tell me that Cec. has cut a hole in his shack ceiling to permit the tube to stand vertically. Radio Inspectors please note, the secret switch is two paces east, three paces west of the receiver, behind the water pump.

The short but striking article on electrocution written by Leith Cocton (5LG) was very timely and easy to read. It must have been very convincing to read, as a letter of enquiry has been received from VK3 as to whether Leith was now feeling quite OK. Congrats Leith, any more articles up the jolly old sleeve?

I am beginning to wonder just who is the publicity officer for VK5, judging by the amount of publicity Ross Kelly (5TK) has been receiving in the press lately, I am almost prepared to hand over the keys of the pen and ink cupboard. Ross has always been a "go getter" for some publicity and a story is going the rounds concerning him when he was not as affluent as he is now. It appears that he was touring the streets with a hand-operated barrel organ and stopped outside the house of a prominent musician, Mr. Lloyd Davies (5Q1) who was in the throes of composing a new sonata. When Lloyd could stand no more he leaned out of his window and beseeched Ross not to play so loudly. Next day Ross was back with a printed card on his barrel organ "Pupil of Lloyd Davies." Well if you don't like my tale there is always my head!!

Mrs. "Doc" Barbier has returned home after a

stay in St. Andrew's Hospital where she underwent an operation from which she is doing very well! thank you. We believe that the shock of the "op." was nothing to the shock that she received when she saw the pile of used dishes in the kitchen sink upon her return to the 5MD domicile.

I suppose that now we have a real live YL member attending our meetings I should introduce a fashion note into this column, so here goes. Leith Cocton arrived at the general meeting wearing a ducky pin-striped pair of pants with a contrasting coat to match having a sweet reverse pinstriped at the edges in a lazy daisy stitch. Luke Lucas was wearing that "new look" in his three quarter pants with a polka dot coat cut away at the sides to reveal a dream of a shirt with a dashing open neck which exposed a swan-like neck which was just meant for pearls. Ross Kelly arrived with a pair of snake proof pants which gave the impression of being a little tight under the arms. His ruffle collar and Edwardian tie gave him a dashing appearance, although the whole effect seemed quieter through a pair of dark glasses. Warwick Parsons was wearing the sweetest pair of oversize pantettes topped off with a coat which gave him a high bosomed effect so becoming to the O.S. figure. Cec. Baseby and Frank Wreford were at daggers drawn because each was wearing an exclusive model, exactly the same. Cec. was even noticed to poke his tongue out at Frank who, however, tossed his Grecian hairdo in high disdain. The hit of the night was petite "Doc" Barbier who arrived wearing his pants back to front, a fashion much in vogue in Paris. It proved a little bit confusing to us because we never quite knew whether he was arriving or leaving the meeting. Well that's all for now, you can expect some more fashion notes soon. I don't think!!

W.I.A. membership is making great strides in VK5 and nearing the total of 450. It seems as if we will attain our goal of 500 members sooner than we expected. The A.O.C.P. student classes have filled up again this year and we are refusing applications over the phone daily. This is all to the good, but it is quite a strain on the time of the Hon. Secretary and the Treasurer. Their position is only a voluntary one and can only be conducted in their spare time, which means that if you have to wait a little time for an answer to your letter please be understanding and don't ring them on the slightest provocation. They won't run away with your subscription, and anyway Cec. couldn't run far carrying that water-cooled tube.

Don't forget, you associate members, your representative is Jim Paris, if you have any "wings," "grizzles," etc., he is the man to see. Any criticism or suggestions that you may have he will welcome you with open arms, and should it be at all possible to do so, the Council will do all in its power to help any genuine associate member.

A post-mortem was held at the last Council meeting upon the somewhat disappointing results obtained by our students in the recent A.O.C.P. examinations. Mr. Sheard (code classes) and Mr. John Allan, 5UL (theory classes), attended at their own request and placed joint opinions as to the results of the examinations before Council. Arising from these opinions and other facts submitted, it would appear that a big percentage of non-success can be traced to the apathy of the students themselves. It seems a little unbelievable that students will pay cold cash to join classes and then stay away at odd times or rely upon the one night a week class to prepare themselves for an examination. We old-timers who sat for our amateur ticket without the benefit of any organised classes will remember the nights and nights of study necessary to achieve success. How these prospective amateurs expect to come to a one-night class for six months and then pass the examination is beyond the realm of fancy. Listen fellows, this Ham ticket is not that easy, why I could name plenty of chaps who hold a broadcast ticket, but have failed at their first attempt at a Ham ticket, not because of their lack of technical ability but because they took it too easy, especially the code. Instructors, no matter how good they may be, cannot turn out successful students without the co-operation of the members of their classes, and this means hours of concentrated study at home in preparation for the next lecture or code classes. With the beginning of the new year classes it is suggested that all students look upon the classes with a true perspective and give their instructors all the co-operation they can. If any student is not prepared to do this, well why not spend the class fees and buy a short wave set and settle back to years of short wave listening.

The word "Pirate" as applied to Amateur Radio has never borne the implication that it does when applied to the normal run of things. Prior to the last war a "pirate" was a possible Amateur, one who became a "pirate" because it was the only method of securing the practical experience necessary to pass the examination for a licence. They were a sensible lot, they came on the air after

midnight, worked among themselves and endeavoured to sit for the examination as soon as possible. The power was small and many a top Amateur today owes it all to the experience he gained as a "pirate." Today, however, the position is in reverse. The average "pirate" is an obnoxious, loud-mouthed "dimwit." He uses as much power as he can, comes on the air at the worst times from a b.c.l. point of view and makes no attempt to sit for a ticket. Driven off most hands by the concerted action of all Amateurs he is now domiciled on 166 Mc. to the general annoyance of the gang up there. Things were brought to a head however this month by the rotten trick played by one of these "clucks" upon one of the licenced Hams. Signing himself with a borrowed VK3 call sign on 166 Mc., he caused a great deal of excitement in VK5, as all who heard him thought that at last the band had opened up for interstate contacts. Whilst nobody was actually fooled, quite a few of the claps are concerned with the possibilities opened

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up by this stupid joke. It is hard enough to work pioneering these high frequencies without becoming the possible target for some moron with a warped sense of humour, not forgetting the harm it does to Amateur Radio as a whole. Look here fellows, wake up to yourselves, the W.I.A. will do all it can to help you get a ticket and will welcome you as a member, but not if you borrow other chaps' calls and try and hoax a genuine Ham, especially in the high frequencies where so much exploratory work is being done. Just in closing, don't be too sure that we don't know who the chap was.

Jack Stafford (VK5JS) passed 10,000th post-war DX contact this month. Included in this formidable list is 487 G contacts. Purely as a matter of interest, would this be an Australian record? I am asking a question, not buying a fight.

Our President (VK5AW) has not been on the air lately so I decided to pay him a visit to ascertain the reason and in true W.I.A. spirit offer my help if required (the fact that I mentioned disposal gear is purely coincidental). When I arrived Hal invited me in, threw his cigarettes on the table (just out of my reach) and asked me if I would like a drink of water. I passed a remark to the effect that I was thirsty, not dirty, and we got down to business (with me still thirsty). It appears that Ham Radio had nothing to do with him being off the air but Mrs. 5AW had issued a new regs book (which states in section 6, para 9), no clean up back yard, No Ham Radio. Well our President shifted the seven years' accumulation of "junk" as a start and immediately the back fence fell down, so for the couple of weeks the 5AW signal was missing the neighbours were receiving the QRM.

Not having a VK5 call at the present really does not entitle VK6DX to a mention in this column, but as he was once the owner of VK5AY, VK5LO, VK5WH, and VK5P1, I think a small space should be granted him for his activities whilst over in the Eastern States. If the coal position will only hold out for a few more days Bill will be able to complete arrangements for the charter of that special train to take all the disposals gear home to W.A. If he cannot manage the train then all the gear will have to be sold here, so here's hoping. (Sorry I had to mention the disposals gear again dear Editor.)

In the hands of great men the Type 3 Mark II is mightier than the 100 watts. To prove this, VK5BY grabbed himself a W.A.C. in a few hours by working FSBS, SV1RX, P8PQ, CTAT, C33CD, VS6AL, VS6WL, FA9JB, W2FKA, and VK5DG. I won't mention the amount of night oil burnt to achieve this success, but considering the way that DX has been lately, it was a swell job. Dougal, for 20 watts.

I expect to be in Melbourne myself about the first week in April and hope that there will not be too much flag-waving, band-playing, etc., to greet me. All jokes aside, I would like to meet as many VK3 boys as I can whilst there, and will try to attend the monthly meeting for that reason. If there is a raffle or two going on put me in, and I will solemnly promise to never mention the words disposal gear.

NORTHERN TERRITORY ACTIVITY

Activity has been fairly quiet during the past few months. Most of the chaps are inactive, but should be on in force again soon. 5AB, at Katherine, is getting out OK on 14 Mc. with low power although not audible here in Darwin. 5AE, apart from breaks away around the countryside, is consistent on 28 Mc. Finds results most amazing with only a half-wave dipole. The R9'er is an asset, but Dave has been having trouble with the receiving end of his equipment.

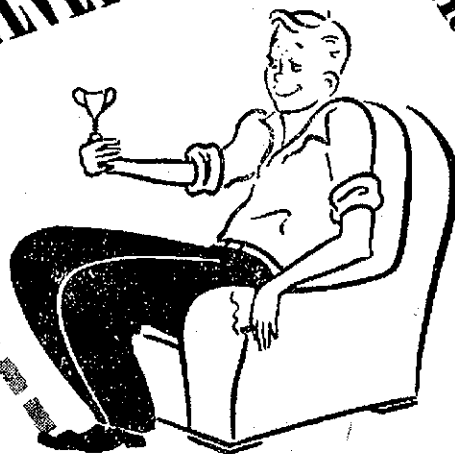
5CN has been very little heard of, but according to the cards that pass through he surely must still be active on 14 Mc. 5KL, after severe modulator trouble, has everything normal again and constantly on 28 and 50 Mc. 5NR is at present in Melbourne on leave or at least on leave from Darwin. No sign of any activity by 5AY but believe he is re-building so hope to hear from you soon Bruce. Pressure of work made it unfortunate that there was no active station from this Zone in the recent field day, but here's hoping for better luck next year chaps.

ANNOUNCEMENT

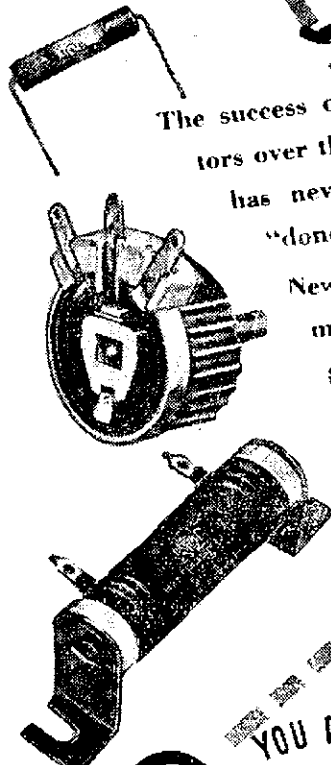
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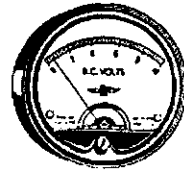
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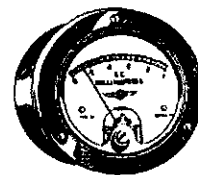
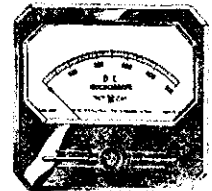
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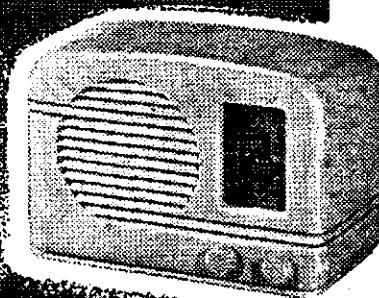
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WESTERN AUSTRALIA

As this issue went to press early, notes for March meeting were not available. The new Council has taken over and office-bearers are as follows:—President: W. H. Duddy, 6WH; Vice-President, G. Moss, 6GM; Secretary, W. E. Coxon, 6AG; Treasurer, R. W. S. Hugo, 6KW; Country Liaison: W. H. Duddy, 6WIL; Traffic Manager: S. Austin, 6SA. 6RU was again elected QSL Manager. 6GM being Federal Councillor, will represent VK6 at the Easter Convention.

PERSONALITIES

6DX now back again from his Eastern States' tour. Bill has brought back a new receiver, and a host of ideas for the rig. 6OR now has his new tower and dual 14 and 28 Mc. beam erected. A gang arrived at Jack's place a few Sunday mornings ago and with a great heave "she was up." 6DQJ has been having modulator troubles; never mind John, "all comes to those who wait" and we guess you will iron out the snag (incidentally John still works the choicest of DX). 6FL is not without his troubles either. The 28 Mc. beam has been giving Frank a bit of bother lately, but it does not stop Frank from getting on as usual. 6WIL, although this Division's new President (congrats OM), Ted still carries on the good work of broadcasting the country news on Saturday afternoon and Sunday mornings from 6WIL. 6LW still plugs away down on 50 Mc. and seems to get as much kick out of it as the DX hounds do working South America.

6JW is building a new super blooper, so has been temporarily off the air. 6WT has been working some fine DX on his low-power phone and without a beam too. 6NL still finds his two half waves 14 Mc. antenna useful when conditions are reasonable for working some good DX. 6FW, this Fremantle station, has quite a fine set-up. BC348 receiver is the latest addition, and with Ray's rotary beam some fine DX is being worked. 6CM now v.f.o.; Bill has his station up to date and compares favourably with the rest of the v.f.o. gang. 6GM still prefers the higher frequencies and sticks to 50. 6SA has made quite a fine receiver out of his disposal Beudix. It now covers the 3.5, 7 and 14 Mc. bands with good sensitivity.

DX OF THE MONTH

28 Mc. Phone.—This band has shown considerably more promise during this last month and although the number of QSOs had, have not been great, the pickings have been taken. Close skip to the north and east has also been apparent from the number of VKs and ZLs heard with terrifically strong signals.

Europe.—This theatre, which always seems to swarm with active Amateurs, has provided an interesting hunting ground, particularly towards the latter half of the month. Gs (both new and old) have been there in droves, some of them with signals like locals—66WT in particular; the number worked being too numerous to mention. GM2YA, SAT and 411, Scotland; GW4C and 3UO, Wales; F8ZR, 8JJ and 811, France; SM5LJ, 5AR and 5QH, Sweden; D4AH, 4ASU and 4AZF, Germany; OH2SE and 1QD, Finland; ZB1AC, Malta; OZ3HR, Denmark; LA4R, Norway; LX1JW, Luxembourg, were the best of the Continental QSOs which resulted.

Asia.—These contacts have been thinning out during recent months. The YEs, VEs, J2s and J9s being the regulars always heard when the band is open to any degree at all. ZC9NF, Palestine, is fairly consistent as five QSOs resulted with him during February. ARSAB, Lebanon, has also been worked a few times and seems to spend a fair amount of time on both 14 and 28 Mc. It is interesting to note that Korean stations, whose prefix was J8, have been changed to 1LL1 and quite a number may be heard each morning handling traffic with the States.

Africa.—A few chaps from this continent have put in an appearance for brief periods of an early afternoon, those worked were ZS6EB, 6NE and 6LF from the Union, and OQ5BA, Belgian Congo.

Oceania.—The New Zealanders are making their presence known particularly of an afternoon. S9 plus reports have been given both ends on many of these QSOs. KAs from the Philippines have put in excellent signals in the mornings but like the Js, they have been occupied working Ws. The only Hawaiian QSO was KH6FD, an ex-Western Australian lass, from Manjimup-Ella Christiansen.

South America.—Only news from here is that OP5EA, Bolivia, was heard and chased by many VKs the other Sunday from mid-day until 3 p.m.

North America.—Ws have been most consistent from 0800-1200 almost daily and some really fine QSOs have resulted; most districts being well represented although W6 and W8 being the most predominant. VE5FA and 7ZM were the only Canadians contacted.

14 Mc. Phone.—This lower frequency band has not provided the DX it did last summer by any means, but some very interesting rarities have come to light from some of the close-skip areas to the Australian shores.

Europe.—Conditions have been very poor from the continent but the few QSOs resulting have been on the whole, quite good. F8MY in Toulon, France, was busy one night recording transmissions and playing them back, and this contact turned out to be the most interesting of the month. F9EII and 9DO were the only others worked from France. MB9AA is getting pretty consistent now from Southern Austria. SVOAD, Greece, was the only other European.

Asia.—Quite a few rare ones were worked and also provided new countries in some cases. W2WV/C9 in Manchuria is very active nightly. ZC1AL, Transjordan, was a nice catch. AC4YN, Tibet, was QSOed after just two years looking for him. VU2SJ, Pakistan, together with a few Cs and Js complete the contact with Asia.

Africa.—The Union boys are still quite consistent in the late evenings, quite a few ZS QSOs resulting. MD2C, Tripolitania, has only been on phone a short time, and provided an interesting contact. CN8BB, French Morocco, and VQ3ALT, Tanganyika, were the remainder.

Oceania.—KG6AW/VK9 Los Negros, Admiralty Islands, has a VK3 doing a lot of operating lately and Frank is a very interesting QSO. KH6KH/KB6 in Canton Island had a fine signal when worked. VR5PL, Tonga Island, was the only other Pacific contact.

South America.—As usual HE1FQ, Colombia, was worked. Very seldom go long before saying hello to old Victor.

Central America.—A few QSOs in XE1BA and 1AC Mexico; YS1GZ San Salvador, CO7CK Cuba, and VP9P Bermuda.

North America.—Ws very spasmodic during the evenings but one morning toward the end of the month a string of WGs were worked the long way around via South Africa. The only Canadian was VE2PI late one evening.

TASMANIA

ANNUAL GENERAL MEETING AND DINNER

On 28th February the clan gathered from far and near. The meeting opened at 5.30 p.m. with forty-two present, including as visitors Dr. Pearson (VK7KB), who brought the Burnie gang; Fred Beech (VK4FB), and Mr. Kirby (VK3KK).

Following the reading and adoption of the annual report and balance sheet, Mr. Carter (7AK) spoke in reference to the death by accident last year of Longford member Jack Wallace (7JW), in whose memory all present stood and observed a minute's silence.

Election of officers proceeded, the results being as follows:—Patron, Mr. Medhurst (7AH), re-elected; President, L. Jensen (7LJ), re-elected; Vice-Presidents, Messrs. Crooks (7BQ) A. E. Allen, Gee (7RF) and Walsh (7OW); Secretary, J. Brown (7BI), re-elected; Treasurer, A. Finch (7CJ), re-elected; QSL Manager, T. Allen (7AL), re-elected; Publicity Manager, T. Connor (7CT); Northern Publicity Manager, C. Wright (7LZ); Traffic Manager, R. O'May (7OM); V.H.F. Manager, N. Campbell (7NO); Council, Messrs. Brown, Jensen, Connor, Gee, Walsh, Finch and Conrad (7TR); Northwest Coast Councillor, D. Fisher (7AB); Auditors, Messrs. O'May and Richardson (7GR).

So there they are, some well-tried office holders and some new ones who, as a team, should have no difficulty in keeping VK7 up to its almost hundred per cent. Institute membership.

This auto-backslapping may be bad for the shoulder joints, but Food-for-Britain donations have almost reached the £100 mark, which is not bad going for an average meeting attendance of about thirty.

General discussion of the year's doings continued until shortly before 7 p.m., when the meeting adjourned.

One thing, by the way, which has some of the boys exercised, is a feeling that "Gremlin" should cast off the motley and appear to the multitude in his true guise. Since I, the Sub-Editor, should be some 3,000 miles away by the time this gets into print, methinks I'll buy into this.

"Gremlin," after all, seems to represent that part of every good Amateur—his thyroid gland or something—which makes his very innards revolt against rotten radio. It would be quite in order, therefore, to make a list of all those who have the interests of the game at heart, including one or two who inadvertently get into his column, and say, "This is Gremlin." The fact that one man undertakes to give this spirit a voice is no reason why a horde of lawbreakers should be given the opportunity of descending upon VK3?? and dumping him into the Yarra with a dozen modulation transformers around his neck. May he never pull his punches, and that's no soft soap either, Mister.

Anyway, on to the festivities. At Hanton's Cafe, the gathering was brought up around the fifty mark by the addition of some guests, among whom were Warrant Officers H. Boxall and F. C. Tregurtha (VK2FT) from the visiting R.A.N. Squadron; two other Navy chaps whose names we seem to have

misaid; Mr. M. L. Weeks, of the Overseas Telecommunications Commission; Mr. C. Carroll, Radio Inspector; Mr. G. Hughson, 7TR's partner in a radio manufacturing business; and a lonely "miner," which gallantly saw the toasts out.

Following the Loyal Toast, Mr. Weeks, well up to his usual form, almost got around to convincing us that Amateurs were the only true professionals by the time he proposed the health of the Institute. Among other things, he mentioned that even he cannot avoid entanglement in the Institute's activities when a certain coast-station operator says, "How about exchanging Sunday, the boys are having a field day?" Response was made with proper diffidence and commendable brevity by the President, who knew there was only one barrel.

Next came "The P.M.G.'s Department," a timely toast to those who keep a tolerant, but sometimes worried, eye upon the inhabitants of the Ham bands. Charlie Carroll responded to this with an outline of the Department's activities and some fatherly advice about wasting watts on drain pipes, and volca on members of the family.

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Terry Connor (7CT) then proposed "The Professionals," which left some of us on the horns of a dilemma, not knowing whether to stand up or sit down. The point was enlarged upon in his response by Gordon Hughson, who thought that, if a professional could be defined as one who makes money out of radio, we all may just as well call ourselves Amateurs.

"Country Members and Visitors" followed, proposed by Peter Allen, the response being made by Doug. Fisher (7AB).

As guest speaker, VE2FT, who is also President of the Hurstville Radio Club, gave us another bouquet by congratulating the Division on its healthy habit of giving every member some weight in the control of its affairs.

A pleasant little ceremony was the making of a presentation to 7BJ in recognition of his hard work in the past as Secretary.

The function in town broke up at a fairly respectable hour, but thirteen of the hardier souls rolled in on 7YY at Battery Point, where maximum output was obtained on coffee until after 1 a.m.

Next morning, a rather heavy 7CT went off to a pleasant spot on the south coast with a transmitter and the call sign disc, and at ten o'clock fourteen cars, visitors and all, set out armed with loops, hopes and sandwiches to find him. 7OW made it in 55 minutes (it's a 45 minute drive without taking bearings), followed shortly afterwards by 7LJ and 7AB, and then the rest at intervals until 1 p.m. And a fine show it was, with bright sunshine, green grass—none of your paper-littered mainland resorts!—billy tea, peaches edible and otherwise, swimming and a dreadful lot of ear-bashing.

And now, as we may have mentioned somewhere else, 7CT takes over as columnist—sorry, columnist—and 7YY heads for VK9. But who'd have thought it was me!

NORTHERN ZONE

Amateur Radio is becoming more and more popular in this zone. In the Launceston area we now have twelve active or near active stations in an area of two square miles. Perhaps one is putting friendship too much to the test when it is said that this month we welcome still another member to this zone as a VK7. He is ex-VK3ANL. With this increase in numbers it is becoming increasingly apparent that we will have to pay particular attention to our transmissions in an endeavour to keep the bands as clean as possible.

Conditions on 7 and 14 Mc. have been rather sporadic over the past month, however there has been some good DX breaking through at odd times. During the first half of March practically every European country was heard between 1700 and 2000 hours. The best of these being EA7AY, OT1JS, YU7KS, N1B9BA, D2IU, D6AD, SM7YE, EI9N, and F8 and G8 too numerous to mention. Incidentally MB9 is Austria and D5 the French Zone of Germany. The Europeans advise that the VK7s do not break through over there at any strength until the other VK States are fading out.

We now have two stations TTE and 7DB operating on 166 Mc. 7BQ also hopes to be on this band soon. 7DS, 7RK and 7LZ are all still operating 7 and 14 Mc. at present. 7LZ and 7JH were QSOed on 14 Mc. during short-skip conditions. This was Jack's first VK7 QSO on this band from Waddamanna. 7NL has now got his rig up this end of the island and hopes to be on the air again shortly.

Since last month's notes were written Mr. Rex McLean has received the call VE7EB and is putting out a very nice signal on 7 Mc. As soon as all these new members settle down we hope to call a general meeting in the zone and so give everyone a chance to get together for the mutual benefit of all members.

CORRESPONDENCE

USE OF CALL SIGNS IN ADVERTISEMENTS

Wireless Branch, Treasury Gardens, Melbourne, C.2.

The Federal Secretary, W.I.A.

Dear Sir,

The December issue of "Amateur Radio" contains several advertisements in which appear Call Signs which have been allotted for use of Amateur Stations.

Since Paragraph 124 of the "Handbook for Operators of Amateur Wireless Stations" stipulates that such Call Signs are issued to licensees for station identification for communication purposes only, and forbids their use in connection with business activities or interests, the licensees concerned have been requested to refrain from permitting use of Call Signs in future advertising.

In order to guard against repetitions of such infractions it would be appreciated if the Institute

would be good enough to co-operate with the Department by arranging for deletion of Call Signs from all advertisements before publication.

Appropriate steps have been taken to inform publishers of similar journals concerning the Departmental attitude in this matter.

Yours faithfully,
The Chief Inspector (Wireless).

THOSE ARTICLES AGAIN

1 Byron St., Box Hill, E.11.

Editor, "A.R."

May I have a little more space in which to air my views on those articles? My first letter was, I must confess, written in a hurry and I don't think I made things very clear. I did not want to suggest that "A.B." should be filled from cover to cover with matrix algebra and calculus, but I'd hate to think that it was to be filled with articles, along the lines of "101 Things a Boy Can Make." No sir. The general tone of those advocating simpler articles has been that nothing on a higher level suits the "average ham." I venture to state that the "average ham" does not read the articles at all, nor does he read the ads or even "Gremlin's musings." Why? Because, sir, the "average ham" doesn't exist.

There are all kinds of Hams, as any schoolboy knows, and to strike an average of them is alright for statistical purposes, but to talk of catering for the average Ham on the principle that what suits him, suits all is nonsense. The statistical "average ham" is the man in the middle—there are as many above him as there are below. So if you cater for him you are catering for a minority. What I want to suggest is that the articles in "A.R." should cover a wide scope—elementary type for those that want it through to theoretical discussions on advanced subjects—and that the advanced boys should not cavill at the space given to the elementary boys any more than vice-versa.

To conclude, I would like to point out that there are a lot of rotter signals about and the only way to clean them up is for everyone on the air to know what he's doing and why. In short, improving everyone's knowledge will improve their signals, and you can't improve knowledge by going over old stuff in words of one syllable.

—F. L. JOHNSTON, VK3EL.

DISPOSALS GEAR

27 Scarborough St., Somerton, S.A.

Editor, "A.R."

Your Editorial, and the article by SLG on safety measures in regard to the average Ham rig were indeed timely and I hope a few of my mates will take heed before it is too late, and another name is added to Silent Keys.

I get cold shivers and a contraction in my inwards whenever I see one Ham of my acquaintance changing bands or tuning up.

So much for that, and now a word or two on this disposals business. It seems there are hard feelings and harsh words, the Ham fraternity is being divided into two camps, the "disposables" and the "have-notes" and all because of hoves. Why all this fuss anyway? There is no need to be loaded with ex-Service gear before a rig can be built, and I have yet to see a real bargain that has come from any disposals source.

Most of the stuff around VK5 is nothing but junk, and I fail to see the sense in paying pounds for a piece of apparatus just for the sake of a few useful items, worth only a few shillings, that it may contain. As for these complete transmitters that are being pushed off onto the gang, words fail me. Some of the noises that I thought were power leaks on 7 Mc. I have since found originate in these horror boxes with numbers instead of names.

About here someone will rise and say "Ah yes! but they can be altered and made into quite good little rigs." OK well for Pete's sake alter the dashed things, and get a monitor or a honest friend to listen and advise.

From what I can see of it, there is more work both mental and physical, in re-building one of these things than in building a new rig, and anyone with half a brain can reason which would be most efficient and so I suggest that some of you chaps who are squealing like children deprived of their toffee, over the distribution of disposals, give the subject a little thought, then go through your junk box, and I bet you can find more useful gear lying idle than you will get in most of this ex-Service stuff.

Antennae can be constructed of materials other than dural tube and fed by means other than co-ax cable. Tubes and components are readily available at most radio dealers, and should enable the most inexperienced Ham to get a rig working on any of the frequencies below 50 Mc. and I for one think it is about time there was more brain supplied to the working of the gear we now possess and less childish screaming about disposals.

CHARLES BRIMBLE, VK5OB.

A GENTLEMAN'S AGREEMENT?

48 Yanko Ave., Waverley.

Editor "A.R."

The following suggestion will no doubt bring screams of rage from the younger members of our amateur community, but it is made nevertheless with a view to rationalising our mode of band occupancy for our own good.

The band upon which most newly licensed Amateurs concentrate is undoubtedly the 14 Mc. region, lured there by the attraction of world DX. Very few of the newer bands are attracted to such DX questing from the viewpoint of telegraphic operation, but they burst forth in pristine glory with telephony. That is natural in this electronic and atomic age for there is much more to the building and correct functioning of a R/T outfit than the strictly c.w. counterpart. Apart from the fact that so many strike the usual teething troubles of parasitic and spurious radiations of all kinds, it is the mode of operation relative to band occupancy with which this suggestion deals.

Sooner or later the DX urge passes somewhat, and Mr. Newphone, who has heard one or two of his 200 mile distant colleagues only under short skip conditions, turns to the 7 Mc. band for nightly "rag-chews" with suburban, country and interstate stations. He finds that it is a different picture altogether; that DX phone is absent on "forty," but that he can yarn to others for hours within the confines of his own country—that is—during the relatively scarce interference-free periods on the band.

He finds that the band is quiet only on rare occasions, that most times it is a whirl of activity. He gets lots of QRM from both c.w. and phone, but battles doggedly on; always on phone. In the brief gaps in the curtain of stations, he notices (if he can read c.w.) that there ARE DX stations about, and that they don't all sign with a W prefix; they may possess intriguing call signs such as G5LJ, UA0FK, or ZD6TD. In other words, there IS DX around on "forty," but it is nearly 100 per cent. c.w., not phone. The c.w. men would like a chance to have a chat with some of this rare DX without having to wait until past midnight or 0800 hours.

Before the late, but unlamented, war it will be recalled that VKs had a few years of operation on "forty" during which there was a rarely broken "Gentleman's agreement" (not any P.M.G. Regulation) that established a state of affairs where phone activity ceased at 1900 hours E.S.T., and from then on it was c.w. Remember? Is it asking too much that in these times of modernity we resuscitate that idea? For the 7 Mc. band only. At least it bears thinking about.

—D. B. KNOCK, VK2NO.

"GREMLIN"

Letters have been received from H. Kingsley Love (3KU), Ray W. Cranch (3LW), Ivor Morgan (SDH), F. J. Hinc (2QL), H. G. Williamson (3GW) and Alan W. White (2AWW), all of whom were full of praise of "Gremlin's" efforts to clean up signals on the Amateur bands, and expressing a wish for the early return of "Gremlin's" notes.

Elsewhere in this issue readers will note that "Gremlin" is back. And while it is desirable to publish letters in the Magazine, I feel that as the Victorian Council has permitted "Gremlin" to carry on under a "nom-de-plume," no good purpose will be served by publishing letters which contain only praise for "Gremlin" and a request for his return. It is impossible to publish every letter received, so if your letter does not appear, please do not take offence.—Editor.

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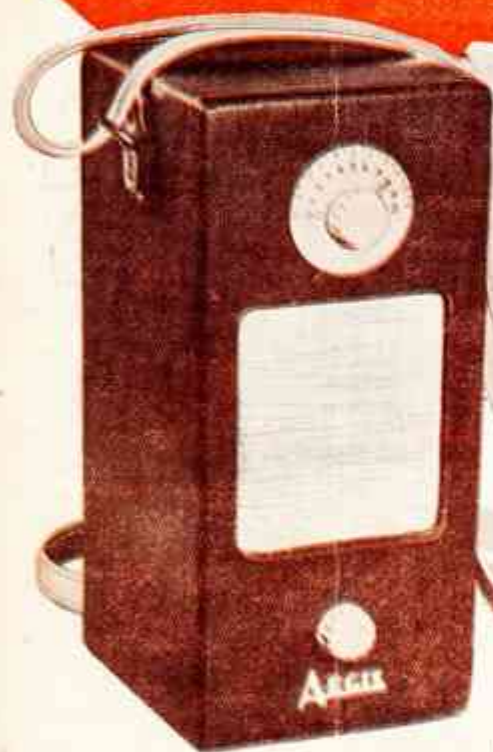
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EDITORIAL



In this month's Federal Notes you will find a brief resume of the activities at the Federal Convention where the few did so much for so many. Whether the many will approve of the work performed by the few remains to be seen.

One of the major tasks allotted to Federal Executive for the forthcoming year is that of preparing a "Uniform Divisional Constitution." This is going to be a gigantic task as it is necessary to take into consideration both the wide variations in Companies Act in each State, and the diversity of existing Divisional Constitutions. One thing stands out very clearly, before a uniform divisional constitution can be agreed upon each and every division will have to make generous concessions.

Unfortunately we are living in a world filled with suspicion and motivated by selfishness; hence we are all biased by our environment and find it difficult to believe that the other fellow is actuated by honest motives.

It is obvious that before true Federation can exist members will have to delegate sufficient discretionary powers to Divisional Councillors, Federal Councillors and Federal Executive to make any scheme workable.

The present basis under which executives of the Institute are fettered and hampered by the cumbersome process of securing

approval step by step from members generally is both unsound and unworkable. It is not suggested for one moment that you as a member give anyone a blank cheque; but rather that everything be viewed in its correct perspective. If you have sufficient faith in your own judgement in electing the right men, then surely you can trust those men to perform the task faithfully during their term of office.

The other stumbling block which must be removed to make way for Federation is "Interstate Jealousy." The continual fear by one State that another will encroach upon its precious preserves. This outlook reeks of medieval times when Barons were wicked old gentlemen who lived in castles surrounded by watery moats, and does not in any way fit in with the radio picture wherein is envisaged, upon a broad canvas, the complete elimination of boundaries, prejudices and racial differences, based upon the better understanding promoted by the penetration of the common interests of Hamdom into the far corners of the earth.

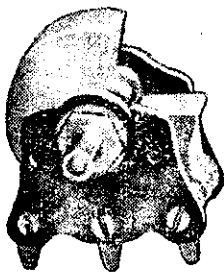
The moral of this story is — can we rise far enough above our present environment and past prejudices to make FEDERATION a concrete fact instead of an idealistic dream. The ball is in your corner!

G.G.

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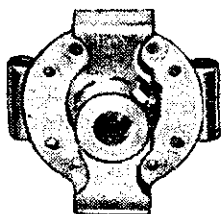
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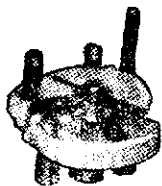
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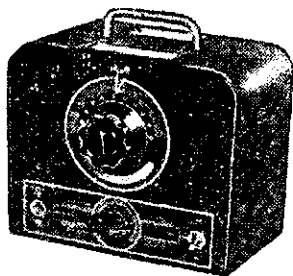


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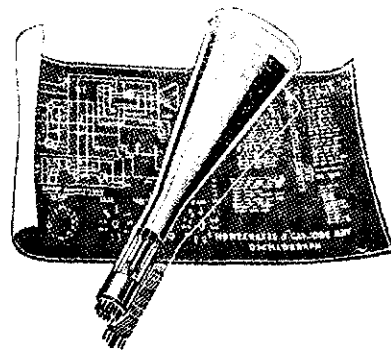
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SERIES PHASED AERIAL ARRAYS

By H. K. LOVE*, VK3KU

So much has been written on the subject of Directive Arrays, that one hesitates to step into this field unless it is to offer a summary of experience which may clear up some of the confusion which exists. An examination of the published data on Parasitic Arrays, for example, shows a great variety of claims for gain above a dipole. Some of these claims are fantastic, and some conservative.

The important feature from the Amateur's point of view is that all types of Parasitic Beams work in some fashion. It is feared that some of the information on this type of beam has its genesis in unbounded enthusiasm, brought about by the fact that the author has been fortunate; his location and all the other factors have been favourable, and his results excellent. We all fall into this trap at some time or another—it is the "Ham" in us!

It is no wonder, then, that when results are not as good as we expect, some of us are disappointed. The reason can, as a rule, be traced down to some unfavourable factors which were not present in the enthusiastic author's case.

There are a number of factors which govern the operation of Parasitic Arrays—some of them are as follows:—

- (a) Location.
- (b) Height above ground.
- (c) Nature and proximity of surrounding objects.
- (d) The ability to accurately tune the array.
- (e) The method of feeding.

Some very interesting and accurate engineering data on the subject of Parasitic Arrays is found in the Radio Engineer's Handbook (Terman) beginning on page 809, para. 17.

In the main, this paragraph deals with a simple driven element, and a Director or Reflector. Examination of the figures on page 810 will reveal just how slight changes in tuning or spacing will affect the pattern.

After reading this data the Amateur will begin to look around his location and count the tin roofs and other obstructions in an endeavour to learn what chance he has of getting out in the right direction, if the antenna is pointing in that direction.

All this wordy preamble is to indicate that what the other fellow has done with a 2, 3 or 4 element beam of the parasitic variety, cannot always be repeated in another location. One may still persist and do a very nice job on such an array, but there is always the feeling that with a little more tuning and adjustment, better results might be obtained. One cannot help wondering if those non-driven elements are doing their stuff!

It is for the above reasons that the writer suggests an all-driven array for Amateur work—it cuts out a good part of the big doubt.

In the case of a long wire of several wave lengths, there is little concern by most users that the power may not be traversing all the half wave lengths included in its length—this is not one of the worries, as it well may be in the case of a multi-parasitic array.

THE MARCONI FRANKLIN SERIES PHASED ARRAY†

Such is the full name of the beam about to be described. If one took a huge loop of wire, say a wave length or so long, set it out in a circle and fed both ends from the transmitter tank, provided it was resonant and drew current, there would be little fear in the mind of the operator that the r.f. was not in all parts of the wire, because the whole loop is in series.

It is not, however, convenient to mount and erect such a contraption, but the series characteristic can be retained by another method.

†"Short Wave Wireless Communication" by Ladner & Stoner.

Keeping the series idea in mind as the first fundamental, let us add some other desirable features as under:—

- (a) Compactness.
- (b) Flatness of tuning on the Ham bands.
- (c) No critical tuning.
- (d) Substantial gain.
- (e) No adjustment, and easy to feed.
- (f) Correct phasing to achieve directivity.
- (g) All elements in series, and therefore all excited.

These features—(a) to (g)—are the story of the Series Phased Beam as applied to Amateur practice.

The following quotation, extracted from Messrs. Ladner & Stoner's "Short Wave Wireless Communication" will start one thinking on this type of array:

"In its simplest form the series-phase consists of a wire folded into a number of loops connected by horizontal wire lengths as shown in Fig. 132, suspended either vertically or horizontally, the

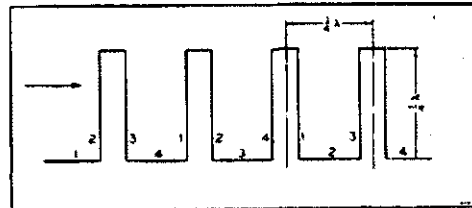
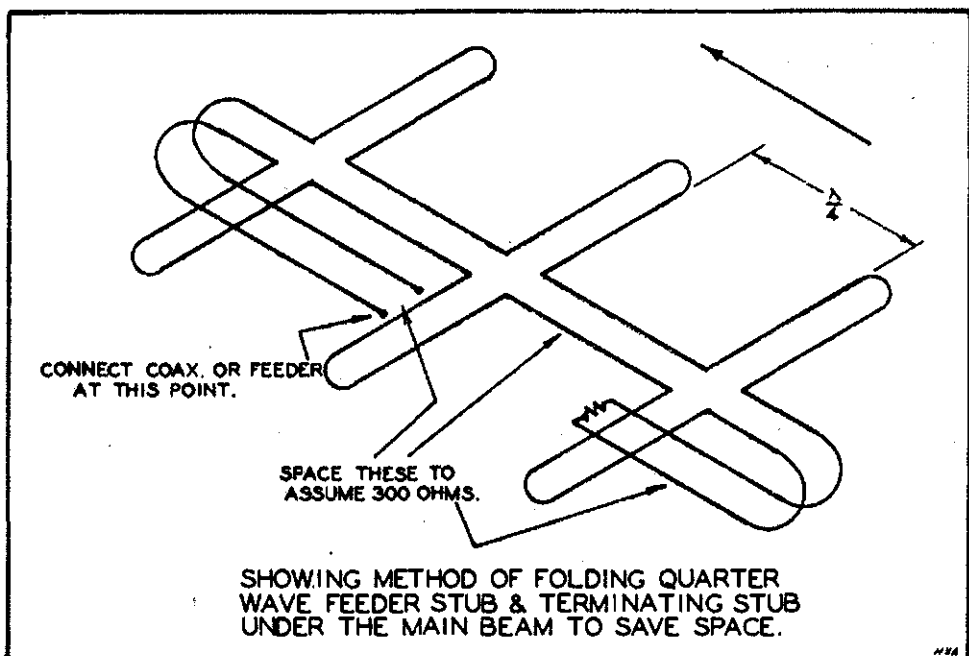


Figure 132

dimensions of the loops and the spacing being dependent upon the type of diagram required. In general, the most commonly adopted arrays are made with loops approximately one-quarter wave-



*Virginia Street, Mt. Waverley, Victoria.

length long spaced a similar amount, the length of the array line being dependent upon the directivity desired. An array line will be fed from one end, usually through a short length of non-radiating feeder coupled to a normal concentric tube main feeder, the remote end of the array generally being terminated by a resistance equal to the characteristic resistance of the system, which approximates to 300 ohms.

"As will be seen later, the loops perform two separate functions; to act as radiators, and what is as important, to determine the time phase of current between loops.

"Consider an earthed vertical single wire aerial. When excited from the base, a stationary wave is formed, by a wave W_1 travelling up the wire, and a similar reflected wave W_2 travelling back. We could imagine wave W_1 travelling up the left hand edge of the wire, and the same travelling wave returning down the right hand edge of the wire, and because at all intervals of time the instantaneous values of the current waves I_1 and I_2 at the top are equal but opposite in direction, they form a node of current here.

"At other points down the wire the instantaneous amplitude of I_1 and I_2 are not always equal, and if their values are traced out in time they will be found to form a stationary wave with current antinode at the base when the wire is one-quarter wave length long. However short or long this wire may be, a stationary wave will be formed by these two travelling waves with a node of current at the top end and current value at the bottom appropriate to the length of wire. Accompanying the current stationary wave is a voltage wave in quadrature time phase with it and with an antinode at the top end.

"If instead of providing a single wire we provide a loop of wire, Fig. 133, fed at the lower end, 'A' say, this loop being part of a circuit in which a travelling wave is flowing, the wave will now travel up one wire 'AB' and return by the second 'BC' from which it continues on in the circuit, but provided these wires are sufficiently close together to be regarded as coincident in space from a radiation point of view, the loop may

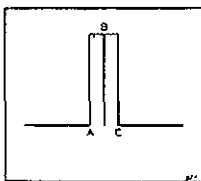


Figure 133

be regarded exactly as a single wire carrying a stationary wave with current node at 'B.' These two travelling waves not only form a stationary wave of current with node at top end and (if the loop is $\frac{1}{4}\lambda$ or less) an antinode at the bottom end, but in quadrature time-phase with the effective current stationary wave there will be a voltage stationary wave, having an antinode at the top end and a node at the bottom end. The voltage does not reverse in sense at the top, and in consequence, no node is produced, whilst at the bottom of the loop the voltages are always equal but opposite in phase.

"The radiation resistance of the loop will be four times the radiation resistance of a single wire for the same base current measurement in each case. This is so because a meter placed at the base of one limb of the loop is measuring current in one limb only, and this is half the effective stationary wave current at the base, as the currents add to this point. This means virtually that the effective height, and in consequence the radiation efficiency of this portion of such a system is high. For this reason, an array built with loop radiators is equally suitable both for transmission and for reception purposes."

Messrs. Ladner & Stoner deal, in the main, with the "Series Phase" as a commercial curtain, and cover the maths. and theory considerations fully. It is the purpose of this article to summarize the application of this system to Amateur use. At VK3KU the beams for 28, 50 and 144 Mc. are all series phase, and on 28 and 50 Mc. have done a wonderful job. It should be remembered that no tuning or adjustment has been done on these beams—they simply work!

It will be seen that Fig. 132, ex Ladner & Stoner, forms the basis of construction of Fig. 1—the Amateur application for 28 Mc.

The beam construction for Amateur use is two beams mounted horizontally—see Fig. 1.

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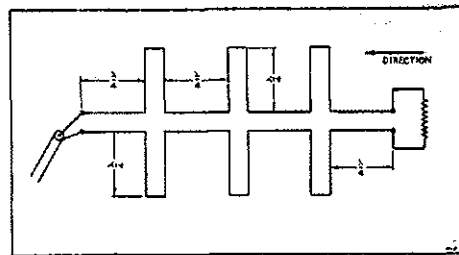


Figure 1

As the loops on each side of the beam represent a $\frac{1}{4}$ wave out and $\frac{1}{4}$ wave back, each loop is $\frac{1}{2}$ wave length, and this, added to the corresponding loop on the opposite side, makes each element a folded full wave. Since all loops are in series, each is excited.

The loops, therefore, perform two separate functions; to act as radiators, and what is quite as important, to determine the time phase of current between loops.

A further extract from Ladner & Stoner will make this clear:—

"Consider Fig. 134 (a), which shows two radiators 1 and 2 spaced one quarter wave length apart and connected by a feeder line. If this system is fed from a point 'A,' half-way between the aeri-als, zero time phase is supplied to both aeri-als, but if we move the feed point to 'B,' this automatically creates a time phase difference between 1 and

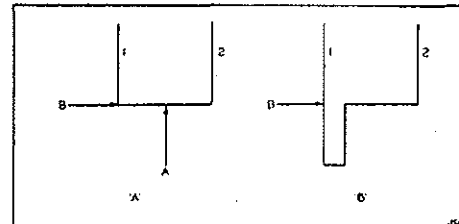
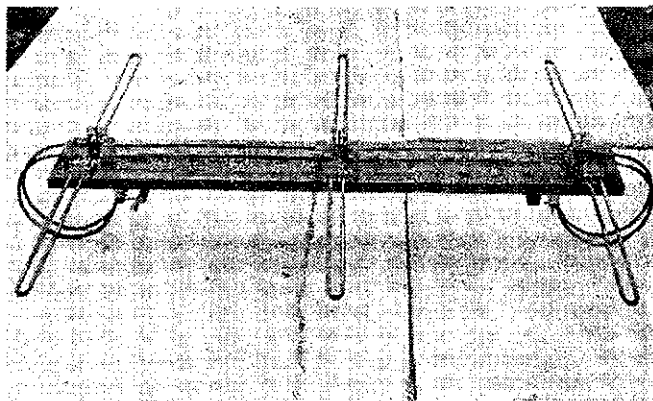
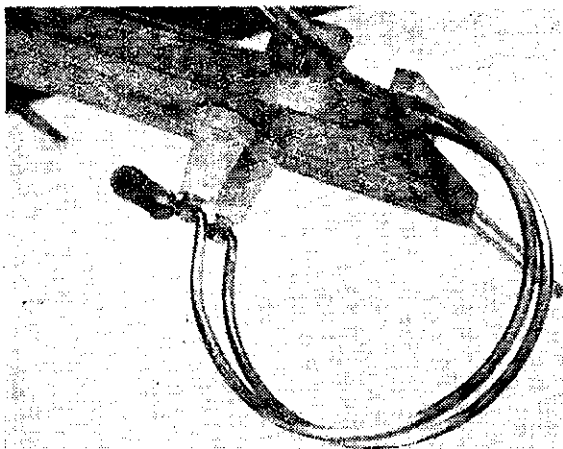


Figure 134

2, equal to the space phase between them, assuming the radiated wave travels to the right at the same velocity as the wave along the feeder. In this case maximum directivity is away from the feed point 'B.'

"Still keeping the feed input at 'B,' we can reverse the diagram by looping the feeder to give aerial 2 a lagging



Above: Complete Series Phased Three Element Beam for 144 Mc. showing Stubs turned under.

At left: Terminating Stub on 144 Mc. Series Phased Beam.

current of 90°. To do this the feeder length can be increased as shown in Fig. 134 (b), such that it equals $(360^\circ - 90^\circ)$ or $\frac{3}{4}\lambda$. If we design the loop to have $\frac{1}{4}\lambda$ sides as shown, this loop, together with the straight portion of $\frac{1}{4}\lambda$, makes up the $\frac{3}{4}\lambda$, and as we have seen, if the sides of the loop are coincident in space, the loop itself will act as a radiator; in consequence, we can use it not only as a phasing feeder to aerial No. 2, but to replace aerial 1. In a similar way the whole line of radiators can be replaced by loops, whose lengths are made correct to produce the required phasing between the radiating elements. This is the usual series-phase array design which therefore has maximum directivity from its feed end, and it is clear that with this particular spacing we could not reduce the dimensions of the loops sufficiently to reverse the diagram, i.e., by producing a time phase equal to the space phase as the loops would then have zero dimensions.

"But we can obtain this reversal by increasing the loop still more, namely to $\frac{1}{2}\lambda$, as in this case the total feed length is then $1\frac{1}{4}\lambda$, and this gives the required time phase."

It is not intended, here, to go further into the theory of this type of array, as Messrs. Ladner & Stoner have treated this at great length. It is therefore intended to give some pointers on the construction of a Series Phased Array for the practical Amateur bands.

The beam is practicable on the 14, 21, 28, 50 and 144 Mc. bands. The dimensions are easy to compute by any formula for $\frac{1}{4}$ wavelength. It has been found that the beam is very suitable to work over quite wide areas of the bands, with little loss of efficiency, and on this account the intending user is advised to cut the $\frac{1}{4}$ wave sections for a frequency at the centre of his operating frequencies. The $\frac{1}{4}$ wave stubs for feeding and termination can be folded back under the framework of the beam, and accordingly do not add to the length of the structure. The $\frac{1}{4}$ wave feeder is made up of open line, with spacing and conductor diameter to make a 300 ohm line. This can be done with tubing or with wire, provided the spacing is suitably adjusted to 300 ohms.

The loops or elements are best made of $\frac{3}{8}$ " tubing, or can be wires folded back round insulators if desired.

It will be seen that for 14 Mc. a two element beam is not by any means too big. Such a two element affair will have

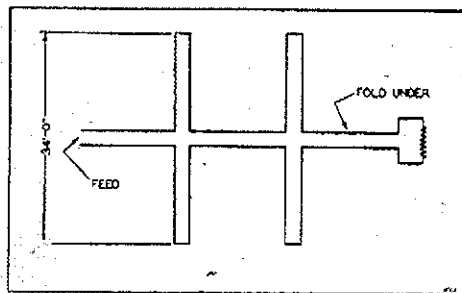


Figure 2

four driven $\frac{1}{2}$ waves and will occupy approx. 34' x 17' 6" (Fig. 2). A three element for 28 Mc. (6 half waves) will take a space of about 17' x 16'.

The method of mounting the elements on a wooden frame, whether it be a tubing structure or wire, is left to the intending user.

The spacing between centres of the folded back tubes or wire should be quite close; in the case of tube, a space not in excess of $\frac{1}{2}$ " between the adjacent walls will be about right. If wire is used, a space of approx. $\frac{1}{2}$ " between centres of the wire will do well—but care should be exercised when the construction is designed that the wires are held apart and do not touch in a high wind. Liberal use of insulators or small spreaders should serve well to achieve this.

The Termination.—The beam may be left bi-directional if desired, or made uni-directional by a terminating resistor of 300 ohms of a non-inductive type.

The Beam In Use.—The feeder can be almost any type of line—open or co-ax.—and the feeder stub, which is 300 ohms $\frac{1}{4}$ wave, will take care of the matching to the array in much the same manner as Q bars. Should 300 ohm line or cable be available, this may be used right down to the transmitter tank.

Results obtained with this beam indicate that it does a first-class job. There are numbers of beams—the description of which, together with the theory and data, would tempt some of us to endeavour to use them, but unless one has the facilities to ensure perfection of the theory, it may be better to leave them alone.

When all is said and done, most of us are after R5 reports, and we also like something round the S9. With the limited power the Australians use, the S section of our reports must come from getting as much of the r.f. from the tank into the flat top as possible.

The improvement of our signal strength from, say, S6 by power increase

can be expressed in the following terms: To raise an S6 signal to S6.5 requires that we multiply the power by two. To increase our signal by one S unit, i.e., 6 db. to S7, the power would need to be multiplied by four. One can go on doing sums like this to see how many times the power must be increased to gain the additional signal points, but it is the power that reaches the flat top which does the job.

If equipment is arranged with 100 watts input to give 60 watts output in the tank, all well and good, but if only 15 of the watts reach the radiator, we are not getting very far. What we all desire is the use of as much of that 60 watts as possible in the radiator—pushed in the desired direction—that of the receiving station.

TIPS FOR PRACTICAL CONSTRUCTION

It is strongly recommended that the beam be fabricated of $\frac{3}{8}$ " copper tubing in the case of 28 Mc. beam, or $\frac{1}{2}$ " copper tubing in the case of 50 Mc. beam.

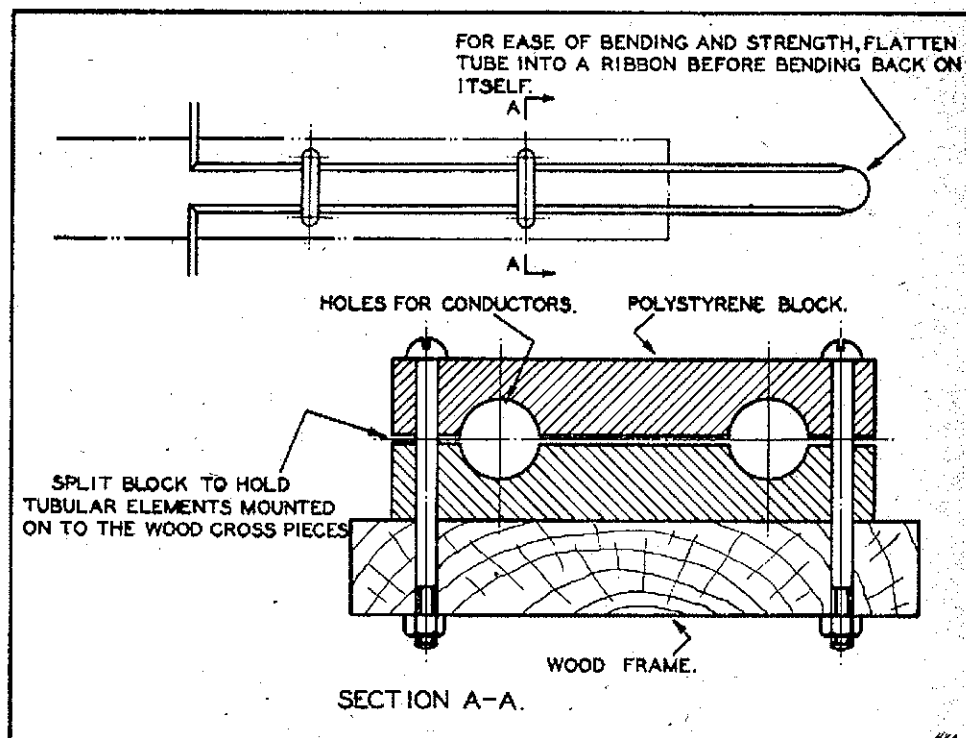
Reference should be made to "Amateur Radio," July, 1947, page 5, for the impedance versus spacing diameter curve for conductors to ensure that the quarter waves between the elements are arranged to assume an impedance of 300 ohms.

The folding back of each element which is a half wave folded back on itself, should be accomplished by hammering it flat at the centre point which makes an easy method of bending and strengthens the whole job, as instead of being a bent tube it is a ribbon of flat metal.

The builder is advised to braze the tubing into one solid grid to ensure that the beam is in complete electrical contact throughout its length.

The method of mounting is to make a

(Continued on page 8)



SECTION A-A.

The BC696 and BC457 Transmitters

By F. M. NOLAN*, VK4FN

The BC696 and BC457 Transmitters can be very simply converted to make excellent v.f.o.'s. for the Amateur bands. Before commencing the description of the alterations necessary to convert for Ham use by VK4FN, the following description of the units is reprinted from "CQ," May 1946, to acquaint the reader with their operation.

An increasing amount of surplus Army equipment is appearing on the civilian market. Among various items of interest to the Radio Amateur is the SCR274N, an aircraft unit that is very easily adapted to Amateur use as a stable, variable-frequency oscillator (v.f.o.), either for a.m. or i.m. operation. The SCR274N is the overall designation given the principal components of a multi-channel aircraft radio receiving and transmitting set-up used on thousands of planes and now "declassified." So that the reader may know what to look for, the army numbers of the equipment are as follows:—

The receiving end consists of three separate units—the BC453 (190-550 Kc.), the BC454 (3 to 6 Mc.) and the BC455 (6 to 9.1 Mc.). These receivers operate from the aeroplane 24-28 volt storage battery and each contains a separate dynamotor for plate power. It is an easy matter to substitute 6 volt tubes for the 12 volt series type originally in the receiver, and re-wire the filament string for parallel 6.3 volt operation from a standard filament transformer. (Alternatively, a 24 volt transformer may be used to energise the heater circuits with the receiver left as is.) Any light 250 volt receiver power supply will provide plate power for the sets, or a vibrator pack may be used if mobile operation is contemplated. These receivers are very sensitive, incorporating an r.f. stage, b.f.o. for c.w. reception, and, all in all, make excellent receivers up to approximately 10 Mc.

Four separate transmitters are included in the sending unit. The BC696 covers 3 to 4 Mc., the BC457 from 4 to 5.3 Mc., the BC458 5.3 to 7 Mc., while the BC459 tunes from 7 to 9.1 Mc. Each transmitter consists of a master oscillator tube (1626 or 12J5) exciting a pair of beam tetrodes in the power amplifier stage (1625s or twelve volt 807s). The tubes in the amplifier are connected in parallel. The master oscillator and r.f. power amplifier tuning capacitors are ganged, and an excellent worm drive, with plenty of reduction, is incorporated in the dial system. Included in each transmitter is a piezo-electric crystal and an electronic resonance indicator for calibration.

The power output may be varied from a few watts to approximately 55 watts according to the power supply on hand. Thus, one of these little jobs may be used as a fixed variable-frequency

transmitter or as a driver for a higher power amplifier.

The components are of exceptionally high quality and the assembly rigidly constructed. With a stabilised 200 volt supply to power the master oscillator, the drift is very small. This equipment was designed to hold the frequency quite constant in aircraft under vibration and extreme temperature changes; so it can be understood that the frequency variation will be practically nil with the set mounted on the operating table, subject to little vibration and relatively constant temperature.

A power supply, preferably a regulated 220 volt unit, is used to power the master oscillator—while anything from 200 to 550 volts, unregulated, is suitable for the amplifier, depending on the desired power output.

The dial is very closely calibrated and a crystal resonator is used to check the calibration. This is very simply observed by tuning for maximum indication on the electronic eye tube and then noting if the dial reads exactly the crystal frequency. The transmitter is then calibrated over the rest of the dial. This crystal does not stabilise the frequency in any way—it is merely a built-in standard to check the master oscillator dial setting. A crystal of another frequency could be substituted—for instance one spotting a particular pet or net operation frequency. This would enable the operator to place himself exactly on a particular frequency in the band.

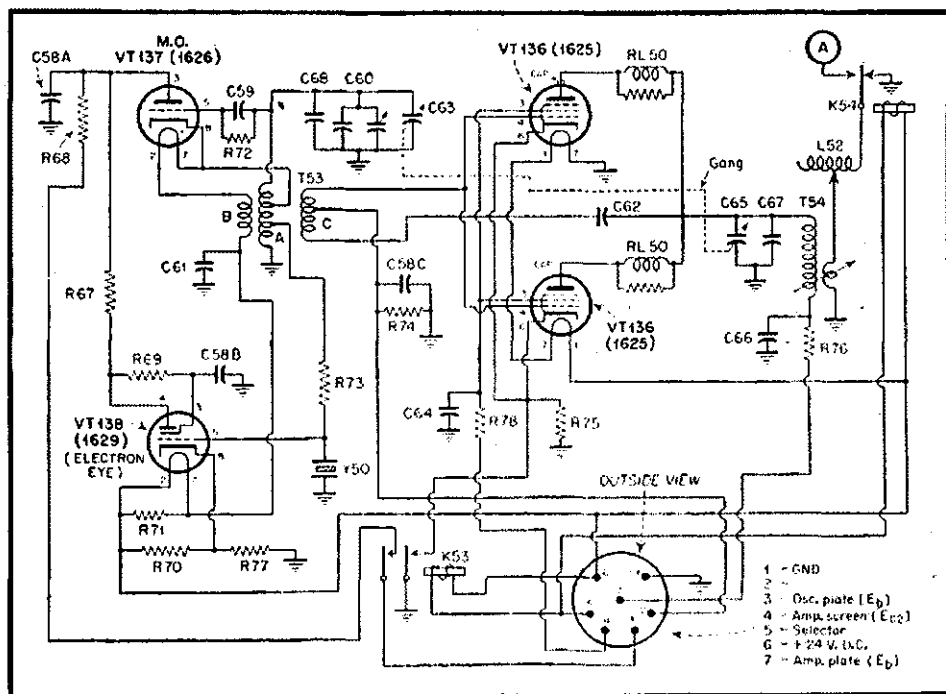


Fig. 1. Original schematic of the BC458 (5.3 to 7 Mc. with a bit of leeway). The following parts are identified:—

- C58A, C58B, C58C—0.05 μ F.
- C59—0.00018 μ F.
- C60—master oscillator padding
- C61—0.006 μ F.
- C62—fixed neutralising
- C63—master oscillator tuning
- C64—0.002 μ F.
- C65—power amplifier tuning
- C66—0.01 μ F.
- C67—power amplifier padding
- C68—3.0 pF.
- C69—50 pF.
- K53—transmitter selector relay
- K54—transmitter output relay

- L52—antenna loading coil
- R67, R72, R75—51,000 ohms
- R68, R76—20 ohms
- R69—1 megohm
- R70—1,000 ohms
- R71—126 ohms
- R73, R74—15,000 ohms
- R77—390 ohms
- R78—51 ohms
- RL50—parasitic suppressors
- T53—oscillator coils
- T54—amplifier coils
- Y50—crystal unit
- 7-prong female plug, outside view.

* "Fran-Reen," Dawn Street, Stafford Heights, Queensland.

RE-WIRING TO USE AS V.F.O.

A number of members have procured either the BC696 or BC457 Transmitters from Disposals, and desire to use them for v.f.o. operation and it is proposed here to outline the steps taken by the writer to put them in operation as v.f.o. units.

Being fortunate enough to have access to a handbook on the SCR274N equipment, of which these units form part, a study was made of the circuit details from which was learnt that the oscillator coil has three windings (see Fig. 1), one being the usual electron coupled oscillator winding which is tapped and connected through a resistance to the grid of a magic eye tube which is used as a crystal oscillator for calibration purposes. Another winding couples the output of the oscillator to the p.a. tubes which are connected in parallel, this winding being centre-tapped, one side going to the grids of the p.a. tubes and the other to the neutralising condenser, while the centre-tap returns through a bias resistance to earth. The third winding is placed in series with the heater of the oscillator tube.

To make the alterations necessary for use, turn the chassis upside down with the oscillator tube and magic eye to the rear. On the left-hand 1625 tube socket pin No. 1 has three white wires connected to it. One of these can be seen going to the front of the unit, one towards the rear and the third towards the right-hand side. Disconnect the wire going to the front of the unit and also the one to the right and connect

both to socket connection 2 which is spare.

From pin 7 of this same socket disconnect the white wire and reconnect to pin 1, from which the two other white wires were removed. Next bridge pins 2 and 7 together and run a wire across to pin 7 of the right-hand 1625, this change having placed the heaters in parallel and completed the circuit for the control relays which control the h.t. and stand-by circuit as well as the antenna switching which is the output terminal for the new v.f.o.

To place the oscillator and magic eye heaters in parallel disconnect and remove the resistor mounted on the rear wall of the chassis at present connected to pins 2 and 7 of the magic eye. Disconnect also the $\frac{1}{2}$ watt resistor connected between pins 2 and 8 of this tube, and remove the white wire from pin 7 of the socket and re-connect to bottom left-hand pin of the power socket (pin No. 6). Now bridge pins 1 and 7 of the magic eye socket and earth to chassis. This completes the work under the chassis leaving a few alterations "upstairs."

Remove the antenna coil and from the connection on the tank coil where the T.C.C. wire from the antenna coil was connected and run a new wire to the antenna terminal via the relay contacts. The needs of individuals may be varied at this point. At 4FN the antenna terminal was removed and a co-ax connector substituted, also the relay contacts were not used.

All that remains is to connect a power supply to the socket, with 12 volts d.c.

via switch to pin 5 of power plug to operate relays and the unit is ready for operation, the rest of the supply being 12 volts a.c. for the heaters, 250 volts d.c. to the plates of the 1625s, 200 volts to the screens and 105 volts to the oscillator, stabilised by a VR105/30.

Tune the main dial to the crystal frequency and switch ON, giving the unit about 30 minutes to settle down. Note whether the magic eye shadow is wide (i.e. 90°). If not, the oscillator is not tuned to the crystal; to adjust, slide back the small cover on top of the unit giving access to the oscillator adjusting screw in the coil box. Carefully adjust until the eye angle is 90°.

The units in use here have proved to be very stable and, as could be expected, have oceans of output. The output in fact is somewhat embarrassing and it is proposed to remove one of the 1625 tubes and re-adjust for single tube operation. This calls for a change in the grid bias resistance and an adjustment to the neutralising condenser which will be found on the right-hand side wall of the unit. This job however is not a difficult one. (Another alternative is to cut the h.t. supply to the tube and leave it in, which would not upset neutralising and only call for a change in bias.—Ed.)

CONVERTING TO TAKE 807s

If a unit has been purchased which has no valves, it may be more convenient to use 6 volt filament types. The 1625 sockets can be easily altered to take 807s as follows:—

Remove the "U" shaped springs from pins 1, 2, 4, 6 and 7 on each socket, and then bend contacts apart slightly.

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Series Phased Aerial Arrays

(Continued from Page 5)

main boom according to the circumstances and the room available and provide cross numbers of light, strong timber and attach grid which is supported by a number of polystyrene split blocks. This holds the whole grid of tubing rigid on to the wooden frame and the method of rotation is one of normal practice and must be left to the intending builder's imagination, his circumstances and his pocket book.

Reference is made to the method of folding the quarter wave feeder and terminating stubs back under the beam to save room. This in no way affects the behaviour of the beam. It should be remembered that the direction of propagation is back over the feeding end of the beam when it is terminated with a 300 ohm resistor.

A TWIN RIBBON SERIES PHASED BEAM

Reference to the drawing of the Series Phased Beam will suggest that there are more ways of filling a pig other than choking him with butter. There is available these days, twin ribbon feeder cable in various impedances. It is suggested that the feed from the transmitter tank could well be in 300 ohm ribbon and the elements of 80 ohm—the feed between each section to be also of 300 ohms.

The whole could be laid out on insulators on a wooden frame and would be light and effective. The feeding stub

need not be used as the 300 ohm ribbon will eliminate the necessity for its use. A quarter wave of the same 300 ohm cable can then be used as the terminating stub and this may be very conveniently folded back under the beam. If a bi-directional beam is desired, this too can be dispensed with altogether.

FEEDING AND BALANCE OF BEAMS

One of the most important subjects which Amateur transmitters should give attention to is the matter of feeding. The old idea of stuffing a few turns into the tank should be avoided. This practice almost invariably results in capacity coupling and if the case is bad may result in the beam and its feeders acting as a Marconi radiator against ground or the electric wiring system.

An aerial tuner should be used in all cases. This will ensure good results, by elimination of standing waves, b.c.i., etc., and above all reduce the losses in the system, thus ensuring maximum energy in the radiator.

The reader is strongly urged to read "Parallel Standing Waves," by W3BLZ, in "QST" of Jan. 1948, page 45. Application of the suggestions contained in this useful article will help towards the objective.

ALTERATION TO V.H.F. BAND

As a result of negotiations between Federal Executive and the P.M.G.'s Department the band 144 to 148 Mc. becomes available for exclusive Amateur use as from the 1st May, 1948. This band replaces the 166 to 170 Mc. band.

A small rat-tail file can now be inserted in the socket holes and the insulation filed. Holes 1 and 7 are filed half the diameter of an 807 socket pin in the direction of the centre of the socket. Hole 4 is elongated equal to its own diameter, also in the direction of the centre of the socket. Holes 2 and 6 are filed equal to their own diameter, in the direction of hole 4.

After checking to see the 807 fits correctly, replace the socket springs.

In the original 7 pin sockets, pins 2 and 5 were used as tie points, having no connection to the valves. It is therefore necessary to remove the plate resistor from its tie point on pin 2 of the right-hand socket, and connect direct to its by-pass condenser. On the left-hand socket the relay leads connected to pin 2 (in article), are shifted to pin No. 7 and the strap between pin 7 and 2 removed.

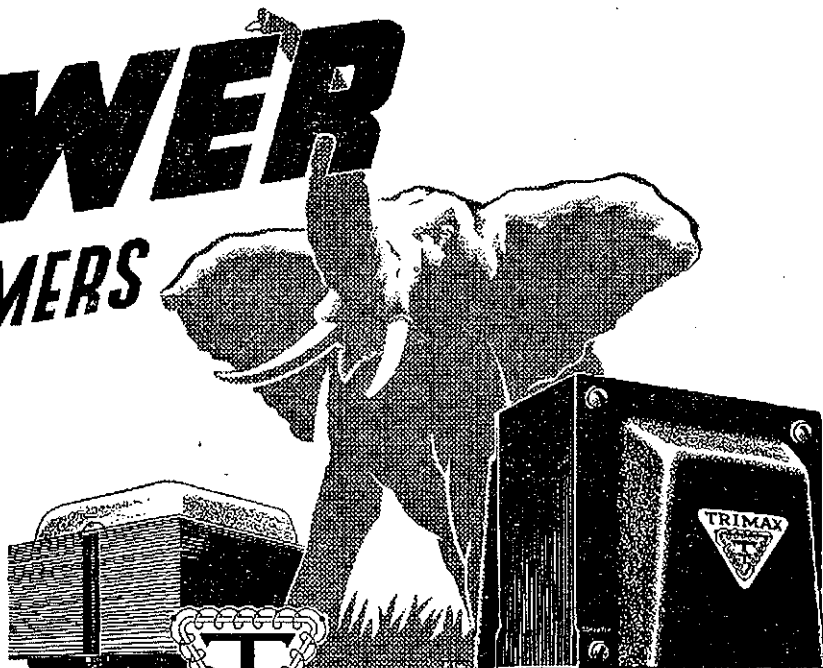
The screen leads which were on pin 3 of each socket are re-wired on pins 2.

BAND SPREADING

The degree of spread on the Amateur bands can be increased by placing a fixed capacity in series with the oscillator and p.a. tank condensers. These condensers must have the same value to retain tracking. Values of 100 pF. give a good spread and should be good quality mica condensers, the oscillator condenser being a zero coefficient ceramic preferably. The 7-7.2 Mc. band occupies about 90 degrees of dial space on the 5.3 to 7 Mc. model with the series capacity specified.

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ENQUIRE FROM YOUR NEAREST SUPPLIER

ARE YOU GUILTY?

"HOW TO LOSE FRIENDS"

By E. A. Charles, VK5YQ

Before proceeding I would like to apologise to all those to whom I caused unnecessary QRM in 1947. I refer in particular to those nightly 14 Mc. phone cross-town long-winded inane rag-chews. It shall not occur again.

Good operators are the result of successful experience. It takes some a lot longer than others to catch on. Instead of complaining, let's try and help the other guy learn a little more rapidly.

THE SECRET OF SUCCESSFUL DX IS THE ABILITY TO VISUALIZE THE SITUATION AT THE OTHER END AT THE TIME!

To illustrate I will quote two examples. The first, Friday evening, 2nd January:—VK-ADX v.f.o.'s onto W3JCR's frequency and answers his CQ, with about 50 calls before giving his own. By some miracle he is partly heard; by a greater miracle, answered. W3JCR explains, says his name is Bill and goes over. Back comes ADX (who obviously didn't get this), "you're Readability 5 and Strength 8 to 9 **old man!**" Neither are heard again.

Here is what ADX obviously does not know. W's phone band is 14200 to 14300 Kc.; there are quite a lot of American stations licenced. He was lost in QRM before he started. Any station that calls very long without giving his own call is automatically passed on.

When the Ws aren't coming through it is nice to move into their phone band to be clear of QRM. However, how many of you give it real thought—if you listened with a little more interest you would most likely hear some VK4 or VK6s working them. So you don't QSY there to give them QRM unnecessarily.

If you don't know how the bands are used, ask someone—that's how we all learn.

Second example, Saturday afternoon, 3rd January:—VK2OQ contacts TI2OA from about 10 Kc. above his frequency. VK-JP was there, over-modulating and v.f.o-ing onto each South American as he appeared. I did hear TI2MA go back to JP as ---JC, but at that time, TI2OA had called CQ at S9 plus. Before VK2OQ has finished, JP is on his frequency frantically calling again. They have another over—at least TI2OA does—then JP calls again despite the fact that Otto had said he was looking for VK3SB. Noting the absence of the VK3, I picked a frequency a little clear—lower than the above splatter, and contacted TI2OA. But did I hear his final? No! JP was on him again calling! I pulled the switches in disgust! But I'll bet he didn't get that QSO.

The correct thing to do—picture yourself at the other end—would you answer a station that rudely interrupts your conversation? You'll tune away to someone in the clear. Simple, isn't it?

Unfortunately some people let their enthusiasm over-ride their better judgment. What if you do make the DX

Century Club in record time, you'll lose your good name in the process. DX will always be with us.

Most people call far too long. Admittedly some stations have HRO receivers with 400 degrees of bandspread, but a chappie usually first tunes the end of the band on which he himself is operating. Put yourself at the other end. OK—if you are on the opposite end of the band, wait until you think he has reached there, and call briefly. You have saved wasted calling should he find someone on his end of the band. Personally I always specify at the end of a CQ just from which end of the band I shall commence to tune. And when I answer (invariably in the case of VK contacts), I call no more than six times, sign and listen. If he doesn't come back, I wait until I think he has tuned to the other end of the band, then call briefly again.

The QSO itself. Unless you have something unusual in the way of antenna, receiver, or circuit hook-up, the other chap doesn't want to know—he's far more interested in the way his own rig is performing. However he does like to see how the antenna and power results compare. If he is new, you may be able to help him overcome a spot of bother which concerns him much more than the DX you are itching to boast about. And please don't talk for the sake of talking to the "great unseen audience." There are lots of listeners who aren't "wireless cranks." Remember, your operating style is a fair indication of your character!

Then there's the matter of giving information. It pays to be sure of what you say—we can all make mistakes at times. The other chap will undoubtedly look it up and/or try it out—and undoubtedly change his opinion of you. Why not quote a reference—"I saw it in so and so." After all there are few of us with laboratory facilities, and far less who know something that isn't to be found in a book somewhere.

This "Hi-Hi" business on phone. To those who must punctuate each sentence with this method, why not break the monotony by using a few "Hee-Hee," "Ho-Ho" and "Haw-Haw's" if you can't laugh naturally. Granted a normal guffaw could be lost in QRN when working an XU or KQ.

"NEVERMORE QUOTH THE RAVEN!"

By "Damocles"

Great game this Ham racket—been in it a long time haven't you—all of ten years or so—know all there is to know—and don't hesitate to air the vast fund of knowledge. Big authority and all that. You are Mr. Ultra-Modern Era phone-man, yes, you can punch a key too, but you only do that on occasions; knowing that if what you sent in "the clear" reached authority, there might be storm clouds on the horizon.

No, you aren't in the radio industry, but you gave that other VK an ear-bashing about what he should do. He couldn't be expected to know over-much

—he is only a lab. technician with one of the largest radio engineering concerns. You couldn't be expected to know either that he was modest enough to pass your gab, in one oreille and out the other, but you know more than him; you just read it up in the Handbook in the long-suffering boss' time.

Yes, a plausible mike technique sure impresses that new Ham, but depend upon it that he will find you out, perhaps sooner than later. Your station is a beacon light in the wilderness of dead-heads on the band; your "audience" awaits your advent with bated breath. And then, l'entree magnifique! Wise-cracking, "Smart Alec Comebacks" and sepulchral "Heh, Heh, Heh's" of the kind that infect your imitators so profoundly. This is the stock-in-trade, and this is the Era of Progress; of speech and still more speech—ad lib—ad infinitum—and to the devil with the morse key.

Fancy any poor mutt wanting to really use c.w. and to waste time thusly. Besides, how could the girl friends be impressed if they couldn't hear those dulcet honeyed tones. And when they visit your shack, which is so often, what more fitting than they be duly impressed with "Raaaaagers" and "Brrrrreaks"—with a few Wilco's thrown in for good measure. Thus is your superb wizardry demonstrated.

Atmosphere is provided by gurgling liquid sounds, clinking glasses and thinly veiled innuendoes, so full of zest. The audience there and "on the air" are rocked to the foundations. It is fitting to inform the world at large that you suffer from "hangovers" as a result of "sessions." It is the very pinnacle of good taste that exudes from your microphone, or so you dumbly imagine.

It is impressive to yap in staccato phrases, inferential tones and ill-concealed riddles—transparent in fact to anybody with the smallest IQ. There are lots of fellow-hams that you don't like on the air—but you don't tell them so directly—they mightn't be so complacent about it. The technique is indirect reference with an under-current of spreading ill-will far and wide. But the saying that "he who throws mud must expect some to stick to himself" is just as true in this Amateur Radio game as in other walks of life. And sometimes prodded worms turn out to be angry lions.

Far better is it to accept this erst-while pleasant hobby of Amateur Radio as a hobby—for that after all, is just what it is—nothing more or less. When individuals make it a medium for antagonism between fellows, then it becomes something else—and even the proverbial Raven would be averse to it.

And of which is to draw attention to the unpleasant fact that there are instances of phone operation on our bands that would be better eliminated—for the good of the hobby. These are casual observations, they mention no specific individual, the only offence likely to be taken is by those with guilty conscience. There are phone merchants of the ilk portrayed among us but they are in the minority. But a cancer starts with a minor ailment!

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SPECIAL ATTENTION GIVEN TO COUNTRY MAIL ORDERS.

KINGSLEY NARROW BAND F.M. ADAPTOR

This unit consists essentially of a limiter and a discriminator, the purpose of which is to permit reception of frequency modulated transmissions.

Any Communications type receiver with a 455 Kc. i.f. channel as the final intermediate frequency may be adapted for f.m. in this way. "The New Look" type of final low frequency i.f. channel (to steal a term from "QST") would of course be the wrong i.f. frequency, but how could one receive f.m. phone with an i.f. pass band with this form anyhow?

The adaptor, which is illustrated in the Kingsley advertisement in this Magazine, uses a 6J5 as a cathode follower, connected directly to the secondary of the final i.f. transformer and, due to the small loading effect of the well-known cathode follower system, the alignment of the i.f. transformer is readily restored by a very minor adjustment to the secondary trimmer or tuning core. In order to take the best advantage of the cathode follower, the adaptor is designed to plug directly into a six pin socket which is to be mounted on the rear of the receiver chassis, as close to the output of the i.f. channel as possible and as the other connections to the receiver circuit are heater, h.t. supply and audio frequency input, these lead lengths are relatively unimportant.

From the cathode follower 6J5 via resistance capacity coupling we go to the 6SJ7 limiter. This stage is the conventional grid leak, low plate and screen voltage connection, and in the limiter plate circuit is the special balanced discriminator transformer which in turn looks into a 6H6, using the Foster and Seeley discriminator circuit. This discriminator transformer has a litz wire wound primary fitted with an iron dust pot and tuned with an iron dust core to 455 Kc. The secondary is a balanced winding in two sections and is padded with a fixed silvered mica condenser and tuned with a 3 to 30 pF. trimmer.

The discriminator output is taken via a coupling and filter system to the audio frequency input to the receiver and this is an efficient and convenient place for the switching to be made from a.m. to f.m.

In fitting this adaptor unit, the input to the a.f. gain control is opened and both the output from the original a.m. detector and the input to the a.f. channel are run in shielded wire via the socket at the rear of the chassis into the adaptor to pick up the output from the f.m. detector, then along to a switch, to be fitted in a convenient place on the front panel of the receiver. Thus once the unit is installed and the two trimmers peaked to the i.f. frequency, the simple operation of a single pole double throw toggle switch, changes the receiver immediately from a.m. to f.m. reception.

BRITISH RADIO COMPONENTS MANUFACTURERS' EXHIBITION

Federal Executive received an invitation to attend this Exhibition, and as readers will realise it was impossible for a member of F.E. to accept this invitation, Federal Executive requested Mr. Ken McTaggart (VK3NW/G3CUA), who is at present in England, to represent the Wireless Institute of Australia.

Ken duly attended the Exhibition and the following is an extract from his letter, and we have no doubt that readers will find it interesting.

"This is just to let you know that in due course I attended the Radio Components-Manufacturers' Exhibition at the Grosvenor House Hotel and found it of very great interest. Under separate cover and by ordinary mail, I am sending you one of the small "guides" to the exhibits which will give you some idea of the number of exhibitors and the variety of components on show, and also a couple of leaflets which describe some new departures in the design of speakers which I thought of special interest.

"It would be impossible for me to describe even a fraction of the good things I saw. This country appears to make every imaginable component nowadays, and the quality seems of a high order. Unfortunately in the shops the prices are rather too high and many things are in short supply, but that does not alter the fact that the manufacturers here are wide awake and out to produce the goods.

"I might mention in particular the very fine ceramic mouldings that are made for switches, valve sockets, condenser insulating, standoffs, and so on; the variety of plastic insulated cables including the wide range of 'twin lead' of various impedances, and co-axial cable from approximately $\frac{1}{8}$ " diam. up to over an inch; a wonderful assortment of relays of all descriptions; speakers from 2" to 20" and larger for public address work—including the new speakers described in the pamphlet I have sent which are from 2 $\frac{1}{2}$ " to 8" diam. and only $\frac{1}{2}$ " to $\frac{3}{4}$ " deep, very useful for portables, mantle models, etc., and anywhere where space is at a premium.

"This country is also producing splendid meters of all kinds, also a wide range of microphones, while fixed condensers of various sizes and tolerances (down to $\pm 0.5\%$) and finished in 'lacquer,' 'manufacturers' semi-tropical,' and 'fully tropicalised' finishes make one's mouth water.

"I could go on like this for many pages but it would not tell you a great deal. To summarise, I would say that things are booming here and England is producing radio gear equal to any in the world and better than most. Thank you once again for sending me the invitation.

"Yes, I see Elgar Treharne periodically and have passed on your 73. He maintains regular contact with his father 2BM and seldom misses a morning. I

have not been so fortunate, but have contacted a number of the boys including 3YP, 3BZ, 3CZ, 3XU. Also some VK2s, 4s, 5s, 7s, and one VK6. I have been on 58.5 Mc. quite a lot and find conditions there very good with much more temperature inversion than we get in VK3, enabling work from 50 to 200 miles to be done quite regularly. 50 Mc. has now faded out again and unfortunately I was not able to get on during the excitement. However I may be able to do something in the summer before I leave here.

"I get the Mag regularly—although belated—and am very glad to see that the 50 Mc. fellows are keeping up the good work with field days, Spor. E and so on. One reason for wanting to return is to take part in those most enjoyable outings to the hills!"

FRENCH EXPEDITION TO THE ANTARCTIC

It will be recalled that Monsieur Yves Valette, who is mentioned, was a guest at a recent general meeting of the Victorian Division and spoke of the proposed French expedition to the Antarctic during a short address to members.

Monsieur Valette was accompanied by Monsieur G. B. Perronne, Commercial Secretary to the French Consulate in Melbourne, who approached the Victorian Division of the W.I.A. in making the initial enquiries concerning the possibility of the French expedition maintaining constant radio contact with Australia.

The following article appeared in the Melbourne "Age" on Saturday, 3rd April.

"France will send a well-equipped scientific expedition to the Antarctic at the end of this year. It will be the first French party to visit the Antarctic since 1909.

"M. Yves Valette, a French engineer, received a letter from the French Government confirming the plan to send an expedition southward when he stepped ashore at Williamstown on Friday, 2nd April, from H.M.A.S. LST3501, which returned from the Antarctic. He will be one of the leaders of the expedition.

"M. Valette has had wide experience in the north polar regions, and 'limbered up' with a 300-mile trek on Spitzbergen before he flew out to Australia, to accompany the Australian party to the south. He is a champion skier.

"He went to the Antarctic in H.M.A.S. LST3501 to study conditions and make an advance survey for the French expedition.

"M. Valette said the expedition would go southward in minesweepers used during the war by the Free French. He said the party would include meteorologists, geologists—who will look into the rumor that uranium ore is available in the Antarctic—and cosmic ray experts.

"All the details are being worked out in Paris," he added. "It will be a most important expedition. We must establish our claim down there." The French party will sail from Australia."

FIFTY AND UP

Compiled by VK3QO, to whom all contributions can be sent

DX ACTIVITIES

Max 3BQ took a little holiday on the 20th and 21st of March; while he was away someone turned on his 50 Mc. receiver and heard what they took to be ZL4BT, but did not make a note of it! About three weeks ago 3BD had a contact with 4ZU, sigs faded out on the third over. Next was on 7/4/48, 3KO heard 2ADT and 2LY; on same evening 5QR worked 2YR, 2LY and 2WJ, S9 both ways at 9.30 p.m.

On Saturday 17/4/48, between 2130 and 2220 3RR heard 2ADT, 200 and 2RU. Dicky called and worked them, but not too good as sigs were in and out, peaking to S9. However 3GM and 3ZL at Ballarat worked each of them with fair reports. 4XG, 4ZU and 4XU were also heard working among themselves. 5QR and 5LC also contacted these VK2s. 2XA heard 2ADT S9, but no contact.

It is understood that on Sunday, 13/4/48, the ZL boys worked from one end of New Zealand to the other, being a 1,000 mile hop. Fine business fellows. This just shows how you have to watch the band, if you want your share of DX.

W2SAV/KL7 in the Aleutian Islands will be on 52 Mc. with 1 kilowatt input with special antenna beamed on Australia. He will be listening on that band and will also be active on 14 Mc. W2SAV/KL7 would appreciate any reports should his signals on 52 Mc. be heard.

VK3-VK7 CONTACTS

Some very interesting work has been done by VK3CI in working from Mt. Fatigue across Bass Strait to 7AB in Burnie and 7XL in Devonport, a distance of about 190 miles.

3CI first made contact on 27/2/48 and on next week-end, 3rd and 4th March, he camped out up on Mt. Fatigue (about 35 miles from coast). On the Saturday at 1430 hours he worked 7AB with S9 sigs and no QSB, 7XL not on air at time.

However he worked both 7AB and 7XL about every hour or so with consistent signals, so it appears that ground wave was being used. (3RR says it may have been a "water wave.") On the Sunday, he repeated the performance, but 3DI portable at Leongatha and 3HK portable at south end of the Dandenong Ranges, and 3VL at Red Hill did not hear the VK7s. 3BQ at home, heard a carrier which he has every reason to believe was 7AB and if c.w. had been used he could have identified it positively. Further tests will be made to see if contact can be made from lower levels.

VK2 V.H.F. MEETING

The V.H.F. Group, which meets at Science House on the second Friday in each month, celebrates its first birthday this month (April). The members, whose numbers are gradually increasing, are most enthusiastic. The March meeting took the form of an informal "free-for-all" discussion on many things—almost the proverbial ships and shoes, etc.

Two items of outstanding interest were brought up by Messrs. McGowan (2MQ) and McDonald (2APC). Mr. McGowan spoke on the subject of r.f. amplifiers and frequency converters for 50 Mc., and outlined some experiments he has made on the subject. Mr. McDonald detailed a novel converter for 28 and 50 Mc. A 6AK5 r.f. amplifier precedes an ECH35 mixer-oscillator, and the grid tuning for each valve is by means of a condenser of sufficient capacity range to cover both bands without changing coils. The oscillator operates in the range of 39-43 Mc., thus giving an 11 Mc. i.f. from either band. The result is a converter giving single dial control, full scale bandspread, and without coil switching. Both these gentlemen have agreed to write articles on their respective subjects for publication in "Amateur Radio," and it is felt that both articles will be very interesting.

Mr. John Fry, of the C.S.I.R., Radiophysics Laboratory, was to have addressed the April V.H.F. meeting on the subject of V.H.F. Receiver Design, but unfortunately developed appendicitis at the last minute. His place was ably filled by Mr. Bird, who spoke on the subject of antenna arrays giving 360 degrees, low-angle coverage, with horizontal polarisation. This lecture was of great interest (mainly to those having access to large quantities of brass tubing!) and Mr. Bird has kindly consented to write an article on the subject for "A.R."

At this meeting, a discussion was opened regarding vertical versus horizontal polarisation for opening the 144 Mc. band. After considerable discussion, it was decided to recommend that HORIZONTAL polarisation be regarded as "standard." At the same time, it is realised that vertical

polarisation has its merits, especially for local contacts, and those having facilities for erecting both systems are urged to do so.

In order to stimulate use of the V.H.F. bands, it has been decided to organise a contest. A committee has been appointed to consider the form the contest is to take, and to formulate rules, etc. Details will be published at a later date.

The Radio Research Board, who are concerned with ionospheric soundings and predictions, have expressed an interest in long distance and unusual propagation conditions on v.h.f.s. It is stressed that normal contacts are of little value and the required information is as follows:—

Date, Frequency, Direction of Signal Arrival, Distance between Stations, Signal Strength, Time coming in, and Time fading out.

Mr. Curruthers (VK2AXB) has agreed to act as "clearing house" for reports as above, and it is requested that reports be addressed as follows:—

Mr. Curruthers, c/o. Court House, Newtown, N.S.W.

Once again members using the 50-54 Mc. band and those planning to use it, are urged to utilise the high frequency portion of the band, and to sign off, at least on c.w. Commercial interests have their eyes on the 50 Mc. band and will have a very strong case if the section from say 52 to 54 Mc. is not used by Amateurs. The recommendation to use c.w. is prompted by the fact that weak carriers are often heard, but cannot be identified on phone, whereas if c.w. were used, it might open up DX possibilities.

JOTTINGS FROM AROUND THE STATES

VK3KX at Colac (90 miles) broke through several times on calm nights in the last month. He worked a number of the Melbourne boys at S8/8 using a long wire (one leg of a V beam), tried a two element but signals were no better.

3IZ (Warrigul) and 3DI (Leongatha) get good signals from one another. 3ZL (Ballarat) has been busy trying out different converters, but finds his old set is best. Runs a regular sixed with 3HK at Micham. 3HK gets 3VL with 3HK's beam 185 degrees from correct position, evidently due to some reflection or other. 3RR has been trying out a six element beam at Macrae. 3BQ gave him S9 plus 24 db. off front, side S3, back S5, giving a front to back of 48 db. (eight S points). Dicky still not satisfied and thinks he can do better! Job was close spaced, 12 1/2 feet high.

3NP is latest addition to 50 Mc. band, using 100 watts to p.p. 800s in final, with 15 tube modulator system with all "mod. cons." Complained that poly in final condenser had a carbon "path" across it; 3RR suggested cutting it into cubes for "stepping stones." 3KC (Kensington) is another new one, uses an 807 with about 20 watts and puts out a good signal. 3BQ still calls as usual on c.w. at 1200 and 1500 hours each day. 3VM has put in an appearance on the band with a mobile rig consisting of a crystal exciter to an 832, using a few watts into a vertical 1/4 wave on back of car. Receiver is a two tube super regen to 1/4 wave antenna on top of car. Has worked a few of the locals. 3XA has fitted a discriminator to "Super-Pro" and finds that i.f.s. have to be set to maximum band-width for best quality. 3BD busy on new converter using grounded grid r.f. stage, etc.

From 3ABG at Avenal—Active on 50 Mc. up here (80 miles north of Melbourne) are SUI, 3DW, 3APF and myself. Communication is 100 per cent. on phone between all of us at all times. 3APF is very keen, has tried several converters, latest one seems pretty hot. He runs 15 watts to an 807 and three element beam on 50 Mc., 3.5 Mc. zepp on the receiver. He is receiving Melbourne signals now. 3DW is still putting out very f.b. sigs from 18 watts and SUI has been working 3VL, 3HK, 3ABA and 3CP including duplex with 3VL. Alan would like more stations to call on c.w. then use phone if sigs are OK. His line noise is very high and c.w. gets through it better. We also request that Melbourne stations give their call signs on 100 per cent. mod.

Main activity in VK4 centres in preparation of gear for 144 Mc. 522s are well in the fore-front as transmitters and a good few of the receivers also. 4HR, 4RY and 4XG all erecting six element beams for 144 Mc. "Q" section as described in the Handbook. The v.h.f. gang are looking forward to the Field Day on the 1st and 2nd of May to mark the opening of the band, when 4CU and 4SN intend operating from Mt. Kunock, Toowoomba, 4KP from Springbrook and 4XG and 4ZU from Maleny. 4XG will use a six element array on 144 Mc., 4ZU a

four element on 50 Mc. and a sixteen element on 144 Mc. 4RT busy converting his 322 transmitter to 50 Mc. Has fitted a pre-amp for a crystal microphone but is having a little feedback trouble. 4KB somewhat embarrassed for time, but getting a responder unit going as a receiver. Getting elements together for a beam. 4ZU just finished a dual converter unit for 50 and 144 Mc., the thing feeds into a 348 and works out quite well. Owners of 522s, who are having bother extracting screws from condenser couplings, etc., should remember that a little heat applied to the screw area makes the job much easier. Even the tang of a file ground to size is sufficient to remove the screws under this treatment, according to 4RT who has tried it.

From VK5QR—Apologies to 3QO from VK5 gang for not writing, but activity is at low level here in VK5 at the moment.

From VK6LW—Very little to report this month. Usual nightly activity and increasing interest among country stations. 6FC at Minding (118 miles) still putting in good signals at night, but believe his rig is to be returned to 0GJ, also at Minding. Hope Jack will soon have receiver going on 50 Mc. Several attempts made during Easter holidays to make contact from Gnowangerup to Perth, Albany, Minding, Manjimup by VK2, 3, 4, 5, 7—ZL; but apparently no TI—certainly no signals. 6LW's portable at Northam worked back to 6FC at Collesloe, a distance of 60 miles. Strengths 5 and 7 were the reports. Believe several lads waiting to go on 144 Mc. with SCR522s. Watch it chaps, and don't beat the gun. Remember May 1, not April 30.

144 Mc. DIGEST

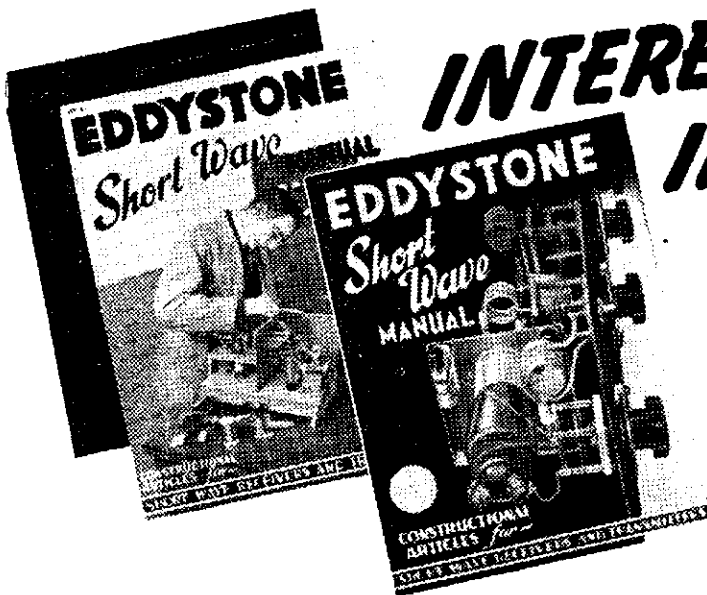
By the time these notes (by Bill Hartley) are published the old 166 Mc. band will be finished with, but not forgotten as the gang will have pleasant memories of the good times that they had on the old spot and will leave it with a touch of regret. However no one can deny that one bright spot is that all the 166 Mc. disciples have qualified for the W.A.S. certificate (worked all suburbs).

Operations never slackened on 166 Mc. even right up to the "kill"; actually there was always some new station putting in an appearance, 3ADF being the latest with 16 watts input to a 832, four stage v.f.o. rig, with a class B 6N7 modulator on to a portable W8JK, the receiver is one using a f.b. two stage grounded grid pre-amp using RL37s, which lift anything from S1 to S9.

In preparation for the last 166 Mc. field day in VK3 the following carried out tests: 3ACM, 3ABA, 3YS, 3LS, 3LH, 3MB, 3MN, 3XM, 3EM and 3YJ. 3LS at Mt. Donnaburg in an impromptu test, flattened Melbourne with a maximum effort in trying to get by to 3AKI at Mt. Sabine on the coast. The actual Field Day opened up under dull and cloudy conditions and by noon onwards heavy rain ruined any good work. The most reliable signal came from Mt. Macedon, where 3ACM was pushing out a steady 5 and 8 phone all the afternoon to 3ABA at Pretty Sally Hill, and to the home stations 3EM and 3LH. 3ACM topped off the day with a f.b. two way record-breaking phone contact for a distance of 92 miles to 3MB at Poowong in South Gippsland. Congrats to both 3ACM and 3MB for taking the National title, the nearest to this effort was by 2BZ in Newcastle to 2YV at Maroubra, a distance of 78 miles and before that a jump of 72 miles by 3LS at Mt. Macedon to 3YS located at Arthur's Seat on Port Phillip Bay.

Interest is still maintained in 166 Mc. by the Adelaide boys where the latest recruits to the band are 5AF, 5CB and 5GA, all are using CV6 mod. osc. plus a mixture of long wires, dipoles and ground plane antennae. 5JD's super receiver provides too many headaches, better wait for 144 Mc. Johnny. 2NP informs that there are scores of VK2 stations sitting on the fence waiting to head-in on 1st May. Incidentally, both 2NP and 2KI will be down South again, probably with the QTH at Laverton.

In view of the shift to the 144 Mc. spectrum, it is considered by many that something definite concerning the type of aerial polarisation for this band should be decided on, the object being to avoid cross polarisation, or to put it plainly, for everybody to start operations on the new band with the same kind of polarisation so as to avoid conflicting results. The "Gallop-Poll" to date, in VK3, is quite unanimous, as to horizontal polarisation, and, judging by the change-over from the vertical form in N.S.W., the VK2 boys also agree. It seems to be the logical step to use horizontal as it provides greater discrimination against auto ignition QRM as well as from harmonics from the lower frequencies. Still, it is a matter of location and experimentation, and that is what we are here for, so we hope for co-operation from the Interstate v.h.f. groups in deciding what standard is to be used.



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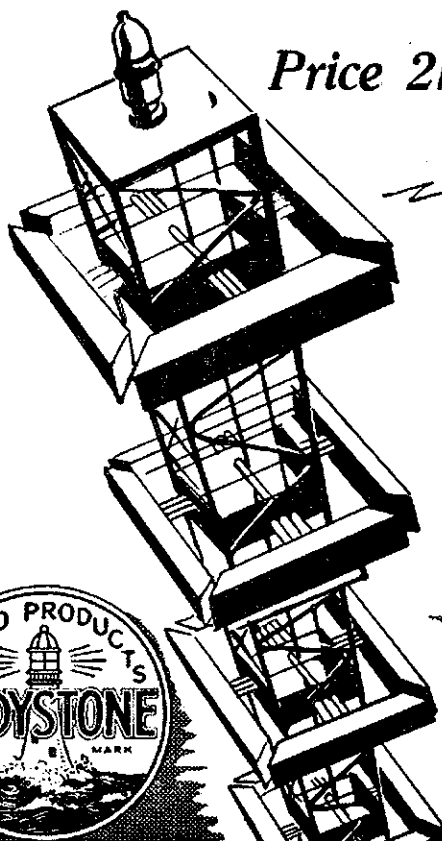
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Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Coogee.

Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, 116 Bogan St., Nyngan; South Coast and Tablelands: R. H. Rayner, VK2DO, 42 Pettit St., Yass; Southern: E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury.

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Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: B. Scetrine, VK3BI, 17a Raglan Street North, Ballarat; North Eastern: D. Tacey, VK3DW, 18 Harold St., Shepparton; Far North-Western Zone: Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; Eastern Zone: J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

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All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7168 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

From VK6WH.—Sundays, 0930 hours WAST on 7168 Kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 638J, G.P.O. Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor: H. T. MacGregor, VK4ZU, "Moquet," Eildon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—R. W. S. Hugo, VK6KW, 8 View St., Subiaco.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL

THE CONVENTION

The Eighteenth Annual Federal Convention of the Wireless Institute of Australia was opened at the rooms of the Victorian Division at 2.15 p.m. on Friday, 26th March, 1948. Being the third Convention held since the cessation of hostilities in 1945, it was again represented by delegates from all Divisions.

The delegates present were: New South Wales—Mr. J. M. Moyle, VK2JU; Victoria—Mr. H. N. Stevens, VK3JO; Queensland—Mr. F. M. Nolan, VK4FN; South Australia—Mr. H. L. Austin, VK5AW, and as an observer, Mr. A. F. Wreford, VK5DW; Western Australia—Mr. G. A. Moss, VK6GM; Tasmania—Mr. J. Brown, VK7BJ. Also in attendance were the Federal Vice-President, Mr. A. G. Glover, VK3AG; Federal Secretary, Mr. W. T. S. Mitchell, VK3UM; Federal Treasurer, Mr. P. Evans, VK3OZ; Federal Publicity Officer, Mr. G. W. Manning, VK3XJ.

Owing to illness the Federal President, Mr. W. G. Gronow, VK3WG, was unable to attend the Convention. We are pleased to say that he is now well on the way to recovery and ere long will be one of handom's best golfers.

Mr. Evans, on behalf of Federal Executive, welcomed the visitors and was ably supported by Mr. H. N. Stevens, Victoria. Following on the reply made on behalf of the delegates by Mr. J. M. Moyle, nominations were called for the position of Chairman, to which Mr. A. G. Glover was appointed.

The first business of the Convention was to reach agreement on the title of the Federal Constitution and it was resolved that the 1947 Federal Constitution of the Wireless Institute of Australia be known as "The Wireless Institute of Australia 1939 Constitution as revised in 1947."

Following discussion on the Federal Constitution it was found that a slight re-drafting of three sections were to be made by Federal Executive and submitted with the minutes of the Convention to all Divisions for ratification.

A copy of the Federal Constitution will be made available for the perusal of any financial member upon application to his Divisional Secretary.

With regard to the drafting of a Uniform Divisional Constitution, the chairman gave an outline of the progress to date.

The Convention adopted the principle now in use in the New South Wales Division for use in all Divisions in relation to Radio Clubs.

As the time was not yet opportune for the appointment of full-time Federal Secretariat this matter was left in abeyance.

A report was made by Federal Executive giving details of the plan at present under discussion for the formation of an R.A.A.F. Reserve and in addition will collect and collate all available data regarding

SILENT KEYS

PHIL BREWER, ex-VK6JA

We regret to chronicle the passing, during April, of an old friend and colleague in Phil Brewer, ex-VK6JA. Phil, who first came on the air about 1927, was a power in the DX realms up to 1935. His operating ability was second to none, and he put VKs in the picture in many a Fisk Contest. Of a quiet and retiring disposition, but possessing an intense sense of humour, Phil endeared himself to those fortunate enough to break down his natural reserve, and was not deserting of the worry, and sickness that was his uncomplaining lot since 1942. Phil did not renew his licence after the recent World War. To his sorrowing wife and young son goes the condolences and sympathy of all old timers in Amateur Radio who deeply mourn his passing.

existing emergency networks and evolve a workable emergency scheme for a National Amateur Network.

The Convention also felt that there was a need for the establishment of an A.O.C.P. correspondence course and in this connection have instructed Federal Executive to start implementation of such a course.

Considerable time was spent in discussion of the P.M.G. regulations, and it was decided to seek certain changes, notably the payment of license fees in their own particular State and the inclusion of the words "by receivers of modern design" between the words "programmes" and "the Amateurs" in Regulation 107.

That Federal Executive continue its endeavours with the P.M.G.'s Department with a view to ensuring that amateur station licensees receive the same consideration as broadcast listeners in regard to man-made interference and request the introduction of legislation to curb such interference.

All members are invited to log all types of transmissions from commercials and others not supposed to be in the amateur bands, and logs are to be forwarded, via their State Councillors, to Federal Executive.

The Convention confirmed the motion that W.I.A. traffic and broadcast channels be kept clear at the times and on the frequencies in use from time to time and as published in "Amateur Radio." In order to assist in this direction it was considered that Federal Executive evolve a plan for all official W.I.A. stations to operate on a frequency of 7196 Kc. on Sundays and all members are requested to keep that channel clear from 9 a.m. to noon E.A.S.T. After official broadcasts have been made

the W.I.A. Station will change to a frequency to be determined for intra-state working and thereby permit the next Divisional broadcast to commence. Your earnest co-operation is desired in this connection as most of you chaps will realise by the amount of interference that appears with each official broadcast.

The illegal practice of breaking-in on a QSO for the purpose of interjecting facetious remarks and the abuse of the v.f.o. was strongly condemned. In view of the recent Editorial in "Amateur Radio" on this subject, no further warning should be necessary. It is considered the bounden duty of anyone hearing instances of this nature to contact the offender concerned and with fact point out the wrongs of such operation, also that he is likely to incur a penalty from the authorities. The above practices are not to be confused with the permissible procedure adopted by stations notifying their readiness to join a network or group of stations who habitually work together; that is, station operator switches on carrier after netting and says, "This is VK— standing by for VK—," and immediately cuts carrier until invited to transmit.

It was also considered that the P.M.G.'s Department be requested to allocate VK8 calls to Northern Territory stations and VK1 to Australian Capital Territory or other special stations.

Included in the agenda items was the hardy annual that "a gentleman's agreement" be made to observe portions of each band for c.w. operation. A plan was submitted and all delegates were asked to bring the matter before their Council for consideration.

It was felt that after listening to the various types of phonetic alphabets in use from phone stations that some uniformity be established and to this end it was recommended that the one published in the P.M.G.'s Handbook should be encouraged. In order that an international standard phonetic alphabet be adopted the Federal Executive is communicating with the International Amateur Radio Union to this end.

When items concerning contests came up for discussion it was decided that the DX Contest be conducted in October in each year alternatively by the N.Z.A.R.T. and the Federal Executive. The 1948 one will be conducted by N.Z.A.R.T., and in 1949 it is thought that as Their Majesties will be touring Australia and New Zealand the Contest, which will be conducted by Federal Executive, could be suitably known as the "Royal Commemoration Contest." No doubt there will be certain legalities to be made in connection with the use of the word "Royal."

Contests, in the future, shall not exceed in duration 48 hours at any one period and the total operating therein shall be limited to 24 hours consecutive operating.

All contests of a Federal nature shall be conducted by Federal Executive under the direction of Federal Council. Federal Council have power to approve or otherwise of any Division conducting special contests.

As the concluding item on the agenda, Council decided that the next Federal Convention shall be held in Melbourne during Easter 1949.

During the course of the agenda business the Chairman requested submission of items for consideration as general business; twenty-two items were submitted, fourteen of which were carried. The items of general business included: re-draft sections 49 and 55 of the Federal Constitution; delegates instructed by their Council to vote a certain way on agenda items shall hand in a note to the Federal Secretary on which is stated their method of voting in order that the section of the Federal Constitution on automatic ratification may be implemented; broadcasts of Federal matters from Divisional stations shall be made only on the authority of Federal Executive or the Federal Council of the Division. In this regard it was recommended from the Federal Council that any Division receiving prior information should without delay forward the matter to the Federal Executive for immediate action. The Federal Council continue its enquiry in connection with the name "Royal" for the Wireless Institute of Australia. A special per-capita levy of 6d. per member be made on Divisions to establish a sinking fund for Federal Executive administrative obligations. The P.M.G.'s Department be approached with a view to obtaining a mobile license as distinct from a portable license. That in future contests rules should provide that the logs of VK contestants be sent to appropriate State Divisional Councils so that Federal Executive may be advised as to their being financial or otherwise. That an approach be made to I.A.R.U. with a view to evolving an international numbering system for DX contests, pointing out the advantages of the VK system. That W.I.A. provide funds for a perpetual trophy for the Remembrance Day Contest, and that, as soon as possible, F.E. forward suggestions to the Divisions as to the form that the trophy should take. In this regard Federal Executive would appreciate some constructive suggestions to enable them to arrive at a suitable decision. The distribution of certificates, awards, etc., be made by Divisional Federal Councilors at monthly Divisional meetings. That in the endorsement of membership certificates of the W.I.A. the appropriate membership grade shall be indicated. In considering the uniform Divisional Constitution

DX C.C. LISTING

	PHONE	
	Nil	
	C.W.	
VK3ON	.....	108 (3)
VK2EO	.....	101 (7)
	OPEN	
VK2DI	.....	116 (2)
VK3BZ	.....	109 (5)
VK3MC	.....	108 (6)
VK3HG	.....	100 (4)

Three further applications are in hand awaiting checklog, from VK3KN, VK2ACX and VK4HR. Certificates are in the course of preparation for those listed above. Figures in parenthesis indicate the membership number to the DX C.C.

consideration be given to the inclusion of provisions to permit for the setting up of W.I.A. sub-branches under the auspices of the respective Divisions and based on the present zone boundaries.

The Federal Executive to draw up a budget of anticipated expenditure for the Convention and send to the various Divisions, three months before the Convention meets, requesting the pro-rata amount indicated to be remitted.

All items herein are subject to the ratification of the Divisions.

The Convention was relieved by the kindness of the Victorian Division in entertaining the visiting delegates and Federal Executive at a dinner and suitable evening entertainment for which the thanks of all those present is hereby extended.

AMENDMENTS TO CALL SIGNS

New issues:—

- VK2AGW—A. E. Hay, 1544 Pacific Highway, Wahroonga, N.S.W.
- 2ALZ—V. J. Nugent, 47 Bayview St., Bexley.
- 2QL—C. Bowler, 25 Castle St., Raudwick (station on S.S. Iron Baron).
- 2UH—N. G. Hansen, University Hotel, Broadway, Sydney, N.S.W.
- 2XW—L. W. Oranch, 47 Russell St., Vaucluse.
- VK3AGU—H. Chapman, portable of VK3GU.
- 3DY—R. M. Davis, Birdwood Ave., Dandenong.
- 3GH—G. R. Howard, 52 Esplanade, Brighton Beach, Victoria.
- 3GQ—E. R. Bouehier, 4 Chambers St., Footscray.
- 3HB—B. F. Coy, 17 Thames St., Northcote.
- 3RA—R. C. Greig, Daveys Bay Rd., Mount Eliza.
- 3TH—G. C. Morrison, "Ferndale," Yinnar, Vic.
- 3UV—N. Sernell, 12 Royal Cres., Camberwell.

- VK4GB—G. S. Barr, Emsworth St., Wynnum Central, Qld.
 - VK5CF—W. G. Wilson, 67 Brown St., West Oroydon, S.A.
 - 5PL—J. B. White, 30 Amherst Ave., North Norwood, S.A.
 - VK6EB—E. L. Bradshaw, 57 Government Rd., Morley Park, W.A.
 - 6FA—R. F. Ager, 815 Wellington St., Perth.
- Alterations:—
- VK3AP (in lieu of VK3APR)—A. P. Reynolds, 11 March St., Richmond, N.S.W.
 - 2EZ—J. R. Moyle, 87 Gould St., Bondi Beach.
 - 2HF—J. A. Purze, 88 Beecroft Rd., Beecroft.
 - 2HG—J. P. Mackel, 35 Longueville Rd., Lane Cove, N.S.W.
 - 2LE—F. H. S. Lee, Surriell Point Rd., Dolans Bay, N.S.W.
 - 2LO—C. S. Higgins, 27 Monash St., Wentworthville, N.S.W.
 - 2MJ—A. J. T. Crisp, 20 Carrington St., Bexley.
 - 2OU (in lieu of VK4LP)—A. S. Littlejohn, 158 James St., Leichhardt, N.S.W.
 - 2OX (in lieu of VK6EV)—J. J. Mount, 48 Milling St., Gladesville, N.S.W.
 - 2XJ—P. M. Broome, 102 Griffiths Ave., Bankstown, N.S.W.
 - VK3AOF—V. C. Forbes, 13 St. Phillips St., Abbotsford, Victoria.
 - 3ALL (in lieu of 7LL)—Dr. K. M. Kelly, Infectious Diseases Hospital, Fairfield, Vic.
 - 3DD—L. J. Meadows, 30 Stephen St., Hamilton.
 - 3GH—G. Howard, 11 Grummond St., Ballarat.
 - 3KG—K. L. Green, 52 Severn St., North Balwyn.
 - 3QZ—J. G. Colley, 18 Chenhall Cres., Traralgon.
 - 3TY—W. H. Murden, Rupanyup, Victoria.
 - 3XP—L. R. McIntyre, 62 Chelwynd St., West Melbourne, Victoria.
 - 3ZF (G. G. Coventry, 111 Emmaline St., Northcote, Victoria.
 - 3ZY—W. F. Borgreest, 7 Chamwood Cres., St. Kilda, Victoria.
 - VK4CR (in lieu of VK2ACD)—C. M. Carter, 56 Crescent Rd., Gympie, Qld.
 - 4DB—D. S. Brown, Mirrabooka Rd., Ashgrove.
 - 4EA—E. R. Ashlin, Billinga, South Coast, Qld.
 - 4MW—M. J. Wratten, Clem St., Brassall, Ipswich, Qld.
 - 4SG—S. R. Grantham, 74 Herries St., Toowoomba, Qld.
 - 4XY—L. I. McGarry, c/o Mrs. Crawford, Swan Rd., Taringa, Qld.
 - 4YS (in lieu of VK2YS)—S. P. Sorenson, c/o Station 4CA, Cairns, Qld.
 - 4ZZ—J. L. Raue, Dalgeish St., Toowoomba, Qld.

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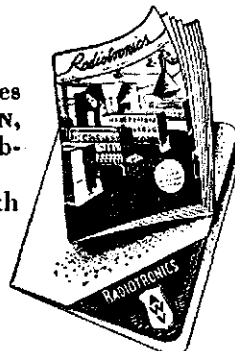
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 6LA—L. C. Allen, Cape St., Tuart Hill, W.A.
 VK7NL—N. J. Lipscombe, 177 Invermay Rd., Launceston, Tas.
 VK9GW—G. A. Warner, Paga Hill, Port Moresby, T.P.N.G.
 Cancellations:—
 VK8TM—A. H. Buck (deceased).
 VK5LO—H. E. Loeser.

the 1948 BERU Contest. Eric supplies the following rare DX QTHs:—
 ZS9D—Box 14, Francistown, Bechuanaland.
 W00ZW—U.S. Naval Station, Pago Pago, U.S. Samoa.
 AR2LD—Beirut, Syria (QSL via A.R.R.L.).
 CZ1A—Monaco (QSL via A.R.I. Milan).
 VS9ET—Oman (QSL via R.S.G.B.).
 VS9GT—Oman (QSL Signals R.A.F. Station, Sharjah B.R. Forces in Iraq).
 MC1A (7MC)—Benghazi, Cyrenica (QSL via R.S.G.B.).
 AP5E—Lahore, Sakistan (via R.S.G.B. or G8HS).
 V0EAT—A.P.O. 863, care P.M., New York City.

member who happened to be in Melbourne at Easter, and it is felt that this is not the best arrangement; ideally, the position should be filled by someone who is prepared to act as a Councillor for the following year.
 As a parting shot, your scribe is again appealing for articles, technical and otherwise, for publication in "Amateur Radio." To date, the response has been nil!

SOUTH COAST AND TABLELANDS ZONE
 2PI was heard on 7 Mc. c.w. Rig consists of 6V6 crystal, 807s in parallel with 60 watts input, receiver is a No. 11. Modulator is under way, using antenna left by 2VS. 2GU is QRL on 50 Mc. Has worked 2PN and 2TA on that band using a rotary beam. Heard working 2OM cross band 8.5/7 Mc. 2JQ (the Voice of Crookwell) heard often with good solid phone. Daughter Betty also interested in Ham Radio; believed to be delving into the technical side of things with A.O.C.P. as No. 1 priority. Monty was heard working VK1AA. 2AKE has been holidaying in City of Plains and was heard from 2NS and 2IE. Has hopes of a.c. to home QTH in three years. Class B mod. of type 12 with 2 watts input, and Type A Mark 3 carries burden meanwhile. 2ALS is on most evenings. Has two complete stations; 6V6 to 6V6, input 6 watts, ARS receiver. Big rig uses 60 watts to 809. Has an AR7 and Bendix frequency meter also.
 Had pleasure of staying one night with 2AIR. Cecil now in West Wyalong and runs two stage rig, 6V6 to p.p. 807s, mod. 807s. AB2, receiver AR8. Nice lot of DX worked and slack shows plenty of the hard-to-work by fact of the cards displayed. 2AFV also active using ATR13 with 813 final, modulated by 811s. Receiver is 7 tube super; Windom antenna and power generated by petrol driven engine. Is mostly QRL with brother Les, 7LT.
 2OW is amongst the 7 Mc. boys using a No. 11, but believe AT5 ready for something or other. Is pre-war Ham interested mainly in c.w. 2VS at present QRL with b.c.l. work at Mudgee, relieving. Has gear operating on 50 and 144 Mc. Next tour will be Young where 2TA and 2TC are busy on 50 Mc., but little news regarding results to hand. 2PN heard occasionally on low frequencies but seems to keep to the quietness of 50 Mc. Like to hear more about you Ross. Wollongong possesses, I believe, an Amateur Radio Club and already four chappies are over the worries of A.O.C.P. 2MT is active and 2WV I believe is under way. 2OY heard for short period one night. Do believe you are likely to have some QRM from a new Ham very shortly. That's all chaps. Any news of your doing will help considerably.

Thanks for your ever-welcome items Eric, and give away those long hours of duty for, as you say, "Ben takes the lion's share."
 W5-SWL Dick Russell, of 1735 S.O. Marsalis Ave., Dallas 10, Texas, U.S.A., makes an unusual request. He is desirous of receiving QSL cards from Short Wave Listeners in other countries. We wish him well.

NEW SOUTH WALES

The March monthly meeting was held on Thursday, 26th, with John Moyle (VK2JU) in the chair, and the business was to consider the Federal Convention agenda and to advise the Division's delegate as to his voting at the Convention. The fact that all 51 items were dealt with in one evening, instead of two or three meetings, as in some previous years, was undoubtedly due to John's able chairmanship, and to the spirit of the members present. The tendency to start petty arguments on minor and irrelevant points was noticeably absent, and no doubt John left for Melbourne on the following day with a clear idea of members' views on the matters before the Convention.
 John Moyle was the N.S.W. delegate this year, as Jim Corbin, who has been our representative for several years past, was not able to undertake the task this year. Up until the time of the meeting, no one had volunteered for the position of observer, and an appeal was made to members to take a more active part in the running of the Division. As Peter Adams pointed out, the work involved in keeping the Division on an even keel has, for many years, fallen on the shoulders of a few enthusiastic members who have done yeoman service but who are growing older and, perhaps, a little tired; it is the hope of these men that younger Hams will come forward to take over the executive positions—President, Secretary, Treasurer, and Councillors. The position of Convention Delegate was the subject of remarks by both Jim Corbin and John Moyle:—"In the past, the job has been taken on by any

NORTH COAST AND TABLELANDS
 2OE building 3.5 Mc. rig for the winter, 807 p.a. 2FN home for Easter was heard on 7 Mc., gremlins took over rig during his absence. 2SH active

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

VK2AJB—G. C. Churle	R.A.A.F.
VK2BQ—F. Easton	R.A.A.F.
VK2JV—C. D. Roberts	A.M.F.
VK2VJ—V. Jalvis	R.A.A.F.
VK2YK—W. Abbott	R.A.A.F.
VK3DQ—J. D. Morris	A.M.F.
VK3HN—J. McCandish	A.M.F.
VK3IE—J. E. Mann	R.A.N.
VK3NG—N. E. Gunter	M.N.
VK3OR—M. D. Orr	R.A.A.F.
VK3OW—G. L. Templeton	R.A.A.F.
VK3PL—J. L. Colthrup	R.A.A.F.
VK3PV—R. P. Veall	A.M.F.
VK3SP—S. W. Jones	A.M.F.
VK3UW—J. A. Burrage	R.A.A.F.
VK3VE—J. E. Snaddon	R.A.A.F.
VK3DR—D. Laws	A.M.F.
VK4PR—R. Allen	R.A.A.F.
VK5AF—C. A. Ives	R.A.A.F.
VK5BW—G. Phillips	A.M.F.
VK3IE and VK5EM J. Mann	R.A.N.
VK6GR—A. H. G. Rippen	R.A.N.
VK6JG—J. E. Goddard	R.A.A.F.
VK6KS—K. Anderson	A.M.F.

The above names and details have been received by Federal Executive. Anyone knowing of any name not included on the above list or errors therein should communicate with F.E. at the earliest.

FEDERAL QSL BUREAU

RAY JONES (VK3RJ), MANAGER

Jim Austin (VK6SA) is expecting to visit Melbourne for a couple of days during the middle of May. Previous to arriving in Melbourne Jim will have spent some time in Adelaide.
 A nice card is that of RAEM/MM located aboard S.S. "George Sedov" presently located in Franz Joseph land. Among the "modest" claims of the operator Ernst Krenkel are: "Hero of the Soviet Union North Pole Expedition 1937-38," and "RAEM was the call of S.S. "Cheluskim" which was smashed by ice in the polar sea in 1934. I was there as Chief Operator and since then RAEM is my personal amateur call."

A Christmas and New Year greeting belatedly received is that from Val of CR7VA. Val is one of those rare ones who QSLs 100 per cent.

The following is repeated for the benefit of QSL Managers and others who seldom read this column. "D. A. Leslie, ex-VR2UH, is no longer QSL Manager for Fiji and is now back in New Zealand." The QSL address for Fiji is VR2SA, Mr. S. H. Mayne, Victoria Parade, Fiji. The continued use of Mr. Leslie's old address is proving embarrassing and costly to Mr. Leslie, and is delaying cards unnecessarily.

Ex-VK7CM now signs GSBUD, and VR6AA is now holidaying in the north island of New Zealand with 2L2FR until the end of March.

An echo of a par some months ago regarding non-receipt of QSLs by Jimmy Dooley, then XU3VR, comes from Leith Cotton (VK6LG) who, incidentally, has just made W.A.C. Leith claims Jimmy must have received them and concludes, "I know a lot of Hams are too dumb, lazy or lousy to collect QSLs from Bureau for long periods, and then, when answering them, mark their cards 'Pse QSL' to cover their own remissness." You have sure hit the nail on the head Leith.

A fire broke out on the S.S. "Wairuna" whilst berthed at Vancouver. Whilst no details have yet been received, it is understood that only the prompt action of one of the members of the crew averted a major disaster. 'Tis hoped Jimmy G6UB/P and his 50 Mc. and other gear escaped damage.

'Twas a pleasure to hear again from Leon Paul (VK3XO, ex-VK6LP) whose ability to handle a bug has not suffered during his absence from the air.

Each time notes get scarce up pops Eric Trebilcock BERS105, of Wynyard, Tasmania, with an interesting budget of news. Eric, who is still confined to the ranks of listeners has the receiving end of the DX game well taped, having logged 172 countries and, if working 80 hours a week doesn't prevent it, hopes to win the Receiving Section of

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mostly on 7 Mc., getting some nice c.w. DX and fixing rig for 28 Mc. 2AEY running skulls with 2CW and should be on 50 Mc. shortly. 21BS wont be long now, also interested in 50 Mc. 2WC is another prospect for 50 Mc., at moment building all band receiver. 2ASF will be active soon with mighty QRP job, has worked all VK, ZL and VR3 with 14 watts.

2JK is building new job with S13 final, heard testing on 7 Mc. and still troubled with line noise. 2UN also with new outfit, on phone shortly. 2ZX at present in VR6 and absence noted on 7 Mc. 2NY building rotary for 28 Mc. 2UF and 2X0 both on 3.5 Mc., the latter troubled with power line QRM, location power station (a.c. type). 2ZP occasional fitters on 7 Mc. 2ATS has new 40 foot "A" frame mast, 646—813 on 14 Mc. Notes to 2PA at Port Macquarie please!

NEWCASTLE AND DISTRICT

2BZ with two way work on 166 with Sydney and Singleton, congrats Dave, nice going. 2AIA

has a fine W.A.C. on 12 Mc. in 50 minutes and 101 countries confirmed post war, they are in for a DX C.C. certificate. 2ZL has the coveted W.A.S. The above two are putting the coal city on the map. 2TE has over 80 countries and looking for more. 2AGD, 2ANG, 2AGY, 2EP and 2CW snap up any DX that shows through. The boys will be forming a radio club in Newcastle shortly.

COALFIELDS AND LAKES

2KP working 14 and 28 Mc., getting set up for 50 Mc., three element rotary on 28 Mc. 2KZ still battling for a 28 Mc. W.A.S. Vermont and Delaware n.d.g. 2YO nil activity. 2MK much the same heard once on 28 Mc. 2XT and 2PZ chewing on 7 Mc. What about these beams Bill! 2ADT keeps an eye on 50 Mc., getting started on 166 and adding a few countries to his 87 post-war on 28 Mc. 2YL playing with 14 Mc. beams, on 28 and 14 Mc. and sometimes on 50 and 7 Mc. 20C heard on 28 Mc. and looking for elusive YK6 on 50 Mc. 2RU on 50 and 166 Mc. 2AMU doing nice work on 28 Mc. with fine beam. 2ARZ DXing on 14 Mc. 2EH welcome to Gosford. 2KR also known as 5000 hours Hardman. 2AIO not heard recently.

WESTERN ZONE

Conditions on 3.5 Mc. improving and by middle of winter should be good. A lot of old timers heard there nightly, including 2JC, 2WH, 2BN, 2GI, 2HC, 2CM, 2XO, 3WE and 4GG. 7 Mc. the main band for local rag chews, heard regularly are 2NS, 2H, 2IE, 2VS, 2JW and sometimes 2LZ. 14 Mc. is good for DX if you like it the hard way, battlers include 2BT, 2AMR, 2TG and 2HZ; also most of the Broken Hill gang. 28 Mc. is there for those that like DX the easy way. QRN nil, QRM little only and those active in the zone include after 20 years. 2AFO on 14 Mc. and 2LY installed inside the house. 2FI migrated to 7 Mc. 2HZ has receiver going, but oscillating in wrong spots. 2ALR makes 40 Mc. occasionally and 2AGP had a thrill working OT 2JR on 7 Mc., the sum total of their ham radio days or years is about 70 years.

SOUTHERN ZONE

2ANQ (ex-3NQ) on air with p.p. 809s and looking for c.w. contacts on 7 Mc. 2APW with 2.1 amps into zepp feeders and 100 watts on 7 Mc. 2YS is a newcomer, should be active soon. 2QE threatens to be active again, buying new gear and using feather duster. 2OJ doing shack renovations and general cleaning up, recent visitors include 2AGH, 3WQ, 3ARC, 2CP and 2AID. What about some news from Corowa? 2EG trying to complete new house and shack. 2JA located amid town's QRM, we sympathise.

The following Wagga notes from 2TH. The iron curtain is lifted and Wagga again in news. 2AID uses modified AT5, worked XE on 7 Mc., secret is in the bent mast, we are waiting for the crash!! 2EH has moved on and we hope to hear him from up Newcastle way. 2PJ congrats on a new first-class comm. ticket, now the grind is over hope to hear him. 2GE also with a modified AT5 on 3.5, but h.c.t. not tuned there (no prize). 2BW, Wagga's G.P.F. (guide, philosopher and friend), always co-ops with locals, has a nice post-war DX record too mostly on 28 Mc. 2TH in process of giving shack a new look, has a Marconi B28 and would like the loan of an instruction book—any offers? The following is his solution of the XYI problem. Roy offers a cash bonus to the YF for each new country worked, hope he never works an OX; it's worth £10. 2ANT temporarily QRT pending installation of a h.t. transformer, busy also at the Aeradio Station. 2AFM a new one to Wagga. Ron has been testing on 7 Mc., transmitter is AT5, and receiver a Bendix RA12.

VICTORIA

Members of the Victorian Division in attendance at the March general meeting were fortunate in having the pleasure of meeting Mr. Ted McCarthy (VK1AA) and Leading Telegraphist Skinner, of the Wyatt Earp which recently returned from the National Antarctic Expedition.

Mr. Ted McCarthy was called upon, after introduction, to recount some of his experiences during the expedition and after pointing out the difficulties of operating on the Amateur bands from the vessel, expressed pleasure of the contacts made. Some impressions from the scientific angle, a particular reference to icebergs and icefloes, proved of intense interest to his audience.

An interesting sidelight was a preview to members of the QSL card with which Mr. McCarthy will confirm his contacts, the card being attractively printed with the crest of the Wyatt Earp in full color and will, without doubt, be a fine record of contact with a voyage of National interest.

In the President's absence on holidays over the Easter period, Mr. Harry Kinnear (VK3KN) took the chair to another fully crowded meeting and was happy to welcome and introduce other visitors also in Mr. John Moyle (VK2JU), visiting from N.S.W., and Mr. "Luke" Lucas (VK3LL), over from S.A.

Much enthusiasm has been shown at recent meetings of suggestions re the holding of more social gatherings throughout the year and the formation of a Social Activities Committee was felt to be desirable to organise such dates. Two members, Mr. L. Moncur (3LN) and Mr. R. Henderson (3ARV), were nominated and accepted for this Committee and have power to co-opt.

Mr. Glover, reporting on T.A.C. activities, outlined the progress of the new installations to the laboratory at the Institute rooms and also put forward the invitation for willing helpers to further assist in completion of this project. It was announced by Mr. Glover also that the installation of two sets of transmitting apparatus was planned for covering other bands as well as the present frequency in use.

The QSL officer has expressed his appreciation of the co-operation of members in collating their cards before handing in for disposal as this facilitates the handling and distribution of the many hundreds received.

T.A.C. MEETING NIGHTS

It is noted that the Technical Advisory Committee of the Victorian Division of the V.I.A. hold meetings at the Institute Rooms at 191 Queen Street, Melbourne, regularly throughout the month.

All members and visitors are cordially invited and welcome to attend these meetings at which many technical discussions and demonstrations take place. Meeting nights are as follows:—

- 1st Tuesday: Practical Work.
 - 2nd Wednesday: V.H.F. Group.
 - 3rd Tuesday: T.A.C. General Meeting.
 - 4th Tuesday: Practical Work.
 - 4th Wednesday: Receiver Group.
 - 5th Tuesday: Practical Work.
- VK3WJ will announce the program for these individual meetings in forthcoming broadcasts.

T.A.C. ACTIVITIES

V.H.F. Group.—Reports on the field day, held on the 7th March, were presented and discussed. The main business of the meeting, a discussion on V.H.F. Antenna, was then proceeded with. Of particular interest were problems connected with maintaining the directiveness of a directive antenna over the whole of the frequency range of the 50 Mc. band.

T.A.C. General Meeting.—Among other business dealt with was the approval for the purchase of the following books for addition to the lending library: Frequency Modulation Engineering—Tibbs. Radio Tube Vade Mecum—Brans.

The Librarian receives regularly radio periodicals published in foreign languages. Much of the information in these journals would be suitable for re-publication in "Amateur Radio." Those Amateurs who have sufficient knowledge of Dutch, Spanish, Italian or other languages and could prepare brief abstracts of technical or general articles should, if available for this work, contact T.A.O.

Practical work at present being carried out by T.A.C. includes the construction of a Laboratory Workbench with facilities for a wide range of tests. Members willing to assist in this work will be very welcome.

EASTERN ZONE

The Eastern Zone hook-up is now on a spot frequency of 3450 Kc. on Sundays at 2000 hours, so Eastern Zone stations roll up and make it still bigger. 3WE is punching nearly on 100 watts. Bill says that now the cold weather is approaching, he is going remote control by the fireside for the coming months. 3QZ is very busy settling down in

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his new QTH; has been on from the main rig, 3SS putting out f.b. sigs on 7 and 3.5 Mc. since putting up new sky wire. 3AJL on holidays, and working portable with converted PS6. Jack puts out f.b. sigs. 3AHK is QRL on farm, but does not keep him from the DX bug, nice work Ossie.

3LV works ZL's with his low power. Len also does quite a lot of listening on 50 Mc. SPR puts out S8 and 9 sigs with a Type A Mark III. cathode mod. with a 807. Ron busy on 4 Mc. rig. 3AKO put in his first appearance in the hook-up; keep it up Martin. 3ABP very active on 3.5 Mc., and has got a receiver going on 50 Mc. 3CI has been very active on 50 Mc. Syd goes portable and frequently works VKTs. 3US and 3VL are both very active on the 50 Mc. band. Both Owen and Rex are getting some nice DX on 28 Mc. 3HZ although very QRL, it does not stop him putting out f.b. sigs on 50 Mc. Murray also manages to get into the Zone hook-up. 3DI active on 50 Mc. also. Jim has just erected a 3 element beam for that band.

CENTRAL WESTERN ZONE

Had a very interesting letter from 3FA, a week or two ago. Brian had been reported on approximately 4220 Kc. around Melbourne way, and as he operated on 14 Mc. only at the time, smelt a rat somewhere; the trouble turned out to be a 1 1/2 wave length 7 Mc. receiving antenna which was rather close to the transmitting antenna. The feeders had broken off close during a windy spell and left the wire free. The wire resonated at approximately the third overtone of the 14 Mc. rig and went off merrily on its own. Brian found it was absorbing about half his power, and at the same time he was not getting out as usual on 14 Mc. The moral of this of course is for the boys with multi-antenna set-ups to be careful, as nobody was more surprised than 3FA when I rang him up.

Round the Zone there has been an outbreak of v.f.o.-itis. 3AKP and 3DP have both just installed v.f.o.'s, and as Jim remarked, ceased to be rock-bound; just stay inside the band boys. 3DP also has a minor headache with a AR8 receiver just to hand, spent four hours the other night re-wiring the filaments for 12 volt operation. 3HL is still keeping at his wind-mill tower for a 14 Mc. beam; the tower is already and also the fixings for the antenna. Allan's main trouble is now family QRM as to where the tower will stand.

Like 3YW. 3ATR was bitten by 50 Mc. wogs. He has made up a 954, 6A07, 954 converter; heard nothing, put in 28 Mc. coils, and heard lots, so now is putting together a 28 Mc. transmitter and V beam. Trev is also moving the gear out to the farm to get away from the line noises in Warracknabeal.

The hook-up on Sunday morning, 11th April, went off as well as 7 Mc. would permit. We were pleased to welcome VK3XG into the hook-up for the first time, and hope to hear him quite often. Ben also reported a newcomer to the Zone, 3ARM, of Serviceton, who hopes to be going at least in time for the next Zone hook-up. We now have a station at our extreme Western boundary, and will be pleased to contact you o.m. Another newcomer was VK3WQ, from Melbourne, who had a busy time.

The gang generally are asked to keep in touch with their secretary as Melbourne is planning a special distribution of disposal items not normally on the screws, so keep in touch claps. Don't forget the next hook-up on Sunday, 9th May, 10 a.m., 7050 Kc. In case the band is a washout, listen for 3YW on 3.5 Mc., it's always good down there. 3YW's telephone number for information (if any) is Stawell 321 during working hours, otherwise 249.

QUEENSLAND

At the Council meeting held on the 10th April, the question of Student Classes was raised by Mr. Stevens, the Associate Members' representative, and it was decided that the time was ripe for the re-introduction of classes. The position as has been explained before, is dependent on the Institute acquiring a permanent room, and in this direction a gleam of hope has arisen, and next month we hope to be able to tell you the good news—we hope. In any case, it is felt that Code Classes can be managed under existing conditions, and accordingly they will be started the first Friday after the next general meeting which falls on the 30th April. Theory instruction will be instituted as soon as conditions permit, and in this connection we would be pleased to hear from any members willing to undertake the position of Instructor. The position will be advertised in due course, but there may be someone in our ranks who would be happy to take the job on. The task is NOT a voluntary one, if that's any incentive!

The new Council has settled down to its job with a smoothness that augurs well for the future. Finance is in the capable hands of Harold Hansen (4SV), who, by reason of the thrift already shown, is surely descended from that thrifty race the Scots—or am I sticking my neck out? The only member of the gang who is somewhat unhappy about his job is the Librarian. Bill (4WP) has very good reasons to be this way however, as the co-operation from the majority of members has been conspicuous by its absence. The Zone system of distribution of magazines has been a dismal failure, despite the conscientious efforts of the Zone managers concerned. When, and only when, the books already out are returned, the scheme will start afresh. We have no desire to conceal the fact that the library is at present not worth the effort and if the hoped-for response is not forthcoming the whole caboose will be abolished, despite the screams from the inevitable minority, who are probably the offenders. More plain talk—I'll lose my neck yet, but there it is fellows, send them back or else.

The disposals equipment secured for members at the sale held in March has been moving off fairly rapidly, the accent being on Command receivers, notably of 6-9 Mc. range, and also on the same line of transmitters. One particularly good buy in the opinion of your scribe is the ARR2 receiver, which, although fairly useless in itself, contains an assortment of really good tubes, namely three 6AK5s and half a dozen 9001s and a 12AG, besides a useful handful of resistors, etc., which contrary to most of the aircraft gear, can be lifted out without doing gymnastics with the soldering iron. At the time of writing, tuning units and Command transmitters are still in fair supply.

Delegate 4FN returned from the Convention in one piece, despite the fact that swords were crossed once or twice between Frank and the big bad wolves in the South. A special meeting of Council will deal with the reams of literature which Frank has brought back from the Conference table. Council sat until 11.15 p.m. last Friday dealing with routine business and no one then felt very enthusiastic about anything starting with "C" excepting possibly coffee, so a special meeting was convened for the following Friday.

In common with the sentiment in other Divisions, Queensland was surprised to learn of the extinction of "Grenlin," and widespread approval has already been expressed regarding his re-appearance. "Grenlin" might do well to pay particular attention to the habit of some fellows in using their calls as an aid to business ends—sticky ends we hope to the offenders. You have probably seen the letter from the R.I. on the last page of April "A.R." If not, have a look right now. It's not only yourself that might get into trouble, but the practice is bringing discredit on Hams in general.

Last year some bright spark (and we're not being funny) thought of the idea that the VK4 Division should run a stall or Exhibit at the Annual Royal National Show. Time was too short to do anything about it then, and the spark was extinguished, so we thought, but it's been blown into life again—some spark! Council thus proceeded to try and kindle the flame. I hereby place the old neck on the block for the final blow, and blatantly announce that it can't be did! To revert to the style befitting of a Sub-Editor—Ahem—it is a fact that the question was explored very thoroughly, and it became obvious after hearing of the experiences and difficulties befalling business enterprises with the same idea, that it was not practical for this Division to run an Exhibit, much as we would wish to. Rent is colossal, electrical installations cost lots of dough, and then there's the small matter of staff. The only way would be to know somebody, and we don't know a soul.

The Field Day bug has bitten a few of the boys and what with balmy winter sunshine and all that we thought it was about time we had another. When 144 Mc. poked its head up it looked as good an excuse as any, so the event was set down for the first week-end in May, when the band becomes officially ours. Although a v.h.f. set-up was at first proposed (it's a funny thing, but Council always seems to consist of v.h.f. blokes), the thing has been widened in scope to include the "d.c." bands as well. For the benefit of the ignorant, "d.c." bands are low frequency bands. Details are pointless as the show will be over by the time you read this, but trophies of some sort will be awarded for the best performances on 50, 144 and the combined low-frequency bands. Times of operation are to be 1600 hours Saturday, 1st May, to 1600 hours, 2nd May. If the wide interest already shown is any criterion, everyone will have a grand time. Amongst those going out will be 4DK (4CU) to Mt. Kynock, Toowoomba; 4KP to Pt.

Danger or Springbrook, whilst 4ZU and 4XG are going to the Maleny Range.

The gang are quite enthusiastic in their comments on the new Membership and Contest Certificates, samples of which have arrived. Congratulations to those responsible for the adoption of such a fine design and selection of colour. We feel sure you will all be proud to have these for wall paper, and at the moment all we can tell you is that enough have been printed to cater for all requirements, and distribution is proceeding.

SOUTH AUSTRALIA

The notes this month are prefaced with an apology for their lack of quality and quantity. The reason being that I have been on annual leave and naturally left the notes until the last day or so. All would have been well, however, had not fate

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conspired to send to Adelaide and its suburbs a first-class hurricane, something unprecedented in the history of South Australia. The consequent damage to amateur shacks, equipment, aeri-als, etc., to say nothing of the interruptions to transport, communications, and public utilities has left everybody feeling like a limp rag. The seafront naturally had the full strength of the blow, and we here at Henley Beach have had no electric light for three nights. I have been washed out of my shack, and believe it or not, in this year of our Lord 1948, I am attempting to write these notes beneath the feeble glimmer of a hurricane lamp.

To fill my cup of bitterness to the brim, I have just been informed that Mrs. Barbier (the XYL of 5MD) is looking for my blood for writing a paragraph regarding the dirty dishes in the sink upon her return from hospital. This has cut me to the quick and I hasten to apologise, and to say publicly that I have checked up on my source of information and I find that the said paragraph was indeed a libel, and I offer my sincere apologies. I find that the kitchen sink was definitely not full of dirty dishes as there was still room for a cup and saucer! Having now, I feel sure, been restored to Mrs. Barbier's good books by my abject apology, I can attempt the compilation of these notes with an easy conscience, so here goes.

The monthly general meeting for April was held at 17 Waymouth Street to a capacity gathering when Mr. W. O. Gibberd gave a very interesting and instructive lecture on "Carrier Transmission." The lecture was very well received and a vote of thanks, proposed by Dr. Ross Adey (5AJ), was received with acclamation by all present. Among the visitors were Messrs. Opie, George, Turner, R. Torrington (3TJ), J. D. Nourse (2DQ), and Graham Pitts (5GP).

Ross Harris (5FL) spoke on disposal matters and Hal Austin (5AW) discussed the recent conference held in Melbourne. The meeting was then closed with everybody having spent an interesting evening.

Reg Harris (6RR), who has been handling 5WI so capably, tendered his resignation from 5WI which was accepted with regret, and in future Hal Austin (5AW) will be in charge of the W.I.A. Sunday broadcasts from his QTH at Rose Park.

Reports of the hurricane damage to aeri-als continue to come in and the latest list shows that 5MO, 5RX, 5RR, 5XO, 5LD, 5AJ and 5LW are a few of the Hams minus a skywire.

A Naval Frigate, the "Barcoo" was washed ashore during the aforementioned hurricane and finished up a mile or so from the QTH of 5PS. I wish to deny the rumour started by 5LW that GPS was chased up the beach for a couple of miles by an irate signalman from the "Barcoo" because he tried to talk the said signalman into selling the radio gear aboard as disposal equipment.

Noticed that Cec Baseby (5BZ) was absent from the general meeting, apparently was stoking up the water cooled job preparatory for a session of DX. 'Tis rumoured that he has joined the ranks of the truck drivers on the road between Melbourne and Adelaide and is known as "Battler" Baseby to his conferees of the road. With a smile on his lips and a curse in his heart, he lets nothing pass him and always gets his truck in on time.

George Ramsay (5GD) is reported on the sick list with a very heavy cold, in fact at one period complications were feared. Is on the road to recovery now I hear, and probably next time he adjusts his beam in the cold chilly air he will remember this bout of sickness!

Joe McAllister's enthusiasm for the W.I.A. led him to rise at 4 a.m. on Sunday, 14th March, with the intention of visiting the local Hams at Kadina and passing on the Institute good wishes. Leaving at 5.15 a.m. Joe, the XYL and the harmonics had a very pleasant trip in the brisk morning, and as there was no desperate hurry, the time of arrival was set so as to hear the 5WI broadcast. The first call was to Darcy Hancock (5RJ), but a notice on the back door "no milk today thanks" told its own story. Anyway, after making a few enquiries, the abode of Les Wallbridge (5UX) was found and fortunately just in time to catch 5UX, plus Darcy himself and his XYL about to depart in the trusty van. Joe was right royally welcomed and over a cup of tea it was suggested that as there was a bit of a do over at Crystal Brook, what about all going over and meeting the other Hams. Having listened on the "5UX" receiver and not heard any VK5 signals, the party started for Crystal Brook.

The first indication of "OB" was the huge aerial mast of 5CK (one of those common broadcasting stations). Passing through the town the party came to the creek bed, near the showgrounds and found a party of Hams gathered, including Len Muller (5VM), C. A. Doddridge (5OD), H. Hodgson (5AP), and quite a number of unidentified personalities. What with YLs, XYLs, harmonics, and visitors it was a grand gathering, and lunch took a long time because it is hard to talk and eat too. Joe passed on all the Adelaide gossip, and made a note of all the country doings (for which I thank him). Len Muller (5VM) took a photo of the gathering with his huge camera (tripod, red cloth and all) giving quite a treader act with the red cloth, with the evident idea of making the gang look pleased. How successful he was we will only know if we see a photo, so what about it Len?

The next visit was to 5OK to look over the various interesting pieces of equipment installed there. Then the party went to the shack of 5VM and Len has a fine set-up, rack and panel style, but what intrigued everybody so much was a complete shower over the rig. Apparently Len was in such a hurry to get on the air that he forget to dismantle the bathroom. Anyway it makes an extra good water cooling system (5BZ please note). The day was now drawing to a close and Joe was amazed to note how the time had flown. A little trouble with the petrol feed delayed the departure, but some soap and a little rag soon fixed it up OK. The lights of the city were sighted about 12.30 a.m. and some 21 hours had passed by in an incredible short time. Joe and his XYL, plus the harmonics, wish to thank all the folk who helped to make the day such a happy one, and they all hope that it will not be long before they all meet again. The fact that Joe set out to do a trip of 180 miles and finished up doing 260 miles speaks for itself. The benefit to the W.I.A. was enormous, as it shows the country member that he means as much to the Institute as anybody else, and Joe is to be congratulated on his foresight and enthusiasm.

A new receiver is under construction at 5RJ although if the conditions are always as bad as they were on 14th March, more than a new receiver will be wanted to pick up any VK5 signals. Stop Press—According to reliable information two or three magnetic storms in parallel were centred around Kadina that day. No wonder conditions were bad.

Have heard a rumour that Roy Cook (5AC) is due back on the air shortly. Roy is one of the real old-timers, and we all hope that the rumour is correct. Haven't seen you at the meetings lately o.m., what about it?

5FL has a new c.r.o. hooked on to his receiver and this, plus his Bendix frequency meter, enables him to hold all the trump cards when it comes to honest reports, etc. Some of the Hams take the advice well and others don't. The don'ts are passing rude remarks about the 5FL back wave. Personally I am neutral.

No doubt about these school teachers, everything must be so exact, or else. Heard 5BY and 5XU in contact the other night and after Dougal had given Gordon his report three times, Gordon asked him again and Dougal finished up spelling it, SEVEN. Then and then only was 5XU satisfied.

The Police Commissioner has acknowledged by letter his appreciation of the splendid assistance rendered by Amateur Radio as a means of communication during the recent bushfires in S.A. Ross Kelly (5LW) was the recipient of the letter (his second by the way) but Ham Radio also secured

some useful publicity, and our thanks are due to Ross and "Doc" (5MD) for their fine job.

5BQ is in the process of constructing a 144 Mc. transceiver and as his QTH is Somerton, he will be welcomed by the northern suburban boys as a choice bit of DX.

5LR is looking for a cheap windmill tower so as to be able to lift his present temporary 28 Mc. signal squitter higher in the air. It is doing such a good job almost on the ground that Jack is wondering just how many db. points above S9 he will get when it does rise into the air. Anybody able to give some information as to the availability of a cheap tower

It is not often that a nickname becomes a fact, but "Pop" Deane is the exception that proves the rule. The name "Pop" came from the fact that Launce (5LD) once upon a time had a voice as low

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in pitch as that noted film character "Popeye" the sailor man. The arrival of a harmonic (a bonny bouncing boy) to the 5LD domain makes the "Pop" quite in order. Congratulations to Mr. and Mrs. Deane. By the way it was just a coincidence that "Pop" parked his car next to 5XU at the recent field day. (Sorry Gordon but it was too good to let pass.)

You all thought that I had forgotten "Doc" didn't you? Well I haven't. I believe that he is using tooth-brush handles for feeder spreaders. Take my advice and lock your bathroom doors should he visit you, and don't fall for that sales talk he will give you about that "so and so look," "such and such smile," it is only meant to get you to discard your tooth-brush in favour of a new one, thereby permitting him to "bite" you for the old one.

General opinion regarding the "Gremlin" in VK5 is that whilst it is the business entirely of the VK3 Council to handle the matter as they think fit, it is generally thought that a mistake has been made. "Gremlin" was doing a good job and it was better that he remained anonymous and the opinion of a few thin-skinned Hams should not be allowed to sway the VK3 Council's better judgment. With the present influx of "funny" boys into Amateur Radio, something in the nature of "Gremlin" is required.

To anyone who has attended any meetings or club gatherings where amateurs get together and "rag chew" quite informally, it is becoming increasingly noticeable that the present methods existing at W.L.A. meetings are falling into disfavour. I refer to the "introduction," "lecture," "general business," and then a few minutes for a get together before leaving for home. Whether we like it or not, the audience at a W.L.A. meeting is divided into two classes. Those who know as much about the subject as the lecturer and therefore are not interested and those who do not understand the lecturer and therefore are also not interested. The remaining few who are interested are in such a minority that they do not count. This does not hold for all lectures, now and again we get one out of the box and everyone is more than interested, but it is becoming an obvious fact that if we are to hold members' interest at W.L.A. meetings we must give them more time to have an informal rag chew, more time to get together and make each others acquaintance, in short, make the meeting less like a gathering of Bachelors of Radio Engineering (5LW please note) and more like the gatherings which take place in the average ham shack.

What's that you say, how can we do it? Don't ask me brother, I only write the notes! Seriously though, gang, haven't I got "something." If you don't think so tell me, I can take it, but if you do think so, then get up on your feet and tell Council members at the next general meeting. Council is only in office to carry out the wishes of members, but if you don't state your wishes on the floor of the meeting how can the Council carry them out. They're not mind readers as yet.

I had the pleasure this month of attending the inaugural meeting of the Holdfast Bay Radio Club, held at the Glenelg Town Hall. When I first arrived at the Town Hall there was a steady stream of people all making for upstairs, and I followed them like a lamb, mentally telling myself that these Glenelg Amateurs certainly knew how to attract a crowd. Imagine my surprise upon arriving upstairs to find that I had come upon an anti-communist meeting about to commence. Somewhat embarrassed, I crept downstairs, followed by about 700 pairs of eyes all convinced that one "commo" at least had the "wind up." I retired to the rear of the building and there came upon a chap with a "QST" in his hand also looking a bit bewildered. He introduced himself to me as 5RS and said amiably, "I say old man you're Doc Barbier aren't you?" The look of homicidal mania that appeared on my face apparently staggered him, because he stepped back a few paces and said in an apologetic tone of voice, "I'm sorry old man, but you do look a bit like him." In a tone of voice that I use when handling raging lions, fierce tigers or

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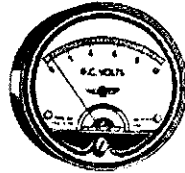
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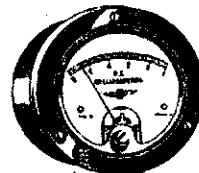
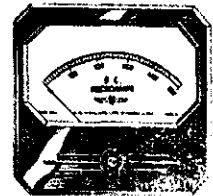
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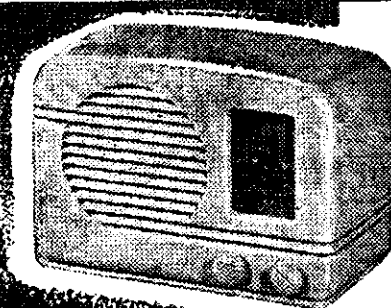
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perhaps my wife, I introduced myself and was somewhat mollified to have him say, "Oh yes, I know you, you're the old buffer who writes that tripe for the Magazine." I regained my lost temper at this charming flattery and we both adjourned to the room at the rear of the hall, which by now was a blaze of light.

Among those present I recognised were 5CB, 5AF, 5JE, 5RS, 5FX, 5BW, 5WK, 5FR, 5ZR, 5XO and 5PS. Charlie Brimble (5CB) was elected President and Ted Cawthron (5JE) was Secretary. Being the first meeting of the Club naturally a good deal of preliminary business had to be completed, and when I left at 10.15 p.m. to catch a bus nothing definite had been arrived at. One thing however stood out, and that was that the club was not to be a break away from the W.I.A., but was purely an endeavour on the part of an enthusiastic gang of Hams to try and give to Amateurs as a whole a place to meet informally, form discussion groups, help would-be Hams along the hard road to a ticket, have a little social gathering occasionally, and all in all provide that friendly atmosphere which they all definitely agreed was unfortunately lacking at a W.I.A. monthly meeting.

I took a little of their time to explain that whilst I was in sympathy with their aims, it was extremely difficult to achieve the results they were seeking at a W.I.A. meeting. Nevertheless I wished them luck and promised that any publicity or help that the W.I.A. could give, would be willingly offered and if enthusiasm counts for anything, then the Holdfast Bay Radio Club is in for a very happy and successful time.

WESTERN AUSTRALIA

The April meeting was held at the Builders' Exchange, 86 St. George's Terrace, on the 12th. There were over 60 members present and a cordial welcome was extended to two new members, VK6AW and VK6NW. G3BMV was a special visitor.

Mr. G. Moss gave information on the W.I.A. Convention held during Easter in VK3. All but two of the VK3 suggestions were approved. We are very grateful to VK6GM, for the manner in which he represented the VK6 Division and hope to see him occupy the same position again.

"Gremlin" was discussed to some measure by the meeting. Such a division of opinion existed that VK6KW suggested a poll be made of VK6 members as to the general feeling of Amateurs in this State, and to convey this view to Federal Council. The motion was approved and the outcome will be known by the next meeting in May.

A transmitter has been bought by the Division and will be put into commission as VK6W1 to do the W.I.A. broadcasts on Saturdays and Sundays. Its installation will be at the QTH of a Council member who will make the broadcast, and so make his own rig quite independent, and re-builds will have no time restrictions.

At the conclusion of general business, Mr. W. Peterson (6LW) gave some interesting facts and figures on v.h.f. antennae. His remarks dealt mainly with corner-reflectors, their advantages and adaptability to v.h.f. equipment—particularly the SCR522.

Mr. Coxon (6AG) gave an instructive demonstration on the loading effect of parasitic elements on the driven element in multi-element directive antenna arrays. This demonstration was the ideal "follow-on" after 6LW's more theoretical approach to the subject.

Mr. Hugo (6KW) and Mr. Rumble (6RU) went to considerable trouble to demonstrate the SCR522 modified for use on the new 144 Mc. band. The two complete units were set up in the room, and a f.b. two-way QSO was the result. Many 522 owners were interested in this informative demo. It is a pity 6KW burned out that new meter!

Mention was made on the commendable effort made by 6FA in working regular skeds with the Heard Island Expedition—Antarctica. VK3ACD has been heard on 7 Mc. but his five watts are very often badly QRM'd. VK3OY hopes to be running 50 watts input before long now.

6WT has taken over the duties of Sub-Editor for "A.R." and would appreciate ideas for the compiling of these notes.

PERSONALITIES

6FA heads the list with his contacts with Heard Island Expedition. Nice work Dick. 6GA is heard talking about 28 Mc. beams. All the gear is on the ground and waiting to be tossed into the air. 6YZ, another member of the Carlisle gang, is running close on 100 watts and uses his v.t.o. carefully. 6RS has big ideas in mind, including some DX demonstrations from 6DJ who shows anyone just how easy it is to work c.w. DX. 6SA will be visiting VK3 and VK5 soon and will be "full bottle" when he returns. What's the latest Jim? 6SN has been quiet lately, but has worked some nice 14 Mc. phone DX. Want a new antenna AH? 6RU has not had the rig on the air for a whole

week. What's happened Jim? 6JW brought VK2VC around the shacks to show them off. Vin likes our weather better! 6MY is on holidays but we heard a signal 30 db. over S9 last Sunday. What is it Mal? 6AG has disposed of the W.I.A. SCR522s and did some f.b. work with circuit diagrams. Wally is glad the Class "C" Wavemeters have their circuits under the lid. 6ND has perked up the rig and she sounds very nice now Neville. That trip to Geraldton must have done it.

6WZ, we haven't heard Harry lately. His new Club must be keeping him busy up there. 6EL heard of a week-end of 7 Mc. On other bands it's only the DX stations that hear Ernie. 6CN with the "Geraldton Kilowatt" (6V6 p.a.) is coming to Perth on a holiday with 6GL. Will be looking forward to meeting you Cyril. 6WU has got the idea of thimble antennae and works Chagos Islands just to show it works. How many countries now Ray? 6BB is formulating antenna ideas and we hope to hear Allan more often before long. 6RT, have not heard Len for ages. What's cooking Len? 6FB at Mullawa still persevering to work Interstate on 50 Mc.

6DX back on the job again after a visit to VK3. 6FD is heard more frequently again now. Joe must have been too shy to do much operating while 6DX was away. 6WG and 6FT heard regularly in Perth, but they don't say much about their activities down there in Albany. 6CM works nice DX on 28 Mc. It must be getting over the back fence Bill. 6FL and 6HL work those new South Americans easily. Shows what good beams can do. 6WH still has the usual f.b. signal on 7 Mc. Ted is thinking about 50 Mc. too, and wills 14 and 28 Mc. to the DX hounds.

6AK hasn't been heard lately. Maybe the portable is going rack and panel style.

DX OF MARCH BY VK6RU

Both bands during the past month have settled down to more consistent habits and on the whole 28 Mc. has been better than the few preceding months have shown. 14 Mc. was somewhat spasmodic later in the month, but nevertheless some good QSOs resulted.

With winter near at hand, daylight operation on 28 Mc. is more evident, particularly close skip operation, and it's nothing to hear the VK2s, VK3s, etc., romping in up to as late as 1900 hours daily and later.

28 Mc. Phone, Europe.—This continent as usual has provided most of the DX and usually the Gs have been most dependable and are always there at the right time. The number worked from the old country being too numerous to mention. The rest of the Europeans worked were GM2YA, 3XB, Scotland; GW4CC, 2RH, Wales; I1HV, 1BI, Italy; SM3ZF, 6VW, 5PR, 5PL, Sweden; E18J, Eire; F8PA, 8AT, France; ZB1AC, Malta; PA0FB, 000, 0CB, Holland; OH2QF, Finland; LA4B, Norway; ON4VU, 4BG, Belgium.

Africa.—The ZS signals have been in the majority amongst the Africans coming through and quite a few calls have been heard and worked this season. Some of these boys, who like getting up early on Sunday mornings their time, have been worked from here at 1300 hours (0700 South African time). The Union boys have also had a good time this last month working ZLs—their hardest country to work—just like South America from VK6I VQ8PYE, Tanganyika; M3ZJ (ex-16ZJ and latterly M16ZJ) has put in an appearance and is very consistent; ZB1JH, 1JB, Southern Rhodesia, were two new ones added to my ZEs; ST2CH, Khartoum, was the only North African worked. It is believed that ZD4AH, Gold Coast, is more consistent on 28 Mc. now but so far hasn't been located.

Asia.—One item of interest to hand is that Pakistan now has its own prefix, that being AP, and a few of these fellows are heard amongst the host of European signals. AP2D (ex-VU2QV) wishes his 73 passed on to all VK6s he had worked under the call of VU2QV. AR5AB, in Lebanon, on 28.5 Mc., is quite a good signal most week-ends—he QSLs every contact as I have three from him so far. HLLAQ was an interesting QSO from Korea. Apart from a number of Js worked, XZ2HN (Burma) was the only other contact.

North America.—With the W-VE phone test finishing in March, one didn't have to call CQ too often and quite a number were worked. The Canadians being VE7ACV, 7EL, 7NV, 6GI, 6BBI—the sixth district is very seldom heard here for some reason or other.

South America.—During Easter some nice signals were heard and worked; a few of them with S9 signals and no flutter. RC1FG, 1EM, 2OL, Ecuador, the former and latter being excellent QSOs. HK5OE, Colombia; YV1AY, Venezuela, being the other two countries worked.

Central America.—YN1EP and TG9JK in Nicaragua and Guatemala respectively were the only contacts with this area.

Oceania.—The ZLs have for most of the month had signals like locals in VK6 from early morning

until late afternoon and many new QSOs have been made together with many old friends from this time last year. Two Hawaiians were worked in KH6LD and W5LKW/KH6.

14 Mc. Phone, Europe.—A few occasions late at night have produced some interesting QSOs with this continent, and also of an early morning quite a few stations have put in good signals. D4AYO, Germany, was one of the strongest signals heard this season and he made a really good contact. OZ5BW, Denmark; I1SZ, Italy (worked 0630 one morning); UB5KAG in Kiev, Ukraine, was my first Russian worked on phone and proved interesting; F3OC, France; ON4BG, Belgium; D2IU, British Zone in Germany, were the remainder worked.

Africa.—A few ZSs have put in an appearance in the later evenings; ZSSF providing a new country—I've been looking for a ZS3 for two years. ZS6DF, a VL operator, made a very interesting QSO. Others from this continent included YQ4KTH, Kenya; ZB2JK, Southern Rhodesia; ET3AE, Ethiopia; VQ3AE, Mauritius, and VQ3AB, Chagos Island (another welcome new country).

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CORRESPONDENCE

"GREMLIN"

Letters in reference to "Gremlin" expressing their desire for his continuance have been received from W. Burford (VK5PB), W. J. Hartley, J. Coulter (VK5JD), J. G. Halyday (VK4HZ), V. H. Wilson (VK2YW), F. H. Doherty (VK3XE), D. B. Knock (VK2NO), B. Ferguson (VK3FN).

Box 52, Leongatha.

Editor, "A.R."

It is with pleasure that I note that "Gremlin" is returning to "A.R." and it is to be hoped that his remarks in future issues will have the desired effect of clearing up some of the rotten signs and operating heard on the "Ham" bands, particularly 7 Mc.

The letter of Don Knock (VK2NO) in the April issue is worthy of consideration by every Ham in VK. Every evening one can hear nothing but bedlam on this band (7 Mc.) and it is time something was done about it. I think if phone was prohibited on this band after 1900 hours, either by regulation or as suggested by VK2NO, a gentlemen's agreement, plenty of good contacts could be made on c.w.

For those who must rag chew to their neighbours on phone, and in addition put the XYL and all the family on, why not use 50 Mc.? This band appears to be excellent for local QSOs, while the 3.5 Mc. band could also be used. As one who uses the 3.5 Mc. band regularly, I can state that 5 to 10 watts is sufficient for Interstate and ZL contacts. B.C.L. QRM can be cut out with efficient adjustment of the gear with low power. Here is hoping for less QRM on 7 Mc. and more use being made of 50 and 3.5 Mc. bands.

Before I conclude may I make one suggestion for the Mag, and that is that it be of smaller size with more pages. The same size as "QST."

—W. R. JARDINE, VK3PR.

XZ2DA IS NOW G3DDN

15 Eynesbury Ave., Lower Mitcham, S.A.

Editor, "A.R."

The majority of VK Amateurs who were active on 28 Mc. during 1946/7 would, I think, have made contact with Basil Tait, XZ2DA. Basil returned to England some months ago, and in a letter received from him he advises me that he has been demobbed from the R.A.F. and is now licenced as G3DDN. He is operating for the time being on c.w. only, on frequencies of 14,020, 14,040, 14,080, 28,040, 28,080 and 28,160 Mc. He is very anxious to make contact with some of his VK friends, and has asked me to give all possible publicity to the above.

—I. THOMAS, VK5IT.

are to be screened. Unfortunately, time in this instance is too short for us to advise all members. This again reminds us of the benefits derived from meetings.

My knowledge of the individual doings are practically nil owing to my visit to Hobart. However I have heard 7RK on the air using his new Franklin v.f.o. and it certainly sounds as though Ray has produced the goods. Also saw 7BQ in the warehouse today so I'll have to make a call on Len and see what's coming up. 7GD was lucky enough to snag VK1AA while Ted was at Macquarie Island. I also QSOed Ted and when he gave me his location I went to the door of the shack and waved to him. I'm afraid this concludes the doings for this month, however if any member not mentioned will advise me as to when he is likely to have a bottle in the cupboard, I will definitely arrange a personal contact so that said member may receive full publicity in due course.

TEMPLATE FOR METER AND SOCKET HOLES

A handy template for setting up a circle cutter is suggested. Each time a hole is cut in prestwood or metal for mounting a large diameter part, such as a socket, meter or transformer, the circle removed from the material should be labelled and filed for future reference. A collection of metal and composition circles is thus soon obtained, from which one corresponding to the part to be mounted may be selected. In order to adjust the radius of the circle cutter, the circle is then slipped on the drill point of the cutter, and the tool is fitted to the edge of the circle and set. In this way, the time usually spent in setting up temporarily, and cutting trial holes is saved.—QST, June, 1938,

Asia.—There are still plenty of Asiatics around with the beam turned north particularly VS1, VS2, C, J, VU, XZ, etc. Three of note worked were ZC6JM, Palestine; AP4A, Pakistan, and VS0ET, Oman, on the South Eastern portion of the Arabian Peninsula.

North America.—We are getting more and more reliable during early and late evenings and during their recent contest many numbers were swapped during one week-end. A few Canadians were heard but none worked.

South America.—Only one contact—YV5AY, Venezuela.

Central America.—These chaps have been rare lately and the only two heard were both worked. XE1CQ, Mexico, and CO2BM, Cuba.

TASMANIA

Here is Tasmania once again with a summary of the doings for the last month or so. The April meeting was well attended and the report of our Convention delegate (7BI) was received. Apparently the aforesaid conference was almost a marathon effort of chin wagging, however plenty of good work seems to have been accomplished.

Another field day is set down for the end of April and if the last muster is any indication it should be an f.b. affair. 7XA is scheduled to hide the transmitter. This will be the last field day for the season.

Now for some personalities. 7YY (Bill Watson) has departed from this fair isle for a warmer climate, to wit Wewak and was presented with a suitably inscribed pipe by this Division. We all look forward to hearing him back on the air under the call of 9YY. 7BI has had his receiver in bits to incorporate band switching on a couple of bands. Had a look at 7AF the other night, he has a shack full of nice looking gear, floor racks and all the trimmings. 7SJ puts out some nice phone mainly on 7 Mc. 7RI and 7RB in the northern end of the island come in down here with plenty of punch and seem to be working plenty on 7 Mc. Heavens knows how with the mess that is on 7 Mc. these days.

7CW and 7NC are mostly on the higher frequencies, they must have patience, those guys, waiting for 50 Mc. stuff to poke its way through a hole in the jolly old ether. Col Wright (7LZ), our northern councillor has been in Hobart for a week or so and was present at our last Council meeting and general meeting. The Council meeting by the way, lasted from 8 until 12 p.m. with 7BI holding the floor most of the time—must try and get him a nomination for the next parliamentary election.

We understand that 7LL, who is at present in Melbourne, has been put under the dog act as far as radio is concerned for the duration of his stay. What a sentence! Have heard a couple of new call signs in VK7 lately, must find out the names of the owners. The Institute in VK7 is going ahead by leaps and bounds, and it is hoped to bring the membership to 100 before the end of the current year. Now what about some of these call signs that are listed, yet one never hears? Well you chaps, how about a squeak out of your transmitters now and again?

The local A.O.C.P. class has about a dozen starters this year and all are keen, so it looks as though the QRM in Hobart is going to be something to cope with in the future—still, the more the merrier.

VK3PD, working portable in Hobart, seems to get among them on 7 Mc. and boy can that guy talk! On 7 Mc. one hears 7DW and 7LJ and a few more regular c.w. men, and if you chaps don't happen to know, more keys can be bought quite cheaply ex-army disposals.

NORTHERN ZONE

It was fortunate that 7LZ should be in Hobart at the time of the Council and general meetings particularly so as our able (and willing) Secretary had just returned from the annual Convention. A general outline of this Convention will be conveyed to all members in due course, possibly even before these notes are read, however, should any more information be desired by any member from this Zone, I will be only to glad to give them any more details if it is possible.

This again shows the advisability of having a periodical get-together to discuss items of mutual interest and I think that if enough interest were shown by individual members a meeting night—possibly once a month—could be arranged.

Mr. C. Cullinan of 7EX, an old Ham and a member of the I.R.E., has now made arrangements with their secretary whereas when any subject of interest to Amateurs is to be discussed at their meetings, this Zone will receive an invitation through our Councillor to attend such meetings. The first of these meetings to which we are invited takes the form of a picture night at which four films on television

THE MAGAZINE

P.O. Box 127, Geraldton, W.A.

Editor, "A.R."

Because I feel strongly about things I find myself, every now and again, sticking my neck out. And I feel an attack coming on right now.

First of all, the material and make-up of our Mag. Mostly f.b.—but inclined to be too abstruse at times. Articles about "making over" disposals equipment and about new overseas developments, practical designs of antennae, etc., are just what the doctor ordered. Those who want the pages of maths. can go subscribe to the Proc. of I.R.E., A.W.A. Technical Review and so on—they'll get more than they bargain for there!

There is nothing wrong about a man having radio for a hobby and for a living—but he should know where the borderline exists and endeavour to use Amateur Radio for learning about Amateur Radio—not his job as a technician. Otherwise he is selfish towards those for whom radio is only a hobby.

Was it a printer's error or did 2RJ actually mean that he won't put a transmitter on 50 Mc. till there's some c.w. to work? There should be c.w. (and m.c.w.) on 50—but to make a statement like that in print is to reveal the sort of old-timer's mentality that gives the new hand a picture of some ferocious old bigol who even talks to his wife and kids (if any) in dits and dabs. Let's have more tolerance from both phone and c.w. men, particularly some of the latter gentry who earn their living at P.M.G. keys and can't forget it even when pursuing their (and our) hobby. There's no need for some of these pre-1930 and pre-1925 blokes to imagine themselves a sort of aristocracy of hamdom, immune from the follies (mostly phone follies, of course) of youth.

Now, re "Gremlin." This bird is so busy wielding his poison pen that I'm sure he never gets on the air. Bernard Shaw (or someone) once said, "Those who never make mistakes never make anything." "Gremlin" wouldn't be game to go on the air for fear he made some "blue" such as those he writes about in others. However, my main theme where this chap is concerned is not that I dislike his writings—many of them I heartily endorse—but his anonymity. That's not cricket—nor Ham Radio. We don't mind being criticised provided we know who's doing the criticising.

—R. H. ATKINSON (VK6WZ)

HARMONIC EMISSIONS

Wireless Branch, Treasury Gardens, Melbourne, C.2

Secretary, Vic. Div. W.I.A.

The Victorian Amateur Advisory Committee is concerned at the number of harmonic emissions from Victorian Amateur stations which are being heard on the 14 and 28 Mc. bands in the metropolitan area, and it has been suggested that the Institute might be good enough to arrange announcement in appropriate terms during its weekly broadcast to all members through station VK3WI.

Such action would serve to remind Amateurs of their obligations regarding harmonic emissions and might do much to assist conditions for other licensees in neighbouring locations.

It would be greatly appreciated if you would arrange to take action as indicated and also perhaps to include a paragraph concerning this evil in the next issue of "Amateur Radio."

—L. PEARSON, Chairman, Vic. Amateur Advisory Com.

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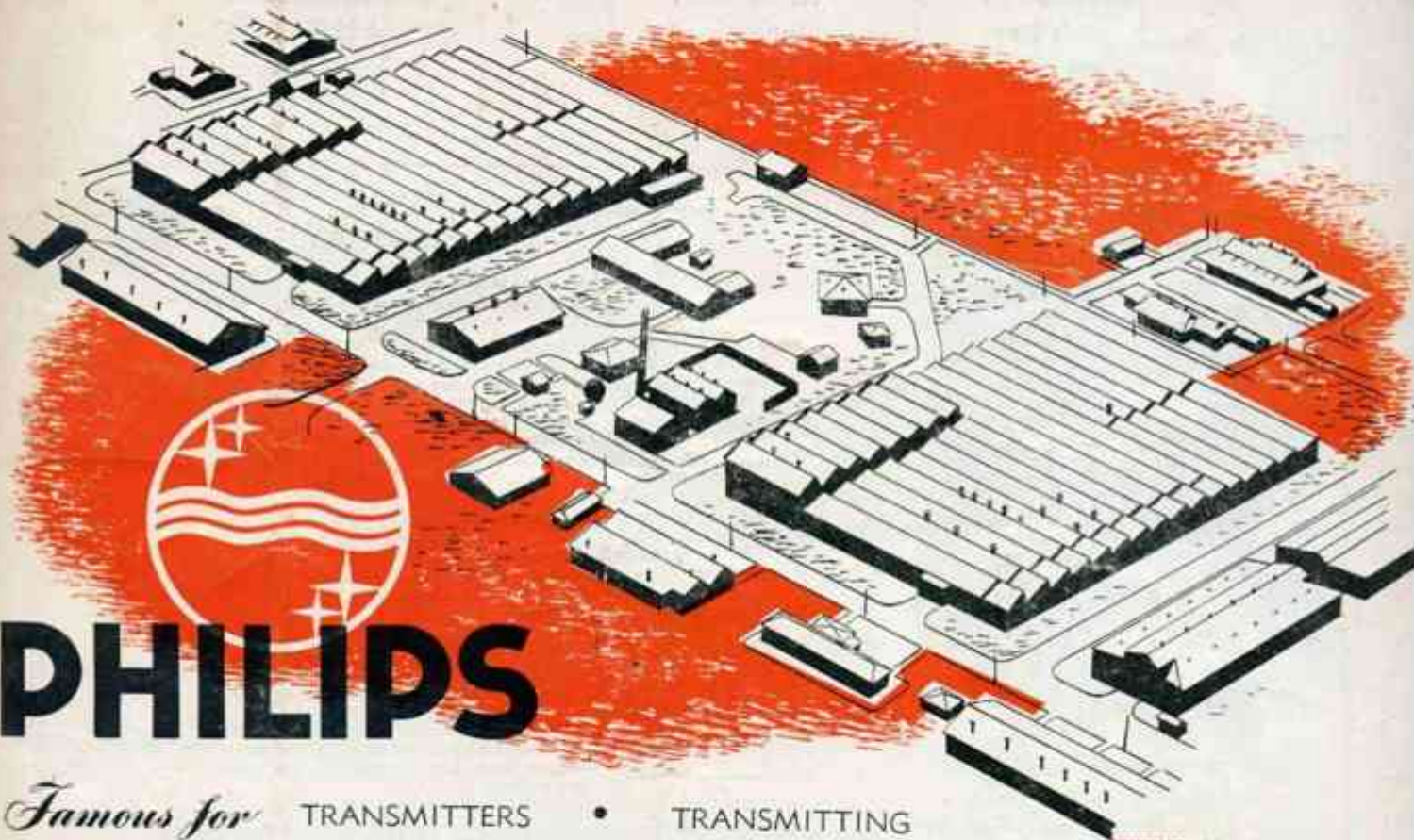
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EDITORIAL



Elsewhere in this issue appears a complete schedule of frequencies now available for use by the Australian Amateur. The latest additions to this list are as follows:—

288-296 M.c. and
576-585 M.c.

The use of these frequencies involve techniques and apparatus which will occupy the attention of all serious workers for a long time to come.

The Radio Society of Great Britain has produced an interesting handbook on micro-wave technique, an advance copy of which has come to hand, and which will doubtless serve as a suitable introduction to most of us. In this connection, the Federal Executive have written the R.S.G.B. Headquarters requesting that a copy of the book be forwarded to each Division for perusal. Arrangements are also being made to enable mem-

bers to obtain their own personal copies thereafter.

Operation of these new frequencies will rest very much on new tubes that have lately been developed in Great Britain, and which have amazing performance, yielding as they do their full output on these frequencies. Disposals' equipment, at present available, does not appear to cover these frequencies, but here again the ingenuity of the serious worker will overcome these obstacles.

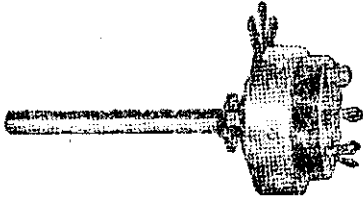
The bands will doubtless be opened up on the basis of "Optical Range," but who knows where they will finish! Steady application to the problems involved will enlarge our knowledge of ultra-high frequency work, and fit us for service in many important technical applications should the national need ever require it.

—P.E.

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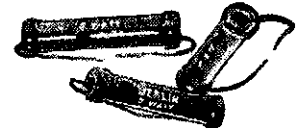
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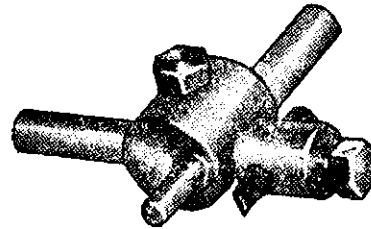


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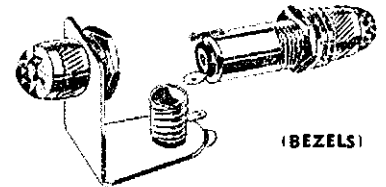
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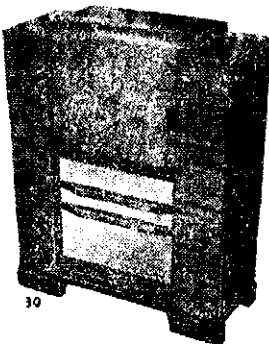
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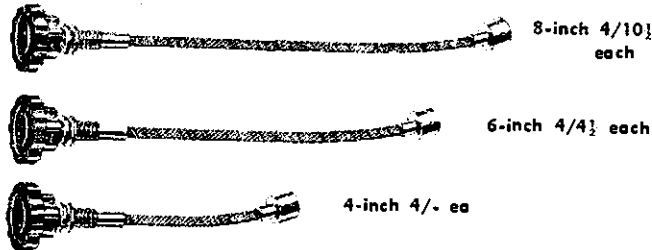
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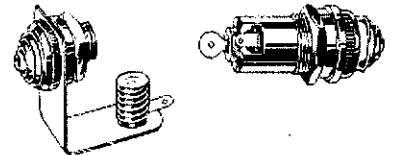
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Double Conversion Receiver

BY C. C. WARING*, VK3YW

Saturday morning, 2nd September, 1939, all Hams received a long telegram and we were off the air. After pottering about for a week or two, the writer decided the best way to fill in the spare time was to build the receiver he had always dreamed about.

DESIGN Before gathering up all the bits and pieces a few thoughts on paper seemed to be in order to solidify all the ideas that had been disturbing the night's sleep.

- 1—General coverage and Ham band tuning from 3.5 to 28 Mc.
- 2—Ample band spread on 3.5, 7, 14 and 28 Mc. bands.
- 3—R.F. stage ahead of converter to give good signal-to-noise ratio.
- 4—I.F. stages sufficient to give good selectivity and ample image ratio.
- 5—Ample gain to give proper a.v.c. action.
- 6—Crystal filter with variable selectivity and rejection controls on the panel.
- 7—A satisfactory noise silencer or limiter with threshold adjustment on panel.
- 8—Signal meter (optional).
- 9—A.V.C. with cut-out switch on the panel for c.w.
- 10—B.F.O. with cut-out switch on panel.
- 11—Separate r.f. and a.f. gain controls.
- 12—Plug-in coils for simplicity and low losses.
- 13—Band-set condensers brought out to front of panel for easy adjustment.
- 14—Standby switch in B+ lead so that receiver can be switched off during transmitting periods.
- 15—Headphone jack and externally-mounted speaker.
- 16—Doublet antenna connections.
- 17—Complete shielding to minimise stray r.f. pick up.
- 18—Strong chassis construction for stability.
- 19—External power supply to minimise heat production and frequency drift in receiver.

Quite an imposing list when one writes it down, but not so hard to satisfy when you get down to tin tacks. Perhaps before the reader goes any further, and feels that a receiver containing 13 tubes and strings of tuned circuits would be too complicated and touchy to get going and to keep lined up, let him remember that most of the tuned circuits are in the i.f.'s, and once peaked need not be touched for many a day, there is nothing complicated about the receiver. All circuits are straight-forward, even the noise silencer chosen is amendable to simple explanation without any hair-pulling maths; anyway let's look at the circuit and see how she goes.

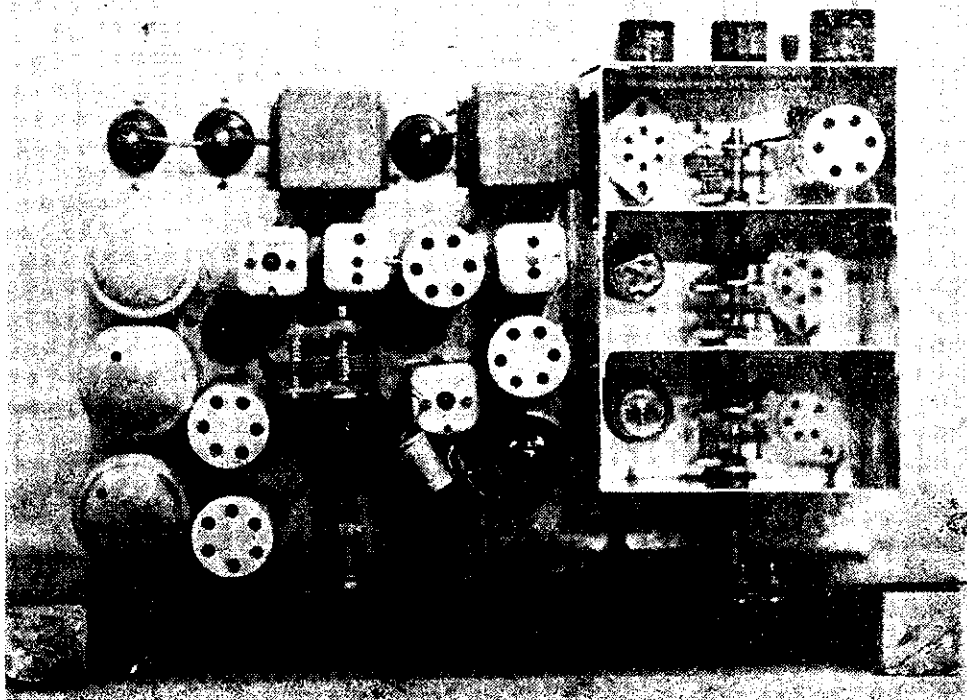
I.F. CHANNELS A glance at the circuit diagram will show that basically the receiver is a superheterodyne using two intermediate frequencies, of course there is nothing new in this; the idea, I believe, was included in Armstrong's original patents, and is used universally with the various h.f. converters on the market at present. The use of an i.f. of 465 or 455 Kc. is a compromise between the selectivity and high gain to be obtained at low frequencies and image ratio. It is well known that low i.f.'s. do not give adequate image ratios at high frequencies and that higher i.f.'s. are less selective but give better image ratios, so it seems the obvious thing to use both.

A frequency of 1600 Kc. was selected as the first i.f., this will give adequate image ratio on 28 Mc. Any of the popular i.f.'s. on the market round about this frequency may be used; 1.9 Mc. i.f. should be excellent. The second i.f. presents itself as a problem which can have a number of answers. For c.w. work a crystal filter of 465 Kc. or thereabouts, works out very nicely, and as the diagram shows I use two stages of i.f. following the crystal, not to get increased gain (one stage will give you plenty), but to give increased selectivity. The increase in selectivity given by the extra stage, especially when it is cut back as shown, is well worth while.

If you have no crystal, don't intend to get one, or if you are only interested in phone, an i.f. of 175 Kc. will give you

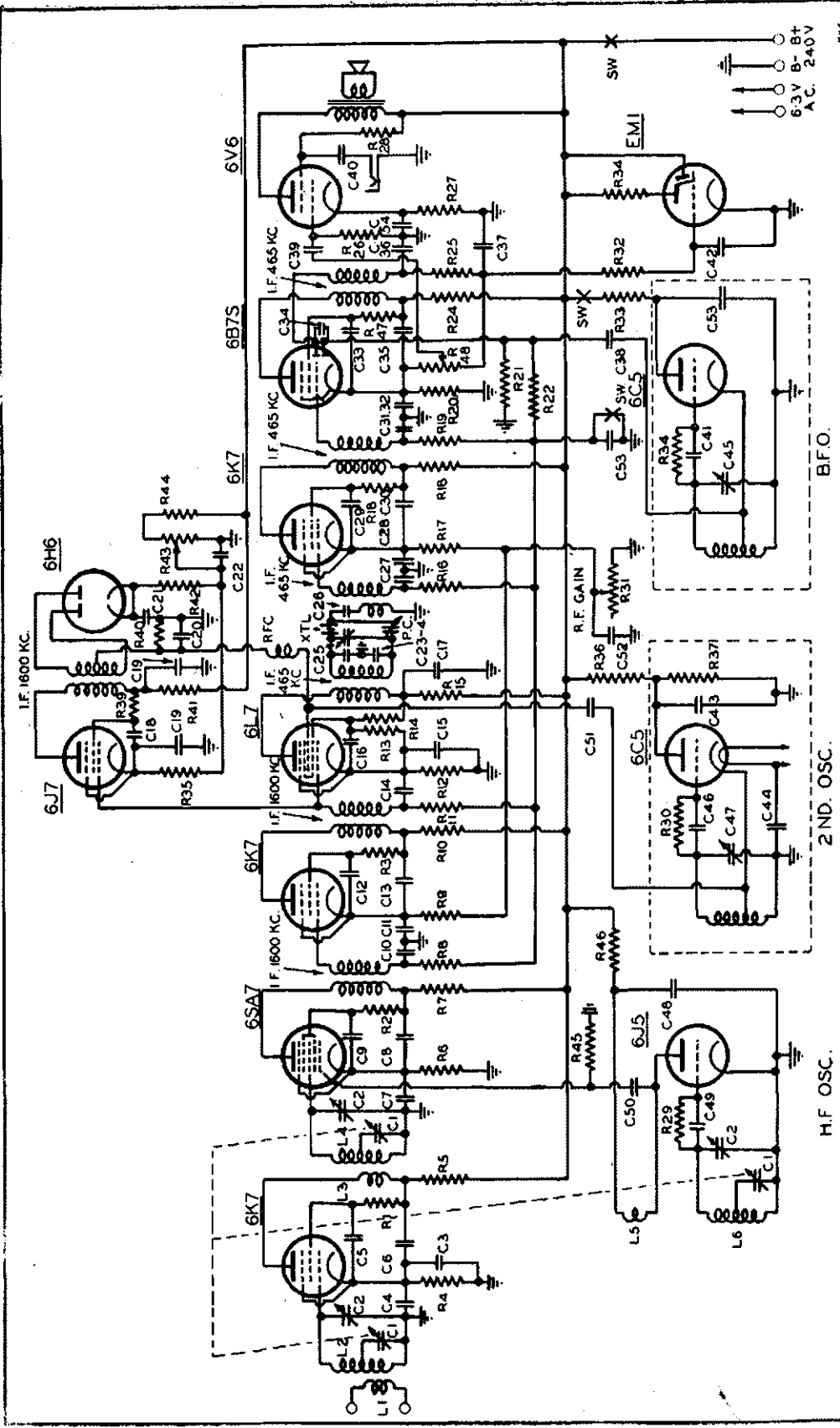
much sharper tuning than the plain 465 Kc. stages. At the lower i.f. you will have so much gain to pour down the sink that instead of using single i.f. transformers between stages you can use two transformers (back to back and coupled through a small condenser of 3-4 pF.) to give a bandpass effect. This will undoubtedly mean shaving cycles off the frequency response, but at the same time will cut out many of those ever-present heterodynes.

At this stage, no doubt, somebody has wondered about the possibility of harmonics or beat frequency response, from the three oscillators employed, getting into the front end; this admittedly could be a problem. It was tackled in this receiver firstly by thorough shielding of all oscillator circuits. The shielding shown round the front end is carried down under the chassis and finished off with a cover-plate; the second converter oscillator and the b.f.o. valves, coils and sockets are both well shielded above and below the chassis with all by-pass condensers inside the shields. Secondly, by the use of low voltages on the b.f.o. and second oscillator; and thirdly, by enclosing a frequency for the second oscillator (which has the chance of being the biggest nuisance) which keeps it clear of the lower frequency Amateur bands. In this receiver this oscillator runs on 2065 Kc. and does not meet up with an Amateur band until it reaches the 28 Mc. band, but harmonics seem to be conspicuous by their absence at the lower frequencies.



Top view showing lay out of R.F., I.F. and location of band spread condensers.

* 12 Skene Street, Stawell, Victoria.



NOISE SILENCER The noise silencer will probably be called complicated—frankly it is not—and goes back to Lamb's noise silencer of 1932. "A noise silencer is a device which, when properly adjusted, will disable the receiver during high amplitude noises of short duration and prevent their passing on to other parts of the circuit where overloading can occur, and produce secondary effects which completely spoil reception."

In the noise silencer shown, the silencing action takes place in the second converter (a 6L7). In addition to the silencer-converter tube, use is made of a 6J7 as a noise amplifier (connected in parallel to the 6L7) coupled by a noise transformer to a 6H6 noise rectifier. The coupling transformer will need to be tailor-made and consists of a tuned plate coil (1600 Kc.) and an untuned centre-tapped secondary. It was made by stripping the original 1600 Kc. secondary off and replacing by winding 60 turns of 28 gauge silk covered wire as close as possible to each side of the primary.

Operation is as follows. The noise is amplified by the 6J7 and rectified by the 6H6. The pulsating d.c. voltage developed by rectification across the diode resistor is applied through r.f.c. to the No. 3 (injection) grid of the 6L7; the resulting increase of bias will stop conversion, not for long of course as the noise pulses are of short duration and

- R1, R2, R3, R8, R11, R14, R16, R18, R19, R39, R40, R47—0.1 Meg., ½ watt.
- R4, R9, R35—500 Ohms, 1 watt.
- R5, R7, R10, R15, R18, R20, R24, R25—3,000 Ohms, 1 watt.
- R6—250 Ohms, 1 watt.
- R12—2,000 Ohms, 1 watt.
- R13, R30, R33, R34, R39—50,000 Ohms, ½ watt.
- R17—1,000 Ohms, 1 watt.
- R21, R34—2 Meg., 1 watt.
- R22—1 Meg., ½ watt.
- R26—0.5 Meg., ½ watt.
- R27—250 Ohms, W.W.
- R28—0.2 Meg.
- R31, R43—3,000 Ohms, W.W. Pot.
- R32—3 Meg., ½ watt.
- R36, R44—30,000 Ohms, 1 watt.
- R37—10,000 Ohms, 1 watt.
- R41—4,000 Ohms, 1 watt.
- R42—0.25 Meg., ½ watt.
- R45—20,000 Ohms, ½ watt.
- R46—25,000 Ohms, 1 watt.
- R48—0.5 Meg. Pot.
- C1—Three 30 pF. band spread ganged.
- C2—100 pF. band set.
- C3, C4, C6, C7, C8, C9, C10, C11, C12, C13, C14, C16, C17, C18, C19, C30, C40—0.01 uF.
- C5—0.005 uF.
- C15, C21, C27, C29, C30, C31, C33, C35, C42, C43, C44, C48—0.05 uF.
- C20, C25, C26, C50, C51—50 pF.
- C22, C52—0.5 uF.
- C23, C24, C34, C36, C37, C41, C46, C19—100 pF.
- C28—0.1 uF.
- C32, C54—25 uF.
- C38—1 pF.
- C53—0.02 uF.
- C45, C47—465 Kc. Padders.
- P.C.—Three Plate Midget.

punch a short-time hole in the signal (so short that the ear is not aware of it). Capacity transfer of strong signals are eliminated in this arrangement as the plate and grid circuits of the 6L7 are related only by conversion.

To aid in the silencing action the oscillator injection voltage is made small by running the oscillator at low voltage and the 6L7 is operated at high bias and low screen voltage to reduce the conversion gain. The start of the silencing action is controlled by the resistor R43 which acts as a threshold control by varying the cathode bias on the 6J7 and 6H6.

It will be noticed that the silencer is ahead of the crystal filter; in this position apart from the fact that the silencer operates better by being in a comparatively unselective part of the receiver, it cuts out those annoying pings a crystal filter delights to give out when hit by a sharp noise peak.

CRYSTAL FILTER The crystal filter is easy to make and does not cause a drop in the signal to any extent when switched in, although it does give the impression of loss of sensitivity due to the marked cutting down of background noise. Noise in receivers is directly related to band-width and it is only logical that when the band-width is cut (and cut severely when the crystal goes in) that the background noise will drop.

As in the noise silencer a little simple tailoring is necessary for both input and output transformers of the crystal filter. The input transformer consists of an ordinary 465 Kc. i.f. transformer with the 100 pF. fixed condenser across the secondary removed and replaced by two condensers of similar capacity connected in series and shunted across the coil. The centre connection between these condensers is earthed to give a centre tap effect for the input circuit, the remaining 50 pF. capacity is made up by condenser C25 across the input circuit. This resonates the whole circuit to the i.f. frequency when the crystal is shorted out, and acts as a selectivity control when the filter is in operation; selectivity increasing as the condenser is tuned away from resonance (for the theory of this see past issues of "Amateur Radio" or the R.S.G.B. "Radio Amateur's Handbook").

The output transformer consists of an air-core i.f. from the junk box. One coil was stripped off, and 35 turns of 30 gauge enamel wire (which happened to be handy) were scramble-wound as close to the remaining coil as possible. This gives a step up effect from the filter and a better impedance match. Phasing condenser P.C. consists of a 3 plate midget with the crystal shorting switch attached to the shaft. This switch consists of a piece of copper wire soldered to the shaft and a small piece of copper or brass strip bolted to the isolantite back plate to make a wiping contact. Both the phasing condenser and the selectivity control condenser are brought out to the front panel through insulated couplings, necessary in this case as both sides of the condensers are hot.

AUDIO SECTION The audio end may cause a slight amount of eye-brow lifting due to its apparent lack of gain, but the writer does not think it necessary to have four, five or more watts of audio worrying the family and neighbours. The 6V6G as shown operates with a screen voltage of 100 and has an output of 1.5 watts with a load of 14,000 ohms. 1.5 watts gives ample volume and enables me to listen to VK3WI while I chop the wood outside, and perhaps better still it only takes an input voltage of 5 volts to drive it. As there is plenty of gain ahead of the diode it has no difficulty in delivering the output necessary.

Another convenient aspect of the 200,000 ohm resistor in the 6V6G screen lead is that it makes a handy audio choke to plug the phones in between screen and earth (through a blocking condenser of course). Taking the phone output from the screen gives a nice balance between headphone output and speaker level; by this I mean that when the speaker is plugged in, it is not necessary to turn the audio gain up.

A.V.C. This is applied to the three i.f. amplifier tubes and the second converter, which gives ample control and a fairly steady output over a wide range of signals. It is not applied to the r.f. amplifier ahead of the 6SA7 as this tube is run flat out at all times to get as good a signal-to-noise ratio as possible.

The r.f. stage was originally coupled into the a.v.c. line and also to the r.f. gain control because it was thought that overloading would occur with strong signals. Experience disproved this idea and it was allowed to operate at maximum ratings at all times with an improvement in signal-to-noise ratio.

BAND SPREAD An essential feature in any Ham receiver is band spread which is obtained by the tapped coil method. The band-set condensers are 100 pF. variable condensers across the whole coil, the band spread condensers, which are ganged to the main tuning dial, consist of 0-30 pF. variables tapped across varying portions of the grid coils as shown in the coil table. Other methods could of course be used but the one shown is simple to adjust and gives no trouble.

COILS The second oscillator coil and the b.f.o. coil are both home-made and consist of electron-coupled oscillators using plenty of capacity for stability. Both tuning condensers consist of 465 Kc. padder condensers (variable) and run I believe up to about 800 pF.

The second oscillator coil contains 20 turns of 26 gauge d.c.c. wire wound on a 1 1/4" former, cathode tap is 5 turns from the cold end. The padder condenser is strapped across the top of the former with its adjusting screw upward and a hole is drilled in the coil shield to enable it to be reached by a screw driver for adjustment of frequency.

The b.f.o. coil is made in a similar manner but contains 90 turns of 30 gauge enamel tapped a quarter of the way up from the cold end. Of course a commercial unit could be substituted here, but personally I prefer if possible to make my own.

The coil table is probably remarkable for the variety of wire gauges used, but the wire used just happened to be that on hand. The aerial coils (L1 and L2) on 3.5 Mc. band are wound with a space of 1/16" between them; on 7, 14 and 28 Mc. bands the aerial coil L1 is wound as close to the secondary as possible. On 3.5 Mc. the primary L3 of the r.f. transformer is over-wound over the cold end of the secondary L4 and inter-wound on all other bands. Oscillator coils L5 and L6 require a little juggling with the spacing between them. If it is too loose oscillator stops, if too tight the oscillator will super-regenerate and cause birdies across the band. A lot will depend on the oscillator valve, both to its type and age. Close coupling between the aerial and r.f. coils may bring thoughts of lack of selectivity but selectivity is determined mainly in the i.f. stages and causes no worry.

It will be noted from the coil table there is no band spread on the 3.5 Mc. coils, both variable condensers are placed across the whole coils.

POWER SUPPLY This is external to the receiver proper and consists of a standard 385-0-385 volts 100 mill. transformer, 80 rectifier and a two section filter. If the receiver is to be used exclusively with a loud speaker, a single section filter may be enough, but for quiet listening with headphones the two section filter is essential.

The power supply was made separate mainly with the idea of removing a prolific source of heat, and secondly because there was not enough room on the chassis.

COIL TABLE
3.5 Mc. Band

Coil	Turns	Wire	Length	Band Set Tap	approx.
L1	7	26*	close-wound		
L2	27	"	"		
L3	7	"	"		
L4	27	"	"		
L5	7	"	"		
L6	15	"	1/2"		70%
7 Mc. Band					
L1	4	30*	close-wound		
L2	15	30†	1/2"		8
L3	5	30*	inter-wound with L4		
L4	15	30†	1/2"		8
L5	5	30*	close-wound		
L6	10 1/2	30†	5/8"		5 1/2 60%
14 Mc. Band					
L1	4	30*	close-wound		
L2	6 1/2	26*	1/2"		3 1/2
L3	4	30†	inter-wound with L4		
L4	6 1/2	26*	1/2"		3 1/2
L5	3 1/2	"	1/4"		
L6	6	22*	1/2"		3 70%
28 Mc. Band					
L1	3	30*	close-wound		
L2	3	"	3/8"		1
L3	3	"	inter-wound with L4		
L4	3	"	3/8"		1
L5	2	"	close-wound		
L6	2 1/2	26*	3/8"		1 40%

* Enamel

† D.S.C.

MECHANICAL DETAILS In order to make a good job that would not fall apart, and at the same time be reasonably easy to work, the 17" x 10½" x 3" chassis was made of ½" aluminium. A rigid assembly is essential for the chassis if signals are going to stay on the nose. There is of course no reason why a modern steel chassis could not be used with equal results.

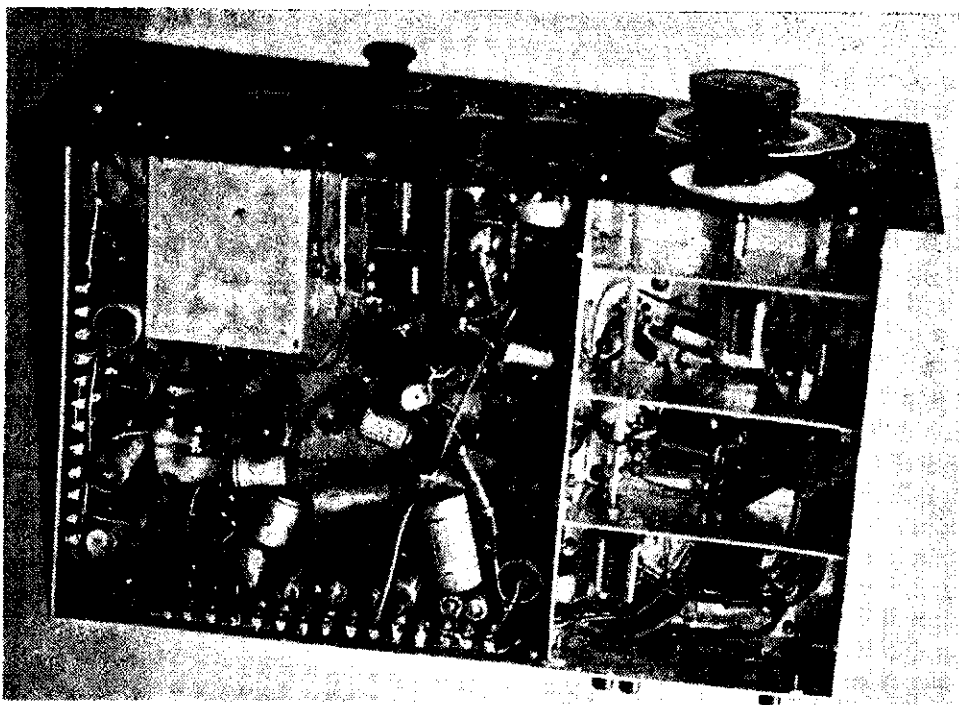
Mounted on the right hand corner of the chassis (as shown in the top view of the receiver) is the shielded compartment containing the whole of the first three stages of the receiver, namely the r.f., frequency changer, and h.f. oscillator. This is made of 16 gauge aluminium and divided into three compartments by baffle plates, and finished off by a well fitting lid. This shield measures 8½" long, 6" wide and 5" high; each compartment inside is 2¼" wide.

As shown in the under chassis view, each of these stages is shielded by cross baffles which also serve as mounts for the band-set condensers. Under-shielding is finished off by a cover plate which fits over the whole of the under shielding not shown in the photographs. Also in the under-chassis view is the bottom shield of the b.f.o. and second oscillator section, this is the almost square aluminium box visible about half-way up the panel. The panel by the way is a Trimax steel job 19" x 10½", finished in black crackle, very rigid but hard on the home builder's tools.

LAYOUT The receiver controls as shown on the panel are bottom row (right to left): r.f. band-set condenser, oscillator band-set with dial and pointer, aerial band-set, r.f. gain control, audio gain control, speaker jack, noise silencer threshold adjustment, and phone jack. Above silencer control is the a.v.c. on/off switch and at extreme left two s.p.s.t. switches, b.f.o. on/off on top, and B+ on/off lower. The main tuning dial directly over the oscillator band-set condenser is an "Aegis." Although any smooth-running dial will be satisfactory, with the amount of band spread and tuning rate given in the receiver, about a 10-1 vernier drive ratio is ample; too high a ratio is not necessary. To the left of the "Aegis" dial is the EM1 magic eye and to the left of it above and below the selectivity control C25 and the phasing condenser P.C.

Reverting to the top chassis view, in the top right hand corner is the r.f. stage, followed by the converter stage (6SA7) and the h.f. oscillator (6J5). Along the back of the chassis the two square shield cans are the two 1600 Kc. i.f. transformers with the 6K7 i.f. amplifier between them. Following are the 6L7 second converter and the 6J7 noise amplifier, immediately in front of the 6J7 is the noise transformer, followed by the second oscillator shielded coil and the b.f.o. coil; each with their respective tubes to the right.

Immediately to the right of the noise transformer are two square i.f. transformers, these are the input and output



Underneath view of chassis showing R.F. sections and shielding also shield of B.F.O. at the left.

transformers for the crystal filter which is situated just in front of the two transformers, the only part visible in the photograph is the selectivity control condenser C25. Following the filter output transformer is the first amplifying valve (a 6K7 or 6U7G), a 465 Kc. transformer, the second amplifying tube and third detector (a 6B7S or 6G8G) with the last i.f. transformer on its left. The 6V6G output tube is immediately behind the third detector, and the EM1 mounting is shown just to the left of the 6V6G. The fixed condenser, visible between the EM1 and the i.f. transformer shield, is the 0.05 uF. between EM1 grid and earth. The 6H6 noise rectifier is the small metal tube between the crystal input transformer and the second oscillator coil can.

GENERAL DETAILS As a receiver of this type is unlikely to be built by a beginner, no detailed description of the wiring will be given, the general layout is well shown in the photographs and can be followed easily. For the sake of later servicing most resistors and by-pass condensers of the i.f. stages and noise silencer are mounted on resistor strips running along the back and one side of the chassis. These can be wired up before they are actually installed and it is only a matter of a short connection between the strips and their associated valve sockets when they are actually bolted in. In this receiver when first completed, all except one or two condensers were on the strips. Changes made later account for the surplus components shown in the underneath view.

The crystal used is one working with an air gap, and care should be taken to mount it in a horizontal position, so that

the gap will remain as a uniform gap. When first installed the one used was mounted vertically and caused many hard things to be said about the poor results of crystal filters, until it suddenly dawned on me that the crystal was supposed to work with an air gap that should stay put and not have the crystal moving round between the plates. So the mounting was quickly swung through 90° and all our troubles were over. However don't forget that sometimes the crystal gets dirty, just like the ones do in the transmitter and it may need a clean up now and again, especially if it is an open holder.

The coils in the original receiver are all wound on valve bases as they were the only materials available at the time, to avoid mistakes when plugging in, the oscillator coils are wound on 5-pin bases, and the r.f. and converter on 6-pin bases. However it would be better to use the modern Trolitol 1½" formers for more than one reason. Firstly they are much better electrically, secondly the thermal co-efficient is much less than bakelite, thirdly they look better, and fourthly (this one is quite important) there is less risk of damaging the windings with continuous band changing. Six-pin sockets grip quite firmly and it is easy enough to pull turns off when changing bands in a hurry. Different bands can be colour-coded, with the oscillator coils given a distinctive marking in addition.

ADJUSTMENT Lining up of the receiver is best carried out in stages as follows:—

- 1—Lower frequency i.f. stages.
- 2—High frequency i.f. stages.
- 3—Front end of receiver.
- 4—Noise silencer and crystal filter.

The lower frequency i.f., if used with a crystal filter, is best adjusted by wiring the crystal into a simple triode oscillator, the frequency of the crystal as an oscillator will be slightly different from its frequency as a resonator but will be accurate enough for the first line up; 45 volts or less on the plate will give ample output. For the 1600 Kc. stages, if no signal generator is on hand, an easy way out is to use a b.c. oscillator coil with a standard single gang condenser; this should go to round about 2000 Kc. and cover this section nicely.

Before lining up short out the crystal filter and turn the noise silencer control to maximum bias thus cutting out their two functions and leaving the set as a straight super without trimmings. Now proceed to line up the i.f. stages starting from the third detector stage and working forward to the grid circuit of the 6L7 second converter. It should be necessary to decrease the coupling between the crystal oscillator and the various stages as more stages are lined up. When all 465 Kc. stages are peaked as shown on the magic eye, set your signal generator (if you have one) or home-made oscillator on 1600 Kc. (you can check this frequency on most b.c. sets) and loosely couple the output into the grid of the second mixer. Now vary the condenser across the second oscillator tank starting from minimum until output is indicated in the EMI, then proceed to peak both 1600 Kc. i.f. transformers as above.


Now line the front end up either on a steady signal or one from a monitor or signal generator. When the receiver is working to your satisfaction at this point, line up the noise silencer, by pulling out the h.f. oscillator tube and feeding a 1600 Kc. signal into the first 1600 Kc. stage, via the grid circuit of the 6SA7, of sufficient strength to close the EMI. Turn the silencer full on, i.e. to the earthed end of the variable resistor R43 and peak the noise transformer by the MINIMUM output shown on the EMI; back off the silencer control until the signal comes up in the magic eye and re-peak the transformer. Continue this process until the transformer is right on the nose. In normal operation the silencer should operate with about an eighth of the silencer control cut in, if much more than this is used the gain ahead of the silencer is too great and should be cut down by increasing the bias on the 1600 Kc. amplifier. Too much gain here will cause blocking of the silencer and second converter on strong signals.

With the silencer operation OK turn the threshold control to the off position and adjust the crystal filter as follows: Plug the crystal filter back into position, and with the crystal still switched out, a clean signal is tuned in and peaked; and then the b.f.o. switched on and adjusted for the desired pitch of note. Tune the receiver through zero beat to approximately the same pitch on the other side, now switch the crystal in by

turning the phasing condenser P.C. from zero, and adjust the phasing condenser until the signal is practically eliminated. The filter is now adjusted for single-signal reception, and with the exception of very strong or modulated signals it will be found that signals are only received on one side of zero beat. For c.w. work the crystal should be left in at all times, as in a crowded band it is easy to lose a weak signal if the filter is set after the signal has been tuned in. For phone work the phasing condenser is set at the point of maximum "hiss" noise.

In conclusion the 6L7 is replaceable by 6L7G and according to A.W.A. if they are unobtainable, a 6J8G can be substituted for the 6L7G without any change of socket connections; the connection to pin No. 6 being ignored and the valve treated as a 6L7G. The reason of course is that the 6J8G is really a 6L7G plus a triode oscillator. The 6SA7 may or may not need neutralising. In this receiver it was not necessary and it works as well on 28 Mc. as on 7 Mc. If required a very small condenser of 1 or 2 pF. between the control grid and the oscillator grid will do the trick.

The control knob to the left of the noise silencer control is not used at present, originally it varied the amount of b.f.o. voltage to the 6B7S but as this idea proved an unnecessary refinement it was cut out. It could be used for a variable condenser to give a variable beat note. The hole between the magic eye and the "Aegis" dial is the remains of another experiment now defunct.



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CATHODE COUPLED OSCILLATOR

By Dr. A. F. TAYLOR*, VK3AT

In my case, use is made of an EF50 in the buffer stage, with an r.f. choke of 2.5 mH. in its plate lead, and this is capacity coupled to a 6V6, also operating in class A, with a coil of 70 turns, 34 s.w.g. enamel, on a $\frac{3}{8}$ " polystyrene form, shielded by an old i.f. transformer can. The tuning coil L1 consists of 15 turns of 22 s.w.g. enamel on a $\frac{3}{8}$ " polystyrene form, with an iron dust core fixed in the axis of the coil.

The condensers coupling the tuning unit to the valves in the oscillator are 3-30 pF. air trimmers. These are just the thing as their capacity can be readily adjusted to give greatest stability.

This circuit is very stable on the 3.5 and 7 Mc. bands, but does not oscillate readily in the regions higher than 10 Mc.

the coupling between the tuned circuit and oscillator valves is very small, 2 to 5 pF. In other words variations in effective inter-electrode capacities of the valves due to variations in plate voltage and tube heating have negligible effect on the frequency determining circuit.

A voltage regulator in the v.f.o. power supply is therefore not as essential as in most other types of oscillators.

The coupling between cathode of the cathode-coupled oscillator and the grid of the following buffer amplifier is a variable 3-30 pF. air trimmer. This is used at the smallest possible value to obtain reasonable output, to further help the electrical stability of the v.f.o. Also taking the output from the cathode helps this stability. Output may be

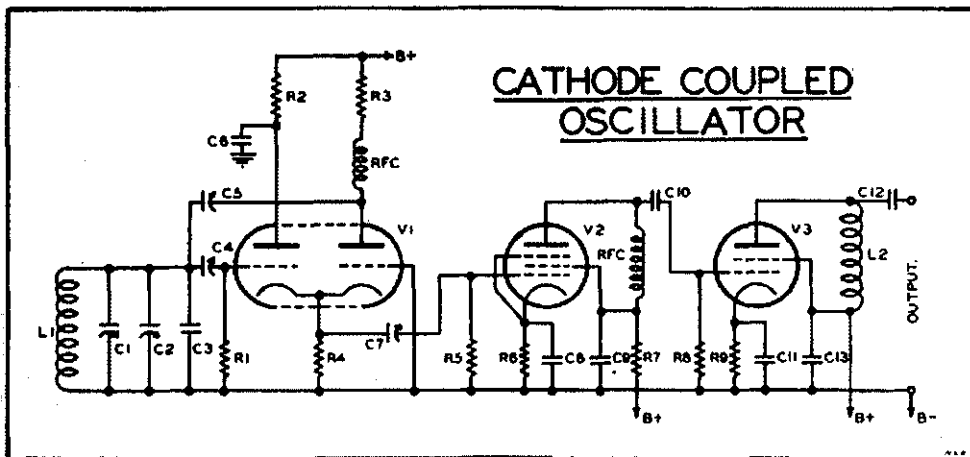


Fig. 1

- C1—150 pF. variable
- C2—50 pF. variable
- C3—50 pF. mica
- C4, C5, C7—3-30 pF. air trimmers
- C6—0.1 uF. paper
- C9, C13—0.01 mica
- C8, C11—0.05 uF.
- C10, C12—100 pF. mica
- L1, L2—see text

- R.F.C.—2.5 mH.
- R1—100,000 ohms, 1 watt
- R2, R3, R4—2,000 ohms, 1 watt
- R5, R7—5,000 ohms, 1 watt
- R6—150 ohms, 3 watts, wire wound
- R8—330 ohms, 3 watts, wire wound
- V1—6N7
- V2—EF50
- V3—6V6

This circuit is similar to the Franklin oscillator in some respects. It is a two terminal negative resistance type using two triodes, or a twin triode valve. One valve acts as a cathode follower amplifier and the other as a phase inverter.

The output is taken from the common cathode connection of the triodes. This circuit is not original and was shown to me first by VK3GU, who has tried it out, and it has some advantages over oscillators using single valves.

The dynamic stability is good, there is very little frequency drift during the warming up period after switching on, and variations in plate supply voltage of moderate amount do not affect the oscillator frequency. This is because

taken from the plate of the second triode where slightly more i.f. voltage is available, although it may affect the frequency more.

The v.f.o. at the writer's station operates on 4.7 Mc. feeding a two stage transmitter, the first stage being used as a tripler, and the second as a straight p.a. for operation on 14 Mc.

Results have been good from the point of view of tone and stability of the oscillator, and as with other types of oscillators, mechanical stability is essential.

The values of plate dropping resistors are not critical and may be any value between 500 to 10,000 ohms or more, and need not even be equal. The cath-

QUESTIONS & ANSWERS

Following a suggestion by VK2ALR and others recently, a Questions and Answers column makes its debut. It is intended to act as a clearing house for your queries and also your knowledge and experience, and you are herewith invited to use its services.

If you have a question of a technical nature send it in to Q. & A. "Amateur Radio," Box 2611W, G.P.O., Melbourne, and if suitable it will be published in this column. If you can answer any of the published questions you are invited to send same to the above address. All such replies will be forwarded to the questioner (if he has sent a stamped addressed envelope of suitable dimensions) and also a summary printed.

We reserve the right to reject any question as unsuitable but apart from this, this column's operation is up to YOU. So let's have your queries. To start the ball rolling, here are a couple of things we would like to know.

Q. 1—What is the velocity factor of nylax twin power flex?

Q. 2—Why are filter chokes put in the high tension lead where the windings have to be well insulated from the core when it appears that they would work equally well in the return lead at approximately earth potential?

REVIEW.

MICRO-WAVE TECHNIQUE

R.S.G.B. Publication

This little booklet is a **must** for every Amateur's bookshelf. For a general guide to micro-wave equipment from the Amateur viewpoint it has no equal, both for the u.h.f. man and even more for those who would like to know just what goes on up there.

A description is given of the operation of each of the components which are in present use; cavity resonators, wave guides, aerials and radiators, crystal mixers and detectors, and the various types of tubes; klystrons, travelling wave tubes, lighthouse triodes, magnetrons, etc. No mathematics, no formulae, but after perusing Micro-Wave Technique one has a very good idea as to which frequency these gadgets work at, their power, and their usefulness to the Amateur.

No specific circuits for Amateur transmitters or receivers are given, purposely, since at present all work has to be done with equipment which is round and about. However a chapter describes the sort of set-ups which would be suitable and this should give some ideas to those who are interested.

Definitely great value for its small cost.

ode resistor used is 2,000 ohms, but again is not critical.

The v.f.o. should have its own power supply and 100 to 200 volts plate supply is needed. All three stages of the unit draw a total of 35 Ma., at an operating potential of 120 volts.

*112 Maude Street, Shepparton, Victoria.

A KILOWATT FOR YOU!

E. A. CHARLES, * VK5YQ.

Yes sir, one thousand little watts, all together, and just where you want 'em! Nothing new—you've read it all before, but did you think about it?

Recall how you've marvelled at the way a certain few W6 stations push your S meter over when the band is only fair? They run 1 kilowatt though, you say, and have a three element beam. Yes, but if they were operating under your transmitting conditions, they would need an input of 20 kilowatts to shoot over the same signal! And do you ever think of the thousands of W stations you've never heard, and are not likely to ever hear?

This way you will comply with para 91 of our Handbook and save many a faithful 807 from an untimely demise, not to mention the coal shortage.

How?—simply by using and concentrating a few of the many db's. that are going to waste. When you want to read in bed you don't try it by moonlight. And when you ring the YL over trunk lines, you don't sing or recite your 88s—you want her to hear you, and hear her say she will QSL.

So, firstly, your modulation. Pro-

gramme compression of 3 db. is common broadcast practice—it is as effective as doubling the stations power. There is a circuit in the 1947 A.R.R.L. Handbook that given 25 db. of clipping of speech peaks. It is generally accepted that the average level of modulation on speech is 30% when the peaks reach the 100% modulation level. (What yours reach is often discussed.) In round figures, the difference in input level to increase from 30% to 100% modulation, is 4 db. Fifty per cent. to ninety per cent. is a rise of another 5 db. in input level, a further db. bringing up 100% modulation.

If you can accomplish 7 db. of compression, you have a power gain of five times. Your 100 watts are equal to an input of 500 watts without compression.

Now, let's work on it. The maximum possible gain from a two element beam is 5.7 db. (radiator and parasitic director, tenth-wave spacing—"QST" April 1947). Up to 7 db. with a three element, to 9.7 db. from a wide-spaced four element beam. However, let's assume you get, in practice, a 5 db. gain over an ordinary half-wave antenna. That is a power gain of three—your 500 watts have now become equal to an input of

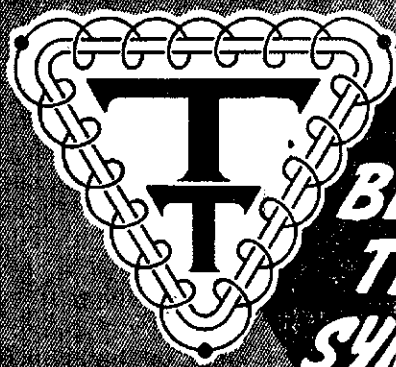
1,500 watts. Settle for two-thirds efficiency—you have 1 kilowatt in anyone's language!

Well, what are you wasting time for? The cost—for compression—another tube or two and a few bits. The beam yes, a few quid, depending on how far you have deteriorated in that services-acquired habit, "scrounging."

However, a certain amount of time and hard work are required, to make the compression/clipping behave, and to properly adjust the beam. The first is very necessary, the latter very desirable. Neither are greatly involved or complicated.

There are some who will say it takes the fun out of the game—like shooting rabbits by using telescopic sights. But maybe you, too, are fond of roast rabbit. Don't expect miracles, though—you'll learn a lot by listening. And don't be surprised when you see the local QRM at work next day, and he tells you he collected a couple of new countries the night before (with his full wave zepp and 20 thin watts). You'll notice he looks a little haggard though, and has difficulty in keeping his eyes open. Of course anything goes with wide open conditions, if you wait for the competition to go to bed and the band is really wide open. After all 12 db. is but two S points!!!

*193 Young Street, Unley, South Aus.



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QRP OPERATION

BY R. J. WHYTE*, VK2AHM

For the benefit of those interested, the writer outlines hereunder equipment used during recent successful tests on 28 Mc. Power input to the final stage was varied from 4 watts to 0.2 milliwatts.

Transmitter.—6K7GT e.c.o./c.o., 6K7 GT doubler, HY60 final, plate modulated by battery powered 1J6G operating in Class B, percentage of modulation being somewhat restricted by method of application (normal method of modulating both plate and screen could be applied to advantage—Ed.). For QRP operation the gain control is simply turned back to the proper setting for correct modulation level.

Aerial System consists of series of 14 Mc. vee beams arranged to provide low angle radiation in selected direction. Seven wires, 272 feet long, radiate from central pole 45 feet high, to the perimeter poles 12 to 15 feet high. Wires are of 12/14 s.w.g. galvanised wire and spacing is approximately 51.5 degrees. All feeders enter the shack as a cage and are spaced 4" apart. Required two wires being selected by flexible leads. Feeders are tuned, using either series or parallel arrangement and are about fifty feet long. The system as a whole works very well on both 28 and 14 Mc.

*Willow Point Station, via Wentworth.

SHORT CIRCUITS

SIMPLE BUT EFFECTIVE KEY CLICK FILTER

After listening to the large number of stations radiating key clicks these days, the simple but effective filter which I use may be of some help to those seeking a remedy.

Secret of the system is the use of a wet electrolytic condenser. A dry type has been tried with negative results.

I have keyed final amplifier centre tap, buffer cathode, and crystal oscillator cathode with the same results.

The family b.c.l. set aerial is connected at one end to the same mast as the transmitting aerial, and no trace of clicks are evident in that receiver.

The 8 uF. electrolytic is connected directly across the key contacts with the positive side to cathode of the keyed tube, and the audio chokes placed in each lead. The leads from the cathode to key are in shielded wire and earthed.

The chokes do not appear critical

Power Supply.—6 volt vibrator supply providing 25 Ma. at 160 volts was used for normal operation. Vibrator unit was provided with taps for QRP operation.

Results achieved have been most gratifying; but in many cases do not agree with VK3CO's "Story of the Decibel" (details of contacts submitted by the author reveal that unknown and unpredictable factors involved precluded accurate comparison—Ed.).

as the ones in use at present are the audio chokes found in old fashioned receivers.

If you connect the condenser back to front or use a "sick" condenser, current will appear as though the key was closed.—VK2QL.

MOTOR FOR ROTARY BEAMS

VK5SP has found a use for the 24 volt motor generators which are part and parcel of a lot of disposal equipment, particularly i.f.f. gear. The field windings are disconnected from the 24 volt driving armature and connected in series with the 240 volt winding. With these connections one has a motor which with suitable gearing, will turn a beam using either 240 volts a.c. or even 300 volts d.c. from the normal power supply. Current is about 40 Ma. using d.c.

D.I.G.

VK3QO, our scribe for Fifty and Up, having the doubtful advantage of having an illegal broadcast transmitter in close proximity, came home to find press photographers busily engaged snapping his poor old 50 Mc. folded dipole from various angles, under the impression that they were getting a real pukka scoop photo. He had to disallusion them, of course. The same night, 12 midnight to be exact, more pressman, more photographers, more annoyance. What he would like to know is who sent them to VK3QO. Anyhow fellows if there are no more 50 Mc. notes, you'll know VK3QO is in a quiet location, NOT working DX!

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FIFTY AND UP

Compiled by VK3QO, to whom all contributions can be sent

What, no DX? Well, hardly any, apart from a contact between VK5GB and VK2AGS at 9 p.m. on 13/5/48, signals were not so good due to QSB, etc. 5RT also contacted 2AGS that night and again on 14/5/48 at 10 p.m.

VK3RR has been hearing a station on 52 Megs in the wee sma' hours of the morning (midnight onwards) during the end of April and beginning of May. Signals were in and out, never strong, apparently an automatic CQ going with occasional speech with non-VK accent; beam was pointed just East of North.

VK3CL, operating from Mt. Fatigue near Foster on 9/5/48, again worked 7AB across Bass Strait. Signals were not so good this time due to rain or something in the flight path.

It is reported by 3PG that W8UXN heard a VK5

date unspecified (but about beginning of May) about 5 p.m. our time.

COMMERCIAL HARMONICS

We are subjected (quite rightly) to continual reminders about harmonic radiation from Ham Stations. Why is it then that VHNQ can continue to run their rig in such a poor manner that numerous spots occur in the 50 Mc. band? It would not be so bad if one could identify it, but as it is one has to wait hours before any call sign is given. Why can't they give their call sign say every quarter of an hour?

VK3 FIELD DAY

The 50 Mc. Field Day on 9/5/48 was rather restricted this time; only 3CI, 3UI, 3DI and 3US/3VL were out, though 3RR took his receiver to Ballarat, no room for his transmitter in car.

3US/3VL were at Arthur's Seat. Rex and Gwen used their usual portable with 5 watts to a 6V6 final. They worked all portable stations and 3HK, 3AT, 3PG, 3BD, 3ABA, and 3GE fixed portable at Frankston. They made some interesting antenna tests using the beam at various heights and it appears that with a very low aerial signals disappear in some directions only.

3ABG used his new mobile rig consisting of a v.f.o., doubler into doubler into 832 doubler into p.p. 807s. Modulation was f.m. secured by loop modulating the v.f.o. Power from Type 3 Mark II. power pack. Receiver was converted into two i.f.s. into super regen and audio. He worked 3PG, 3UI, 3HK, 3ABA and 3ET from the top of the Divide near Pretty Sally Hill. Rig was vertical rack and panel and looked nice; aerial was half wave.

3UI, with friend 2APP, worked from Mt. Mayor (350 feet), near Dookie, where they heard Melbourne stations up to 89. Their greatest surprise was their contact with 3CI at Foster, there being plenty of mountains in the stretch of 150 miles between them. 3VL, 3ABA, 3HT, 3ABG, 3PG and 3HK were also worked. No dope to hand on rig used.

VK4 FIELD DAY A WASH OUT

The "Grand Field Day" set down for the 1st and 2nd of May was washed out due to heavy rain, and was held on the following Sunday. 4ZU and 4XG operated from Maleny, 4RT from Tamborine Mountains and 4DQ from Mt. Kynoch, Toowoomba, with 4LN in Gympie and the Brisbane gang operating from home QTHs. Nothing was heard of the Bundaberg crew although 4XG and 4ZU had their beams aimed north quite a bit. Signals between 4RT and 4ZU-4XG on 144 Mc. (Tamborine to Maleny) were R9 plus plus. Don't know whether the distance (85 miles) constitutes a record at present? 4DQ and 4XG-4ZU Toowoomba-Maleny, were S9 plus on 50 Mc. 4DQ was pleased with the performance of his four element array, a duplicate of the one in use by 4ZU on 50 Mc. also. The following Brisbane stations were contacted on either 50 or 144 Mc.: 4HR, 4RL, 4AW, 4KB, 4RY, and 4TY. Signals on 144 Mc. were heard in Ipswich (20 miles west of Brisbane) by 4CH from the following: 4TY, 4HR, 4XG and 4ZU. Contacts were made by 4TY and 4HR from their home QTHs but although the Maleny men were heard, 4CH could not be heard up there. In view of the good prizes to be won it was surprising that more stations did not participate.

5GF GOES MOBILE

From 5QR via 3YS we learn that 5GF has installed a mobile rig in his wagon, and on the 5/5/48 made a trip to Gawler, about 25 miles from Adelaide, and gave the boys a running commentary on the trip. They QSOed him right into Gawler, but when he (5GF) arrived at 5AX's place (at Gawler) Adelaide signals dropped out, evidently due to surrounding buildings, although the Adelaide boys could still copy 5GF, in fact 5RT, using a vertical antenna, got him S7. 5GF's rig was crystal controlled, about 25 to 30 watts input to 807 on phone, 6J6 converter to car radio for receiver and a vertical co-ax. dipole antenna. Most of the Adelaide boys were using horizontal antennae but they still seemed to get through OK. He also made a trip to the Adelaide hills and signals were S9 plus. Stations on included 5GL, 5GB, 5KG, 5HD, 5QR, 5RT and 5JD.

ACTIVITY IN VK6

6FC and 6GB have both been putting good signals into Bunbury, apparently for quite some time, but it was only recently that they have actually been heard. 6GS, with friend Rollo Evingham, took the latter's converter and receiver to the hill behind the High School, and heard the above call signs at S5-6, a distance of 97 miles. Same weekend 6LAW took portable to Mandurah and worked 6GS at Harvey and 6FO and 6GB in Perth, but signals not too good due mainly to very heavy QSB. May 1st saw the opening of 144 Mc. band with

five stations—6GB, 6DF, 6FU, 6KW, 6LW and all there dead on time. An enjoyable night was spent by all (especially 6LW), whilst the other four were using SCR522s from their home QTHs. This promises to be a very popular band and we hope to give news of some further contacts next month. May 9th 6KW's signals were heard by 6AG at Darlington, a distance of 15 miles. This is the record in VK6 up to the time of writing.

144 Mc. DIGEST

From Bill Hartley

Proceedings in the 144 Mc. spectrum now in use are very interesting as somehow this band seems to be a very clean one, that is devoid of harmonics and also to date aircraft flutter effects. Working conditions seem to be superior to the old 166 Mc. band in that signals are stronger than of yore, probably due to the change over to horizontal polarisation. Some signals are weaker during daylight operation and until time and experiment provides the answer, it can only be conjectured that location, time and weather conditions play their part.

There is no doubt that a horizontal array certainly provides a greater signal intensity and would be more the logical medium for use on field days and point to point communication than as at present. The working of local contacts can be well provided for by vertical polarisation. The happy medium can be attained where both forms of antennae could be used, the vertical as a scouter or the means of having a quick look around the band, and the horizontal providing a strong directional signal where needed. Rotating the beam to all points of the compass and, at the same time, carrying out a clean sweep of the band at each compass setting is found to be slow and laborious. As things stand quite a few stations are missing out through being outside the main lobe of the beam. Cross polarisation is also bound to occur, and can be overcome, once the signal is found, by changing over to the appropriate antenna.

Activity for the month showed that the old 166 guard are slowing marching into place, the two stalwarts in VK3 in 3ACM and 3EM are now making the pace for their second hundred contacts via the v.h.f.s. 3EM is running 20 watts to the modified SCR522 plus a receiver of the same tribe. 3AKI opened on the new band with a new shack and a new signal from a pair of CV6s p.p. osc., 6V6 modulator, 10 watts. 3LH makes himself heard with a mod. osc. using p.p. VT90s, rated input is 4 watts!, together with a 9002 super regen. Similar type of outfit is in use at 3HE, who in making his debut is making himself heard well even with 3 watts.

3CI at Foster now on 144.1 Mc., working on Sundays from Mt. Fatigue, will be a valuable link on field day operations. Gear in use is a SCR522 with 10 watts; coupled to either a Franklin series phased array or the six element wide spaced stacked beam. 3TO is another newcomer to the v.h.f. and for the present is using a modified BC824 at 15 watts and a 9002 super regen to a simple horizontal dipole. 3ABA/3YS are on 144 Mc. also now using same rig as that on 166 Mc. Antenna is a horizontal three element beam and a.s.v. receiver. They have had a few QSOs and find the band busy. Bill Hartley gave them very acceptable assistance in erecting their beam which is on top of their 50 Mc. beam 85 feet high.

Things are booming in VK2 at present according to 2VW, where the following are active: 2VW, 2BZ, 2WJ, 2ACL, 2AEG, 2DF, 2PF, 2LZ, 2AFO, 2NQ, 2NQ, 2MQ, 2UV, 2ABB, 2OC, 2ADT and 2BU. 2VW is on the job with 15 watts input to a SCR522 transmitter in to a four element horizontal beam and receives on a AR301. 2LZ up at Wentworth Falls in the Blue Mountains is understood to work a 80 mile hop to 2ADT at Cessnock. 2VW's beam must be f.b. as his signals find their way into 2OC's (of Wyong) indoor antenna. 2KI still interested in radio-controlled model aircraft.

144 Mc. activity in VK4 started off with a great burst of activity, the only casualty being poor old 50 Mc., which is somewhat neglected at the moment. However with the mid-winter peak in sporadic E approaching we may enjoy a little Interstate DX 'ere long. Most of the locals are using SCR522s for transmitters and quite a few for receivers also. 4 and 6 element beams are popular as antennae and signals across the town have been extremely good. 4ZU tried out the 16 element beam described in the Handbook and as the book says it yielded a "performance which is truly outstanding." 4TY at Manly, some 8 or 10 miles out of town, is a very handy link—something we never had on "6."

The fifth district is slow on making the new band, this no doubt due to much 50 Mc. tests. 5JD has a most interesting transmitter with a 6AC7 e.o., sixth harmonic output, tripling with p.p. RL7a driving a 832; both 6RQ and 6RV have been on as well.

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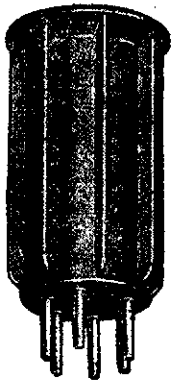
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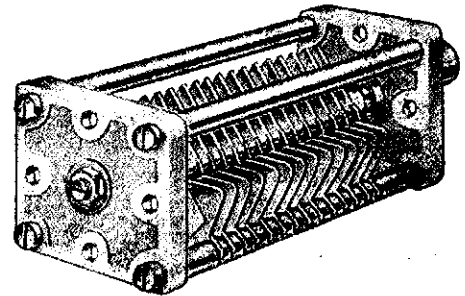
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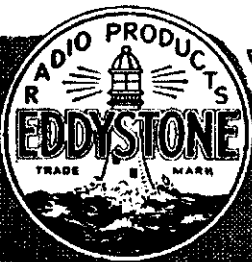
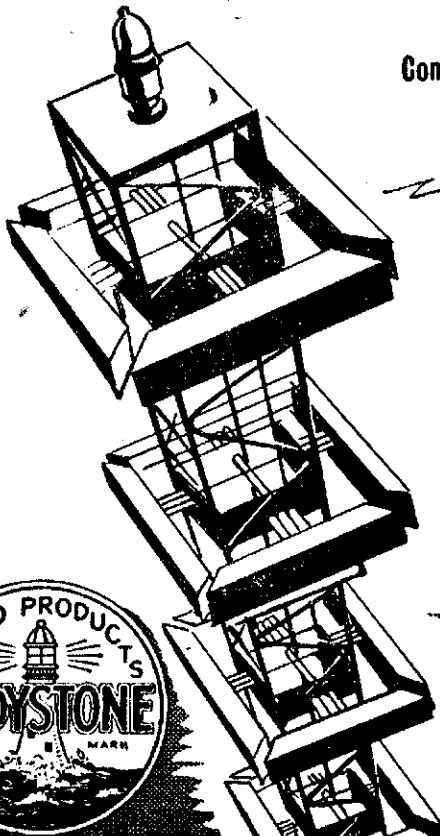
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VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

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Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL

FREQUENCY ALLOCATIONS

As mentioned in the Editorial in this issue, certain new frequency allocations have been made as a result of Federal Executive's negotiations with the P.M.G.'s Department. Listed below are the bands that may be used as from the 1st June, 1948.

2.5 to 3.8 Mc.	—A1, A3.
7.0 to 7.2 Mc.	—A1, A3.
14.0 to 14.4 Mc.	—A1, A3.
28.96 to 27.23 Mc.	—A1, A3, FM.
28.0 to 30.0 Mc.	—A1, A3.
50.0 to 54.0 Mc.	—A1, A2, A3, FM.
144 to 148 Mc.	—A0, A1, A2, A3, FM, Pulse.
288 to 296 Mc.	—A0, A1, A2, A3, FM, Pulse.
576 to 585 Mc.	—A0, A1, A2, A3, FM, Pulse.
1345 to 1425 Mc.	—A0, A1, A2, A3, FM, Pulse.
2300 to 2450 Mc.	—A0, A1, A2, A3, FM, Pulse.
6650 to 6850 Mc.	—A0, A1, A2, A3, FM, Pulse.
10000 to 10600 Mc.	—A0, A1, A2, A3, FM, Pulse.
21000 to 22000 Mc.	—A0, A1, A2, A3, FM, Pulse.
30000 and higher	—A0, A1, A2, A3, FM, Pulse.

ANNUAL REPORT

The following is the President's report submitted to the Easter Convention of the W.I.A.

First of all, as you are no doubt aware, most of the time has been occupied with the finalising of the Federal Constitution under which we are operating, and I would like to see a hearty vote of thanks recorded to Alex Glyne for the work he has done in this direction. He has put many hours of work into this onerous job and I feel sure he must be very glad that the task has come to an end.

During the year we have undertaken the printing of membership and Contest Certificates. Although the previous Convention only requested membership certificates, we felt it was necessary to furnish certificates for the 1946 and 1947 Contests, as we have had many enquiries from overseas stations and our prestige was at stake. Whilst they are possibly more expensive than was first anticipated, we had quite a number printed which should last for about two or three years and possibly longer. We asked during the year for an advance from Divisions to defray expenses and we had a favorable response from most of the Divisions. The actual amount requested from each Division was based upon approximate figures of membership in the Divisions. In the case of VK3 we asked for £25, VK2 £25, VK4 £10, VK5 £20, VK6 £15, and VK7 £5, a total of £100, the estimated cost of the Certificates. Actually the cost was a few pounds more than that figure. On the present per capita basis for Divisions, the amount requested would now be for VK3 £43/10/-, VK2 £29/10/-, VK5 £18/5/-, VK4 £10/10/-, VK6 £7/15/-, and VK7 £5, a total of £114/10/-.

reasonably expect the two Divisions who have not forwarded the amounts requested, to send them in the near future.

Post Master General's Department

Our relations during the year have been most cordial with the Department and a mutual spirit of co-operation has resulted from all our negotiations with them. We have recently supplied a table of our eventual frequency requirements to them, and as a result of our discussions with them has come the release from 1st May of the 144 to 148 Mc. band. The table covers all our requirements in frequencies and not overlooking the types of emission anticipated. There are several other matters in regard to regulations on which discussions are still taking place. During the year, after many initial setbacks, we obtained an amateur licence for the National Expedition ship, the "Wyatt Earp" and the unusual call sign, VK1AA. I feel sure that our endeavours as far as Federal Executive is concerned, will be amplified in the course of the Convention.

Federal Executive Administration

The volume of work of Federal Executive has tended to increase during the year, and some idea of the actual extent may be gained when it is mentioned that the Federal Secretary handled 539 separate communications in addition to the minutes of 18 Executive meetings. Meetings have been necessary fortnightly to cover the large volume of work entailed. In connection with negotiations with the P.M.G.'s Department, Divisions should realise that a great deal of time is necessary to enable discussions to be held with those officers. Some preliminary work has been completed on the filling in of Contest Certificates which seems like becoming a major task. Quite a deal of administrative work may be obviated by prompt replies by Divisions to correspondence.

Technical Development

As regards the technical committee, the Executive has directed its forces on the Constitution and on the discussion of a technical programme, and it is felt that as so much time has been spent on the first subject encouragement should be given to articles in the Magazine on new techniques, and we should develop that programme to a more practical state in the task of preparing a companion publication to the Handbook.

Defence Radio Reserve

As Mr. Marshall, who has been co-opted by the Federal Executive, will attend with Wing Commander Reddrop, of the R.A.A.F., he will give you the latest developments in that regard. Suffice it to say here that that progress is very satisfactory, and when details are finalised, Divisions will be notified.

I.A.R.U.

The various issues of the I.A.R.U. Calendar have been reprinted in "Amateur Radio" generally in

full and occasionally in abridged form. News letters to the Divisions on current happenings were issued to December, but thereafter there was so little additional news to that covered by letter by the Federal Secretary, that they were discontinued.

Federal QSL Bureau

The Bureau, except for one brief period during the year on a matter of finance, functioned very smoothly and a total of 65,469 cards were handled for the 11 months, or an average of 6,000 per month. It appears that cards handled through this Bureau, will always total at least 75,000 per annum. The cost of handling the cards mentioned amounted to £5/10/7½, or a trifle over twopence per 100 cards and is only one-tenth the expense of Overseas Bureaux. The low cost may be attributed to the re-directional facilities used by the Manager. It is considered that the time is appropriate for the Federal QSL Bureau address to be altered to 23 Lundale Street, Box Hill, E.11, Vic., to enable the heavy despatches from overseas to be directed to the Manager and avoid consequent choking of the Box.

Federal Contests

The DX Contest appeared to be a great success, judging by the favorable comments received from everywhere, and the fact that some 100 logs were received from VKs and 200 odd from overseas. The C.W. Sections were the most popular, the number of phone entries being most disappointing and the receiving section poorly patronised. The prizes were good and some very fine equipment was made available by manufacturers. Some prizes held over from 1946 were made available for this Contest. The publicity was good and most countries were aware of the Rules. It is regrettable that the R.S.G.B. published the incorrect Rules. A number of late overseas logs were received and it is suggested that in future contests, the time for them be extended by a month. There were some suggestions by VK stations that some official Government Bureau be approached to donate some tokens, representative of Australia, to overseas winners. This would not only add to the incentive and interest but would be excellent publicity for the Contest.

The National Field Day Contest was almost a complete failure as only two logs were received. Considering the amount of portable equipment that must be in use, the lack of interest is disappointing and difficult to explain. Adequate publicity was given in "Amateur Radio" and over Divisional stations, and the apathy is regrettable and suggestions for popularising the Contest would be welcome.

Federal Traffic Channels

Schedules have been maintained on an average of two nights per week, and the total number of contacts for the year were 364. N.S.W. Division maintained the most consistent schedules during the year, but a big improvement can be made in the

keeping of schedules generally. It is thought that this improvement could be achieved by having a standby operator for each Divisional Traffic Manager. Interference has been another source of worry, but if some plan is evolved for schedule keeping this difficulty may be overcome.

"Amateur Radio"

The Federal Executive has maintained contact with the Editor of the Magazine during the year and very good co-operation has been achieved. The campaign for the technical development of the Institute has already been dealt with, and this will be done through "Amateur Radio."

Finance

The Treasurer's report is appended, and it is becoming increasingly obvious that the present capitation fees are not sufficient to meet Federal expenditure. This will form the subject of some discussion during this Convention.

General

One of the points of some concern during the year has been the slowness with which we have received ratification of the resolutions of the last Convention. It was with this idea in mind that we will request each Delegate to deposit with the Secretary his instructions for voting on the various items, so that in future the minutes of the Convention will show the Division concerned which items they must ratify. A progressive year of endeavour is expected both with the Divisions and the P.M.G.'s. Department.

CONVENTION MATTERS

It was resolved at the 1948 Annual Federal Convention that anyone requiring a copy of the Federal Constitution, should make application through his Divisional Secretary for same.

Another matter of perhaps greater importance, is that of the large number of commercials appearing on our bands. It behoves every Amateur hearing and able to identify any part or distinguishing characteristics of such transmissions to report same to his Divisional Secretary who will forward this information to Federal Executive for collation and submission to the P.M.G.'s. Department. Only by such concerted and individual effort can we hope to keep our channels clear of these commercial "pirates." Let's have that done, fellows.

A matter of some concern and universal import is the interference, in some cases unwittingly, being caused by Amateurs to the Official Broadcasts of the Divisions and also to the Federal Traffic Network. These services are for your benefit—keep those channels clear. In the near future, a revised list of times and frequencies will be published. Note well, and help us to help you.

DX C.C. LISTING

Applicants for the DX C.C. should make sure that the cards submitted show all details of confirmation of the QSO. By so doing they will save themselves possible disappointment. It is also recommended that one or two cards over the bare hundred should be submitted. Who is going to be the first to make Phone DX C.C.?

PHONE NU C.W.		
VK3CN	108	(3)
VK2EO	103	(7)
VK3EK	102	(10)
OPEN		
VK3BZ	122	(5)
VK2DI	117	(2)
VK3HG	112	(4)
VK3KX	106	(1)
VK3MC	106	(6)
VK4HR	101	(9)
VK2ACX	100	(8)

Figures in parenthesis indicate membership number to DX C.C.

Please note that the only official changes to the Countries List as printed in February 1947 Q&T are:

- Ile of Man GD
- Lebanon Republic ARS
- Pakistan AP
- San Marino

The following changes have also been made to prefixes of various countries (subject to further change when the Atlantic City determinations take effect):—

- Andaman & Nicobar Is. VU5
- Austria MB9, OE
- Basutoland ZS4
- Corsica FC
- Cyprus MD7, Z04
- Dodecanese Islands SV5
- Eritrea MD3, MI3
- Egypt (& Suez Canal Zone) SU, MD5
- Iraq Y1, MD6
- Korea HL
- Laccadive Islands VU4
- Libya MC1, MD1, MD2
- Maldiv Islands VS2
- Marshall Islands KX6
- Somaliland, Italian MD4
- Syrian Republic AR1

CONTEST NEWS

Two further logs for the last Australian DX Contest have been received.

- HH2CW 882 Points c.w.
- HP4Q 84 Points c.w.

The first post-war Trans-Tasman Contest is over and although not a great number entered, those that did had a good time. This contest illustrated the need for a universal type of exchange of serial numbers. Some confusion arose due to the fact that the ZLs also had a contest running on 3.5 Mc., and were using our DX Contest type of serial exchange. The yardstick of success of these Contests depends on the logs that are sent in—please send in your log even if you only had a few contacts—they assist in the checking also!

FEDERAL IONOSPHERIC AND TROPOSPHERIC SERVICE

A Federal Ionospheric and Tropospheric Subcommittee has been formed and consists of Messrs. Oliver Moriarty, Doug Anderson (VK3ZW) and Neil Smith (VK3YY). This committee has undertaken

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WIRELESS INSTITUTE OF AUSTRALIA—FEDERAL EXECUTIVE

Statement of Receipts and Payments for the Year ended 31st March, 1948

RECEIPTS

Balance in Bank, 1st April, 1947	£33	0	8
Per Capita contributions from Divisions			
Queensland	£12	9	0
New South Wales	37	2	6
Victoria	79	15	0
South Australia	22	11	8
Western Australia	6	10	0
Tasmania	5	3	0
	163	11	2
Sale of Lapel Badges:—			
New South Wales	£6	18	6
Victoria	44	13	9
South Australia	20	14	9
Western Australia	6	18	6
Tasmania	5	5	9
	84	11	3
Certificates:—			
Queensland	£10	0	0
New South Wales	25	0	0
Victoria	25	0	0
Tasmania	5	0	0
	65	0	0
Contra Account—Victorian Division	15	0	0
	£346	18	1

PAYMENTS

Convention Expenses:—			
Minutes	£10	10	0
Expenses	18	9	
Advance W.A. Division			
A/c. Expenses	20	0	0
	£31	8	9
Lapel Badges	81	2	6
Certificates:—			
Competition Prize	£2	2	0
Certificate Design	8	8	0
Printing	100	13	0
	111	3	0
1947 Contest:—			
Printing	£1	13	6
Postages	3	2	0
	4	15	6
Typewriter overhaul			6
			6
Fees:—			
Renewal Code Address	£2	2	0
Licence for Station			
VK3WIA	1	0	0
	3	2	0
QSL Bureau Expenses			7
Printing and Stationery:—			0
N.S.W. Constitution	£3	3	0
General	4	15	9
	7	18	9
Petty Cash, Postages and Telegrams	11	17	11
Miscellaneous Expenses:—			
Entertaining J. M.			
Dobbyn	£2	18	0
Cheque Books	10	0	
	3	8	0
Refund advance by Victorian Division on A/c. W.A.	20	0	0
Contra Account—Victorian Division	15	0	0
	£289	1	5
Balance—Cash in Bank, 31st March, 1948	57	16	8
	£346	18	1

(Sgd.) P. EVANS, Honorary Treasurer.

I have examined the Cash Book, accounts and vouchers of the Federal Executive of the Wireless Institute of Australia for the year ended 31st March, 1948, and have obtained all the information and explanations requested. In my opinion the within statement correctly sets out the financial position of the Federal Executive as at 31st March, 1948, and the transactions for the year ended that date.

(Sgd.) F. K. HELSHAM, A.F.I.A., A.C.I.S.
Honorary Auditor.

TECHNICALLY in the know

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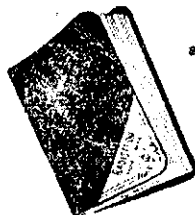
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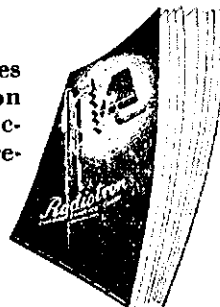
I. "Radiotronics"—quarto size—20 pages per issue—sections devoted to DESIGN, THEORY, CIRCUITS and VALVE DATA—published every other month. Handy filing covers are supplied with available back issues to "Radiotronics" subscribers.



II. Data Book—octavo size—150 sheets in loose leaf binder—comprehensive data on all Australian-made receiving types—new and revised sheets released periodically.



III. Valve Charts—quarto size—36 pages covering characteristics, classification tables, socket connections—special section on Australian-made types—comprehensive substitution directory.



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to publish a chart which will give ionospheric predictions for all Australian States in addition to countries for each month. Weekly alterations will be sent via Federal Traffic Channels each Friday night in sufficient time for promulgation over the Divisional Stations during the Sunday morning broadcasts.

Dr. A. L. Green, head of the Ionospheric Prediction Service in Australia will provide the information and this Committee will be responsible for its dissemination.

AMATEUR CALL SIGN AMENDMENTS AS AT 1st MAY, 1948

- Alteration in Call, Address, etc.
- VK2AJE—B. L. Mills, 57 Salisbury Rd., Rose Bay.
 - 2AQJ—G. A. Ahlstrom, 23 Manchester St., Dulwich Hill, N.S.W.
 - 2IQ—F. R. Trebarne, 23 Badgery Ave., Homebush.
 - 2MC—W. R. Attwood, 126 Denison St., West Tamworth.
 - 2QA—(In lieu of VK3SE)—J. Russell, 116 Bogan St., Nyngon.
 - 2ZB—G. J. G. (of VK3SF)—N. C. Hannaford, 91 Parramatta Rd., Concord.
 - VK3ACW—C. W. Welch, Bank St., Avenel, Vic.
 - 3ARW—C. R. White, 89 Ballarat St., Hamilton.
 - 3CJ—C. J. Manning, Unwin St., Templestowe.
 - 3HI (in lieu of VK4LR)—L. G. Reynolds, 9 Darling Rd., East Malvern, S.E.5.
 - 3IL—L. E. Mahony, O.T.C. Radio Station, Ballarat Rd., Braybrook.
 - 3YO—C. Woodward, Gabriel Ave., East Malvern.
 - VK4BJ—J. G. Brown, 48 Lamb St., South Bundaberg, Qld.
 - 4CS—R. M. Cameron, Kerry Rd., Archerfield.
 - VK9YY (in lieu of VK7YY)—W. W. Watson, O.T.C. Radio Station, Wewak, T.P.N.G.

- New Issues**
- VK2AQQ—W. W. Turnbull, 11 Ellalong Rd., Cremorne.
 - 2ATS—T. R. Stockman, 17 Averu St., Inverell.
 - 2MZ—Hurstville District Amateur Radio Club, C.W.A. Rooms, Forest Rd., Hurstville.
 - 2OK—G. H. Vardy, 2 "Lancia" Flats, Wiugawarra St., Dubbo.
 - 2UK—G. E. Dennys, "Bradfield," Maranar Rd., Towradgi via Corrimal East.
 - 2VE—E. W. Bierre, 12 Malpas Court, 26 New South Head Rd., Edgecliff.
 - 2VH—A. J. Ward, 120 Gipps St., Woolongong.
 - 2VZ—Dr. F. W. Ross, 188 Brisbane St., Dubbo.
 - VK3AFM—G. C. Billings, 8 Munro St., Armadale, S.E.3.
 - 3AIF—A. J. Foster, 46 Maude St., Geelong.
 - 3OK—J. T. Pease, c/o. "Kavon Downs," Diggers Rest.
 - 3SF—R. Garth, 1 Margtmary Ave., Preston.
 - 3TV—A. C. Styles, 45 Brisdale St., Maffra.
 - 3VE—V. W. Harrison, 65 Mountain View Rd., North Balwyn (Portable).

- 3VU—R. G. F. Gatt, 188 Swallow St., Shepparton.
 - 3WC—P. J. Grigg, 3 Philipott St., Geelong East (Portable).
 - VK4CF—G. G. Cairns, 11 Vulture St., West End, Brisbane.
 - 4CW—J. Worth, 17a Rowland St., Bundaberg.
 - 4FA—A. Field, A.W.A. Aviation Section, Garbutt, Townsville.
 - 4GM—G. W. Mullins, M.V. Idle Hour, Smith St., Deagon.
 - 4JA—J. T. Marston, Orana St., Belmont.
 - 4MD—M. M. Dwyer, Yarrabin St., Coorparoo.
 - 4MG—L. G. Merchin, Hillier St., (P.O. Box 58), Richmond, Qld.
 - 4RA—R. A. Stephens, Coorharaba Hill, Gympie.
 - 4ZI—E. D. Woods, Coastal Radio Station, Thursday Island.
 - VK5CA—B. W. Austin, 34 Fisher St., Fullarton.
 - 5EF—F. L. Johnson, 11 Clifton St., Maylands.
 - 5GO—E. L. Willoughby, c/o. W. Thomas, 40 Fairfield St., Unley.
 - 5GS—G. E. Mathews, c/o. 5AU, Anstey St., Port Augusta.
 - VK6NC—N. C. Craigie, 71 McKenzie St., Wembley Park, W.A.
 - VK7KB—Dr. I. R. Pearson, 3 Amy St., Burnie, Tas.
 - 7MI—G. A. Mottershead, Macquarie Island, Antarctic Expedition.
 - VK9BR—W. Bruce, Murray Barracks, Three Mile, Port Moresby, T.P.N.G.
- Correction.—VK5LU was wrongly stated in the new call sign list as belonging to C. S. Schick. The correct call for this station is VK6JP.

FEDERAL QSL BUREAU
RAY JONES (VK3RJ) MANAGER

Harry Paston (W2OAA), 226 Coligni Avenue, New Rochelle, N.Y., U.S.A., requests that any station who contacted him when he was W2OAA/J8 in 1946 and who did not receive a card for the contact should drop him a note to the above address and the card will be forthcoming by return mail.

Recently in Melbourne as a member of a visiting "Fortress" from the Phillipines, one of the pilots paid a return visit after an absence of several years. He was formerly a W8 but now takes a hand in running KALAA along with other Hams. Official duties and the shortness of his visit to Melbourne prevented his attendance at any Divisional meetings. Further word from Jim Wetherell (G5UB/P) indicates that the recent fire on the "Wairuna" did not damage the radio equipment. However owing to the slow turn-round of the vessel at terminal and other ports it is at the moment doubtful if the Company will schedule the vessel for a further trip to Australia.

A bundle of cards came to hand from CT1JS, who many VKs worked pre-war. Most of the cards however relate to post-war contacts during 1946

when prior to the restoration of licenses in Portugal our friend was active as 1JS without any prefix.

The I.A.R.U. have given notice in March "QST" that the special endorsement for W.A.C. on 28 Mc. either phone or c.w. will be withdrawn as from 30th June, 1948. The I.A.R.U. feel that there is now no need for special encouragement for Hams to use the 28 Mc. band. In lieu however, a special endorsement for W.A.C. 50 Mc. has been instituted. Who will be the first VK applicant?

An interesting QSL in that of ZC1AL, the station of the Arab Legion, with QSL address stated as Post Office Meftaq, Transjordan. The card supplies the following information: "Transjordan became an independent kingdom ruled by H.R.H. King Abdullah in 1946" and therefore ZC1 stations cannot be accepted for B.E.R.T.A. and W.B.E. Certificates. The Arab Legion is the National Army of Transjordan.

Following are some DX QTHs that have come to hand:—

- FK8AB—John Duplat, Noumea, New Calendonia.
- EK1IT—Herb Plummer, Box 57, British P.O., Tangler.
- MD7DA—D. MacDonnell, Cyprus Sig Squ., M.E. L.F. 3.
- ET3AF—Harry Dell, Box 858, Adlis Ababa, Ethiopia.
- VS9ET—Eddie Cary, R.A.F., Sharjah, Trucial Oman, Arabia.
- YJ1AB—P. C. Eedt, Vila, New Hebrides.
- VP2GB—G. Evans, Box 62, St. Georges, Grenada, B.W.I.

NEW SOUTH WALES
NORTH COAST AND TABLELANDS

2ON moved to Dapto sent the rotary beam to train; the best Lindsay, this zone is listening for you. Kempsey kept going by 2KN, 2ASF and 2GH. 2ABY holding the fort at Taree works 7 and 14 Mc. and has a c.r.o. in action; runs 100 watts to p.p. 834. 2WQ and 2JC both active on 7 Mc. 2ATS has new antenna with good results. 2UN thinking of going to 28 Mc. and planning new antennae.

2JK lost amongst the 14 Mc. DX, getting his share too; who said he couldn't work DX through that line noise. 2ZX back from VK6 and on again with nice solid phone on 7 Mc. 2SH has new folded dipole and mike. He has been having many a late session while the XYL is away. 2PA enjoyed Ham hospitality whilst in Sydney recently, met about 50 Hams in all.

NEWCASTLE

2ADX has three elements going nicely on 28 Mc. 2AKP was so impressed that 28 Mc. is next for him. 2NQ of c.w. fame is on phone, 10 watts of it, an 818 to follow. 2ANG about to cut fractured section out of 7 Mc. rock, hence nil heard of him on 28 Mc. 2TE also with three elements on 28 Mc. and plenty of DX. 2AFS tuning up 28 Mc. beam, good re-

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

- VK2AJB—G. C. Curle R.A.A.F.
- VK2BQ—F. Easton R.A.A.F.
- VK2JV—C. D. Roberts A.M.F.
- VK2VJ—V. J. Jarvis R.A.A.F.
- VK2YK—W. Abbott R.A.A.F.
- VK3DQ—J. D. Morris A.M.F.
- VK3HN—J. McCandlish A.M.F.
- VK3IE and VK3EM—J. Mann R.A.N.
- VK3NG—N. E. Gunter M.N.
- VK3OR—M. D. Orr R.A.A.F.
- VK3OW—G. L. Teapleton R.A.A.F.
- VK3PL—J. L. Colthrup R.A.A.F.
- VK3PV—R. P. Veall A.M.F.
- VK3SF—S. W. Jones A.M.F.
- VK3UW—J. A. Burrage R.A.A.F.
- VK3VE—J. E. Shaddon R.A.A.F.
- VK4DR—D. Laws A.M.F.
- VK4FS—E. J. Starr R.A.A.F.
- VK4FR—R. Allen R.A.A.F.
- VK5AF—C. A. Ives R.A.A.F.
- VK5BL—Brian James R.A.A.F.
- VK5BW—G. Phillips A.M.F.
- VK6GR—A. H. G. Rippen R.A.N.
- VK6JG—J. E. Goddard R.A.A.F.
- VK6KS—K. Anderson A.M.F.
- VK6PP—P. P. Paterson R.A.A.F.

We are indebted to VK2ALX, VK2HZ, South Australian Divisional Council, and VK6AH for some corrections and alterations to the above list.

We wish to finalise the list of names above within the next month as the Perpetual Trophy for the Remembrance Day Contest is to be inscribed with the above list of names. Please send any information, changes to above list, etc., to Federal Secretary, Box 2611W, G.P.O., Melbourne, at the earliest.

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sults with Telcon and tee match. 2CS on last lap now, building transmitter, all else ready for big switch.

2AGY cleaned up modulation troubles and preparing a 28 Mc. beam. 2BZ most impressed with v.h.f.s, and doing good work. 2AHA keen as ever and works all bands in between straightening out club rules and regulations. The Newcastle Radio Club was formed on 23rd April. 2AGD experimenting with crystal filters when not DXing on 28 Mc. 2FP still looking for eight more countries to make up 100 post-war on 28 Mc. with 35 watts, using the same 807.

COALFIELDS AND LAKES

2AMU on 28 Mc. regularly, DX no trouble. 2RU a sticker on 50 Mc. with a new beam. 2AEZ heard chasing the elusive stuff on 14 Mc. 2TX, of Wyrong, is making a comeback and was heard on 28 Mc. 2JZ another O.T. on 28 Mc., so guess Alex will shortly make the v.h.f.s. 2TY using vee beam on 28 Mc., look for him on 144 Mc. also. 2ER chews it on 7 Mc.

3KZ nears his 28 Mc. phone W.A.S., 40 confirmed all with 25 watts and two tube blooper!! Three elements on 28 Mc. is under way. 2XT has nice gear and pole erected for beam. 2PZ busy on 7 Mc. when time permits. 2MK nil to report. 2YL not too active, chiefly trying two half waves in phase on 28 Mc. 2ADT going higher now on 144 Mc.; hearing 2LZ and 2PI from Mountains; 90 up post-war, on 28 Mc. phone.

SOUTH COAST AND TABLELANDS

Signs of activity are great in Wollongong, many new stations making their appearance. The Wollongong Amateur Radio Club is in full swing with 2AIP as President, 2MT Vice-President, old "2CJ" Treasurer, 2WV Secretary, 2IK Publicity. With 38 members the Club is helping Wollongong's radio enthusiasts into the Ham ranks. 2MU building 100 watts to p.p. 807s, a v.f.o. to come along shortly. O.T. 2WP is back again with a Type A Mark III 2WP, 2GG and 2DO were all in the same unit during the fracas. 2AGZ has 12 tubes of double conversion under way; lost his 8JK in a wind storm recently.

2LA been in Wollongong some time—wall papering only allows a little time on 7 Mc. c.w. Reported 2ON also migrated to the 'Gong; enough down there for a nice field day. 2PI at Canberra, with a noise silencer that does work; has QRM from 2k.w. in same room, 10 k.w. from 2CY 200 yards away and 200 k.w. two miles away, what a QTH!! 2JQ using a command transmitter as v.f.o., and was recently heard from 2NS whilst visiting Bathurst. 2JM, Canberra, on 7 Mc. with 7 watts to 6A6 and five tube super. Also active in A.C.T. are 2GU, 2PM, 2TV and 2AGG but no news.

2OY, Goulburn, and 2JJS, Junee, active. 2PN, 2TA, 2TC, 2AKE not heard during last month but the guess is they are building for 14 Mc. 2ALS on 7 and 14 Mc. and doing nicely with lower power rig. 2OW, Temora, using a No. 11 but bigger things being planned. 2AIK, West Wyalong, has dipole and v.f.o. completed, the latter allowing Cess to move away from the crowds. Thanks to 2UK and 2JM for news. 2DO on 7 Mc. for any zone news.

SOUTHERN ZONE

2VK busy servicing, but will be into the QRM shortly. 2EU almost finished new rig, rack and panel; not so fortunate with the house project. Now that the 55 feet tower is upright 2OJ needs a little patience and dural tubing to finish the job. 2QD back in Albury from rural life. 2QE is on the way with three stages finishing with 807, may be a little time yet. 2APW building new oscillator in between junior QRM. 2JA erecting full wave job for 7 Mc. 2ANQ with toil and other hobbies is very busy. Notes from other towns to 2OJ please.

VICTORIA

At the May general meeting of the Division a lecture on Radio Frequency Heating was delivered by Mr. J. W. Bayliss, B.Sc. Mr. Bayliss, who has only recently arrived from England to work for Australian General Electric Co., displayed a detailed knowledge of his subject and stimulated much discussion. A film strip (with recorded sound effects) was shown, dealing with the fundamentals of electronic frequency changing, particularly in so far as radio frequency heating was concerned.

Apparatus for eddy current heating using low frequencies of the order of 500 Kc. and for dielectric heating using high frequencies of the order of 30 Mc. was illustrated. Using eddy current heating of conductors, skin effects become useful, and it is possible to heat treat the wearing surfaces of components such as gear wheels without affecting the toughness of the underlying material.

On the other hand, dielectric heating is useful in applications where the material (necessarily a dielectric with high loss factor) is heated uniformly throughout its mass. A common application is in the heating of plywood during the gluing process. Important problems are introduced into r.f. heating by changes in the electrical characteristics of the load as it warms up. In order to keep the load on the r.f. source constant, either the frequency must be varied or if crystal control is used then automatic motor tuning of the load circuit must be resorted to.

A keen interest was shown by those present in the problems of r.f. heating, and this was amply demonstrated by the numerous questions directed to the lecturer.

VICTORIAN QSL BUREAU SERVICE

The following information will be of interest to Victorian Amateurs:—

OUTWARD.—Bring your cards into the General Meeting OR Post to Outwards QSL Manager, Mr. F. O'Dwyer, 100 Thomas Street, Hampton, S.E. Price is 1d. per card. Cards to VE3 are free.

INWARD.—Collect cards at the General Meeting OR supply Inwards QSL Manager, Mr. G. Roper, 26 Lucas Street, Caulfield, S.E.8, with stamped addressed envelopes.

VICTORIAN DISPOSALS COMMITTEE

On Saturday and Sunday, 8th and 9th May, the Disposals Committee held another of their distributions (the last at the Batman Avenue Depot) which was considered by members to be very successful, particularly considering the large quantity and variety of equipment handled.

Although there are still more items to come for List No. 1 (all who still have SCR522s and AT5/AR5s on order will receive them), those who attended were able to take part in the distribution of many miscellaneous items, many of which were very popular and should be available again in the future, if members advise us that they require similar items.

Zone Disposals Representatives, acting on behalf of their members received very fair treatment, being in every case afforded first choice and/or a separate allocation based on the ratio of country to city membership. The result was that on the average the country member received exactly the same amount per head as the city member.

On a Zone basis the comparative amounts per member were as follows: City £1, North Western £2/5/-, North Eastern £1/18/3, South Eastern £1/12/3, South Western 9/8, Central Western 1/10 (there are separate arrangements being made for the Far North Western members because of their small membership and great distance from Melbourne). We thank those Zones who co-operated with us and helped to make it a success, particularly those Zones which kept their members fully informed regarding the information passed on to all Zone Secretaries by this Committee. One Zone, however, did not co-operate and, in addition, made false statements over the air, both before and after the distribution, which it spread would make it impossible for more equipment to be obtained both for all Victorian and Interstate members. We repeat our request not to pass on over the air any rumours or gossip you may hear, contact either your Zone Disposals Representative or this Committee to get the true facts.

Now that samples of a wide variety of items have been distributed, please write in to us and let us know of your future requirements, but owing to the large amount of work involved we regret that we cannot reply to individual letters, but we do want the reaction of members as a whole to this new type of distribution.

T.A.C. ACTIVITIES

Receiver Group.—At the April meeting of the Group Mr. Charles Quinn spoke on the possibilities of Amateur experimentation using home-built test equipment. Amongst the equipment demonstrated to the meeting were a multivibrator, vacuum tube voltmeter, transistor oscillator, signal tracer, and a valve tester.

T.A.C. General Meeting.—This meeting is devoted to general business. At the April meeting it was decided to proceed with VK3W1 transmissions using the 3.5 Mc. band. When this service commences, the Sunday broadcast will be radiated on 3.5 and 7 Mc. simultaneously.

The Committee approved of the purchase of the following new book for the lending library:—"Radio Handbook" (U.S.A.) 11th Edition.

V.H.F. Group Meetings.—At the May meeting further general discussion took place on the question of vertical versus horizontal polarisation for antennae in the new 144 Mc. band.

At the June meeting, Mr. C. W. Rollan, of the P.M.G.'s Department Research Staff, will give a lecture and demonstration on a subject of great interest to v.h.f. experimenters. Full details of the programme for this meeting will be given in the Sunday morning broadcast from VK3W1.

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on 15th July, 1948. Lectures are held on Monday and Thursday evenings 8-10 p.m. Persons desirous of being enrolled should communicate with the Secretary Box 2611W, G.P.O., Melbourne; Phone FJ 6997 from 9 to 5, or the Class Manager on either of the above evenings.

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CENTRAL WESTERN ZONE

It may be of interest to zone members to know we have 27 members in the zone, of these approximately 28 are active, and the remainder are associates. It is a surprise to count the numbers up, especially after the number of regulars who turn up for the zone hook-up. We welcome to the zone three new and active members: 3TY, Rnpayup; 3?? Minyip (call unknown); and 3ARM of Serviceton North. Hams just seem to be popping up everywhere these days.

The normal zone hook-up took place on Sunday, 9th and eight stations reported in, control station was off the official frequency of 7050 Kc. owing to a striking crystal, however the 7120 Kc. used seemed to be a much clearer spot, and will be used in future. Our apologies to 3XC and 3AGR, who were missed at control. Just a point chaps when calling into the hook-up don't call the control station six times and sign once as by that time somebody else has finished calling, signed off, and been missed, please mix the calls on a one by one basis.

Our old friend 3IQ has an excellent transmitter of very high IQ. Kevin called 3XC per land line the other day, "please listen for my 100 watts on 14 Mc.," says he. Bill listens very hard and hears nothing, down goes the beaut receiver to 7 Mc., Bill listens again and has the speaker almost dislocated. Kevin puts mitter back on to 14 Mc.; Bill, being a cunning bloke, leaves his receiver on 7 Mc. and still 3IQ rolls in. Don't know how you do it Kevin, but most transmitters change frequency when the dials are twiddled. 3TY is up to his ears in the joys of d.c. supply, and tickled pink the way the voltage goes up and down, never a dull moment. However Bill puts out a f.b. sig with four watts input.

3ARM coming over well with a modified FS6, but thinking of higher power. 3GN is the proud owner of a "Kingsley" 50 Mc. converter, but up to date nothing has disturbed the calm of 50 Mc. in Ararat. 3XC and 3AGR were welcome strangers to the hook-up; were mixed with the hook-up times, but should be right now. 3HL is still welding and working on the beam, what a worry these windmill towers and 14 Mc. beams must be. 3YW is having another burst of 50 Mc., and has re-built the receiver. Is looking forward to the visit of 3IV to Joel Joel shortly. Next hook-up will be on Sunday, 13th June, at 10 a.m. on 7120 Kc.

EASTERN ZONE

The Eastern Zone hook-up on Sunday nights at 2000 hours E.A.S.T. is proving very popular and

some excellent discussions take place. Most of the stations taking part have now got crystals for the spot frequency—3650 Kc. It is to be hoped that more of the Zone members will join in the hook-up or at least let us know what they are doing both on and off the air. The majority of the members of this zone are either actively engaged in the radio trade or farming pursuits with a few public servants, etc., tossed in.

3AEP is a dairy farmer who gets plenty of DX on 14 Mc. with a Type 3 Mark II. 3AHL spends 40 hours a week with the P.M.G. and the rest of the time plays about with an FS6. 3ANC is a newcomer who puts out a nice signal on 7 Mc. Spends some of his time working at the local milk depot. 3ALS is active also on 7 Mc. and keeps the local picture theatre going. 3BB is active on 7 Mc. and comes on 3.5 Mc. occasionally, but so far we do not know what else he does. Believe he also grinds his own crystals.

3DI lives with radio night and day. Has built up some very fine gear. Also makes recordings and is another who keeps the local picture show going. 3HZ is a busy man and besides keeping the local B class station on the air, finds time for QSOs on 50 and 3.5 Mc. 3IO has put in an appearance on 7 Mc. again. Hope hear more of you in the future. 3PR breeds Jerseys in his spare time and is active on 7 and 3.5 Mc. with a Type 3 Mark III, and getting out well. 3QZ is a very busy man with

the S.E.C. Is putting out very fine signal on 3.5 Mc. with Type 3 Mark II. 3SS is another who lives with radio day and night. Is doing a good job with the bushfire network.

3TH is another new Ham who milks cows for a living and is putting out a very nice signal on 7 Mc. with 12 watts to an 807. 3WE besides running the local paper and printing QSL cards, does some radio service work also. Bill gets out well on 7 and 3.5 Mc. and delights in telling the gang how many degrees below freezing point it is in Omeo. 3AEP also a man on the land. He fattens cattle for the Melbourne market. Is doing well on all bands with an AT5/ARS. 3LV using QRP on 3.5 Mc. and gets out well. He teaches the local children their ABC. 3VL Rex and 3YL Gwen (3US) are both very active on all bands including 50 Mc. They grow apples and put them in cool stores. 3VI and 3GO have been threatening to come on the air. The local "Regional" must keep them too busy. Well gang that is the lot for this month. Please let your correspondent know what you are doing so that we can keep the Eastern Zone on the map.

NORTH WESTERN ZONE

The two main topics of interest here are plans for the forthcoming Convention and the Disposals handout. By informal discussion between our members and also our intending visitors from the Eastern Zone it now seems likely that our annual Convention will be on Saturday and Sunday 28th and 29th August.

3BM's 3YL, who is all enthusiastic after her visit to the Eastern Zone Convention, has offered the gang the use of the 3BM home for our Convention. The novel idea is that the whole gang sleep there dormitory barracks fashion overnight, with unlimited opportunity for rag-chewing and general good-fellowship. Members of three other zones have expressed their intention to attend.

When at the last minute 3HR's arrangements fell through, 3BM had an unexpected and opportune business trip to the city, so took zone secretary 3OA and a 15 cwt. trailer which they loaded down to the axle with AT5/ARSs, A.C.U.s, SCR522s, I.F.F.s, generators, etc. With all that gear stacked in his junk box, Bruce feels fairly confident of visits from zone members in the near future!

Associate Wally Loveland never does things by halves. Ex-radar expert and now electrical engineer at Quambatook, he decided to get his ticket and just lived, ate, slept and dreamed Morse, technical and regs for a month, then sat for and passed the

T.A.C. MEETING NIGHTS

It is noted that the Technical Advisory Committee of the Victorian Division of the W.I.A. hold meetings at the Institute Rooms at 191 Queen Street, Melbourne, regularly throughout the month.

All members and visitors are cordially invited and welcome to attend these meetings at which many technical discussions and demonstrations take place. Meeting nights are as follows:—

- 1st Tuesday: Practical Work.
- 2nd Wednesday: V.H.F. Group.
- 3rd Tuesday: T.A.C. General Meeting.
- 4th Tuesday: Practical Work.
- 4th Wednesday: Receiver Group.
- 5th Tuesday: Practical Work.

VK3WI will announce the programme for these individual meetings in forthcoming broadcasts.

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A.O.C.P. Congrats Wally! When the licence arrives he will be ready to go on the air, and he'll be a great asset to our zone. Another keen associate is J. P. Troy, of Kerang, whom we expect to go for the ticket soon. He is taking a correspondence course. Ian Tippetton 3AIT has joined our hook-up with nice phone.

3ACE has nice speech quality phone on low power from the d.c. mains. 3CH has at last made a comeback with clear phone. Alf is owner-operator of the Birchip town d.e. supply, so he can't pass the buck if the voltage goes down while he's on! 3LU has modified his FS8 for 3.5 and 7 Mc. and now joins in our hook-ups. Operates from a spare room at Wally Lovelands. 3TI has built a new multi-purpose frequency meter with all mod. cons. His 28 Mc. rotary is ready to erect, but plans to have it up by (not at!) the next Convention. 3CE has waited so long for the AT5/AR8 that he just can't believe it now it has arrived. 3HR is extremely busy at his job so not on the air much. There was nearly a domestic crisis at 30A when the XYL thought the new aluminium front panel would make an i.b. oven slide! 3BM came upon an AR7 and Bendix frequency meter. Says he is not interested in further disposals gear. Probably because he's now broke!

SOUTH WESTERN ZONE

The Convention, held at Ballarat on 10th April, was opened by 3AMP who greeted those present, and was pleased to say that the attendance was the greatest of any post-war Convention. Those present were VK3 3AMP, 3AGV, 3RV, 3AL, 3ZL, 3BE, 3UT, 3BU, 3GR, 3IC, 3WT, 3APG, 3VA, 3HW, 3SE, 3ALM, 3ASV, 3DS, 3WN, 3AJR, 3BI and associate members Brian Stares and Alan Blomeley. 3AMP appealed for more members to put in an appearance in order to keep the interest in the zone alive and to get zone members to know each other better.

During the discussion following the reading of a letter re Disposals distribution it was the general opinion of those present that VK3WI could have been used to broadcast at intervals the fact that there had been a breakdown of arrangements.

Owing to lack of notification, the DX Contest as arranged at Warnambool fell through and it was the outcome of general discussion that a DX Contest would be held commencing on the King's Birthday week-end. Details are as follows: Contest will be held on 7 Mc. phone and c.w., and will commence at 12 p.m. Saturday and will conclude at 12 p.m. the following Saturday. VK4, VK6 and Northern Territory will count as DX phone contacts. Scoring will be five points phone, one point c.w. Continents will be used as multiplier as per A.R.R.L. list. An 813 will be first prize.

3AJR then donated an 832 for 144 Mc. trophy, so at the next Convention an 832 and an 813 will be awarded for the greatest distance worked on 144 Mc. inter-zone. 3KX moved that at the next Convention a competition be arranged for the most neatly constructed piece of equipment to be judged by ballot of all members present. 813 will be the first prize, 0-50 Ma. meter second prize (donated by 3KX).

At this stage discussion was re-opened on zone hook-ups and as an outcome 3GR moved that zone hook-ups be at 10 a.m. on first Sunday in each month instead of 10.30 a.m. as at present. The merits of 7 or 3.5 Mc. was discussed at length and on a show of hands it was decided to retain 7 Mc. as the band for zone hook-ups.

It was agreed to ask VK3WI to operate nearer the high frequency end of the band (7 Mc.) if possible in order to reduce QRM.

The secretary was asked to write to W.I.A. to suggest that something be done to increase the country coverage of VK3WI. Perhaps a 3.5 Mc. transmission or relay if possible.

The next Convention will be at Geelong, 6th November, 1948. Election of office-bearers for the next 12 months resulted in the following: President, 3BT; Vice-Presidents, 3ASV and 3BU; Secretary and Treasurer, 3BE; Committee, 3AMP, 3UT and 3IC.

A visit was paid to the various Ham stations on Saturday afternoon and on Sunday the boys visited 3BA studio and transmitter where 3AL gave a very excellent description of the workings of a commercial station. All present recorded a few words on the wire recorder, and strange to say practically everyone called CQ or is it so strange!!

QUEENSLAND

Owing to the absence of President 4AW at the general meeting held on Friday, 28th April, the chair was occupied by Vice-President 4VJ who certainly showed evidence of being cut out for the job. Mr. F. Nolan (4FN) gave a resume of doings at the Convention and Secretary 4XG read through the list of agenda items indicating as he went how the voting had gone. As 4FN's term as interim Federal Councillor had expired nominations were called for a new Federal Councillor and the follow-

ing were nominated: MacGregor 4ZU and F. Nolan 4FN.

The Secretary informed the meeting of the proposed morse class to start on the following Friday evening and asked those who would be willing to lend a hand to let him know. Several members offered assistance and 4PR and 4AO were detailed to take the first class. The affair received an unexpected boost at this stage when Mr. W. Argent (4KH) offered to place at the Institute's disposal an automatic keyer for class instruction. Needless to say the offer was accepted with alacrity and a vote of thanks was moved to 4KH for his gesture. Mr. G. Barr who learnt his code from the machine testified as to its effectiveness. The first class was availed of by some 20 odd members.

4XG outlined the proposed field days. The first being a v.h.f. event to be held on the first week-end in May. Unfortunately, owing to some torrential rain the event could not be held, the roads from Brisbane being blocked. The following Sunday yielded glorious weather however and the following went out: 4XG, 4RT, 4DK and 4ZU. For more details see "Fifty and Up." The low frequency field day will be run on the King's Birthday week-end in June and will be restricted to portable operation. The radio trade very generously donated some excellent pieces of gear for use as trophies, half of which is to be awarded for each of the field days.

We had the pleasure of a visit from the W.A. Secretary Mr. W. Coxon during April and in a flying visit to various shacks in the company of 4RT he met 4KB, 4HR, 4KS, 4AW and 4ZU. We were interested to hear of activity in VK6, particularly in the methods of running general meetings where the idea apparently is to keep all proceedings as short as possible and so make for greater variety and thus cater for all tastes. It would be interesting to hear members' views on this point here in VK4. In the opinion of the writer a lot of the time at general meetings is devoted to matters which could be left to Council to deal with.

4WI has added 144 Mc. to its frequencies for the Sunday broadcasts, making 7, 14, 50 and 144 Mc. channels available for coverage. 4AO raised a point at the general meeting as to the possibility of 28 Mc. transmission but 4FN, the operator of the station, explained that skip and variable conditions rendered the band unsuitable.

The "Food For Britain" donation box, kindly donated by Mr. F. Barncrough, duly made the rounds and yielded several pounds to the cause.

Disposals stocks have been, or will be the present time no information is available as to the likelihood of more being available.

SOUTH AUSTRALIA

The monthly general meeting for May was held on Tuesday at 17 Waymouth Street when Mr. Hal Austin (5AW) was the guest speaker, choosing as his subject "The Theory and Practice of Transformer Construction." The lecture was short and to the point, everyone present agreeing that lectures such as this given by a practical man who knew his subject, were always well worth listening to. A vote of thanks proposed by 5TR was received with acclamation.

Hal dealt at length with the various types of laminations, the various methods of insulation, and realising that the members were more interested in data, etc., associated with the construction of transformers, he gave on the blackboard a typical example of a Ham " tranny," and designed it theoretically, starting from scratch. This explanation (although we have all read the same thing in the handbook, etc.) was much better appreciated when given in such a practical manner. Hal also mentioned that "Radio News" for June, July and August contained an article which gives some of the most comprehensive data and instruction on transformer construction that it was possible to secure. The lecture closed with question time, and judging by the number and variety of the questions asked, the lecture was appreciated by all present. Just in closing, the various exhibits were returned OK, but they seemed to linger an unnecessary long time in the vicinity of 5WML.

A reply was received from Darcy Hancock (5RJ) accepting the position of country representative on the Council, although no mention was made of supplying any country notes. What about it o.m.?

No reply as yet from Frank Miller (5BP) regarding his acceptance of the position of country reporter. Can it be that the art of criticism is easily attained but seldom lived up to?

One of the important things dealt with at the Council meeting for April was the suggestion by 5BF that apparently (judging by the VK3 notes) the Sub-Editor did not know that country Hams existed and that more country news should be included in the notes. The "crack" concerning not knowing of the existence of country Hams was

passed over (all the Council members being gentlemen) but all present, including the Sub-Editor, were in complete agreement as to the inclusion of more country news. The Sub-Editor explained that as he was not a "so and so" magician and could not be expected to conjure news out of his hat (even if he possessed one) and without the co-operation of the country members themselves, no news would be available.

The further suggestion from 5BF that there was plenty of news available by listening on the various Amateur frequencies was pushed overboard when the Sub-Editor said that as the job of gathering in the news was purely a voluntary one, he had plenty of more important things to do. It was finally decided that as 5BF had raised the question, he would be the logical one to compile some news from his district and send it on to the Sub-Editor; also 5RJ, of Kadina, was to be approached to sit on the Council as country representative and possibly also forward some notes from his district. These two moves should materially assist the Sub-Editor, who frankly admitted that the only reason for writing such a lot of piffle in the last few months had been due to a lack of anything in the way of news, and you will admit that the VK3 column has never been lacking in quantity, if it has been in quality. (Editor's Note.—At time of going to press no country news had arrived from 5HP or 5RJ.)

The VK35 general meeting for May will long be remembered as the most exciting of all time. The reason being that in order to test the feeling of the meeting on the question of the increase in the price of the magazine, 5PS moved a motion to the effect that the magazine be not accepted until the start of the next VK5 financial year. This motion was purely an impersonal one and only designed to bring out in the open a lot of people who appeared to resent the increase in price of the "mag." Before passing judgment on this motion the whole position from the view of the VK5 member should be examined. Briefly it is this. When the VK5 Division altered its financial year to suit the policy of all Divisions having the same financial year (a good policy too), the members were debited with approximately eighteen months subscription. Having paid this, they were told that the magazine had now risen in price and a further two shillings per head was to be debited against them. This reaches the total sum of £45, either to come from the Division's funds in a lump sum or from the members personally. Whichever way it goes the member has to foot the bill and quite a number feel that they have had "one put over them." It is not the monetary aspect, but the principle that seems to bother them.

We have now the position at the start of the discussion. Some hard things were said about the magazine, and some very complimentary things were said, but all sides were agreed that the "mag." was a definite necessity and should not be discontinued. Pierce and furious waged the battle, finally culminating in a vote, which favoured the motion 42 votes to 35, several members having left the meeting before the battle clouds had appeared on the horizon. The vote was then discovered to be out of order owing to the fact that several associate members had voted, and under the VK5 rules associate members are not allowed to vote on matters of policy. 5PS at this stage having achieved results much greater than expected, offered to withdraw the motion, but as the seconder had now gone home it could not be done, and the meeting broke up in disorder with the decision to continue the discussion at a later date. All in all it was a great time, everybody enjoyed themselves, quite a number rose to their feet who had never had the temerity to do so before, this is all to the good, and even if nothing was achieved, at least it let a lot of people see that it is quite easy to get on one's feet and have one's say. Personally I think that the VK4 Magazine Committee would do well to examine the position in the light of the foregoing, which is a definite expression of feeling from a majority (a small one granted), but still a majority of Hams at a VK5 general meeting.

[The Magazine Committee did not increase the price of the Magazine, the decision to increase the price to 6d. per copy was made at a meeting of Federal Council.—Editor.]

I was talking to a new Ham the other day and asked him how he was doing, he said that he was doing fine. In answer to my question as to whether he had worked any DX he said, "Yes, one station on phone, an LU1 I haven't bothered to look it up yet to see where it is, but suppose it was one

Readers will notice that the Waltham Trading Co. has resumed advertising. Mr. L. Warner has assumed control of the business and will be pleased to see old and new clients.

of those Yanks up in the islands." Shades of Marconi, and I can remember when a South American was considered something to write home about. There's no doubt about it, Amateur Radio is fast losing all of its glamour.

I like the story about the VK5 Ham who became obsessed with the idea that moving around in his tummy was a radio valve. Nothing that anyone could do or say would convince him otherwise, and as his mental condition was deteriorating fast, his relatives called in "Doc" Barbier (5MD) and Ross Adey (5AJ) who finally agreed that the only way to cure the poor chap was to stage a mock operation and pretend to have removed a valve from his tummy. The Ham was quite agreeable to the operation, and while he was recovering from the anaesthetic, "Doc" and Ross secured an 807 valve and placed it beside the operating table. When the Ham was sufficiently roased "Doc" said, "well old chap, you were right and we were wrong, there certainly was a radio valve in your tummy, and there it is." Turning a wan face toward the 807, the Ham said weakly "That's not the radio valve in my tummy, mine is an 809!!"

5TT is reported as having a terrific signal these days which is said to be coming from a new antenna, the details of which are still in the "hush hush" stage. It must be good, because all the 28 Mc. gang are talking about it in tones of awe. What about giving "Amateur Radio" exclusive rights to the story Tom?

During the hurricane last month, 5LR was fast asleep when his wife nudged him and said "Jack, wake up, I just heard something go crack in your wireless room." "Let it go crack," said Jack and pulled the bed clothes over his head and snuggled back to safety. Oh! that such cowardice should be.

When 5PS worked YV5AB this month he was foolish enough to give the YV his nickname of "Jim." Now everybody is addressing him as "JEEEM" and asking him if he intends going to South America for his holidays.

Believe that the Burnside Police have been watching the very suspicious actions of two of the residents of that district who apparently ride around the streets in a green Morris 8/40, and stop at every pole and go through some peculiar antics with a little box to which is attached a small aerial. From the descriptions given it looks like 5RU and 5LAW, but what on earth would they be likely to be doing that for?

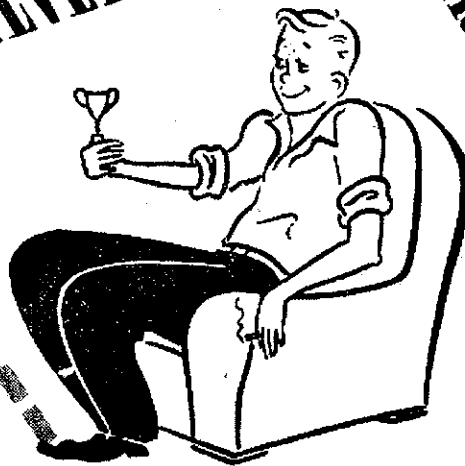
Was talking to one of our leading DX Kings the other day, when his young son came up and proudly announced that it was the first day of the month. When asked how he knew this fact he said proudly "because Dad's letters today all have front windows."

Ross Kelly built himself a "Plumbers' Delight" and is now looking for the bloke who christened it that name. Ross has called it plenty of choice names, but that name was never mentioned. Last seen he had a 30 foot ladder strapped to the side of the "Plumbers' ZZZZEMBX" and I would not be surprised to see his name in electric lights in silent keys any day now.

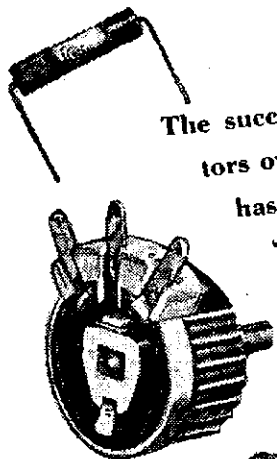
An unconfirmed rumour is going the rounds in VK5 to the effect that Merv. Brown (5MB) has cancelled his licence owing to being QRL in his vocation. If this be true, then all I can say is that it is indeed bad news. Merv and his call has been synonymous in VK5 with Amateur Radio for more years than I care to remember. Most of the call signs beginning with VK5M were students at his classes formed to assist the embryo Ham when assistance was hard to get. His philosophy of Amateur Radio, that of cutting out the "fills" and teaching only the necessary points, paid dividends, and many a top Amateur to-day is a perfect example of his ability in that direction. It is to be hoped that whoever is lucky enough to secure his discarded call sign will fully appreciate the heights to which he is attaining.

Apparently the poor conditions existing in VK5 lately have prompted most of my contacts for news to decide to re-build or take on some constructional work, the nature of which has prevented them from gleaming any of the said news, but with the addition of the promised country notes my task becomes much easier. A dickie bird has whispered in my ear that the Editor is considering buying me a blue pencil for my own use, and as I can take a hint with the best of them, this will be all for this month.

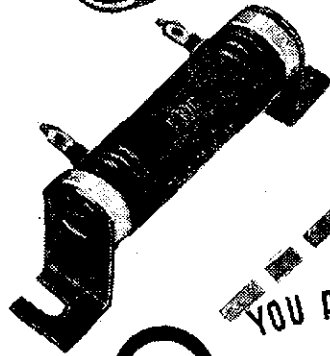
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WESTERN AUSTRALIA

The May meeting was held on Monday 10th. Over 60 members attended, and a new member—Don Dawson (call sign coming up)—was welcomed. YK6EL and YK6CN were visitors from Geraldton. We were very pleased to meet them in person. They had intended to visit more Perth shacks than they did, but their car broke down en route to North

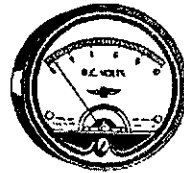
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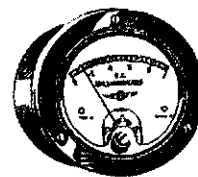
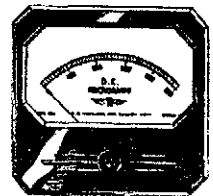
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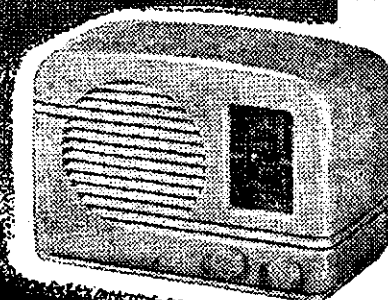
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TASMANIAN REPRESENTATIVE: C. J. Irvine, P.O. Box 375,
Launceston.

H.F.P.

Beach—(6HC and 6WT)—so their programme went "hay-wire." Anyway Ern and Cyril, we hope you have had a safe trip back home.

QSL Officer VK6RU proposed a new system for handling QSL cards in VK6. The idea is similar to that used in South Africa, where Amateurs buy gummed stickers at so much per 100, fix one sticker to each out-going card, and hand them in to the Bureau. The only money transaction with the QSL Officer is when one buys a sheet of stickers. The proposed rate is 5/- per 100 stickers. This idea met the approval of Council and all present at the General Meeting.

The result of the poll as to the general feeling in VK6 about "Gremlin," was that only 36 votes were recorded, and 26 were in favor of "Gremlin" continuing in his present form.

The President brought up the matter about subscriptions for 1948. The financial year for 1948 commenced on 1st March. Are YOU financial? The number of unfinancial members was not generally realised until 6WH made his statement. The idea of commencing the financial year on 1st March is to bring all VK States into line.

It was also announced by 6WH that any Disposals equipment available for VK6 Amateurs would be balloted for in future. Serial numbers of the equipment concerned would be drawn against the applicant's name. This system will obviate any picking and choosing and seems to be the fairest method of distribution.

At the conclusion of general business the usual rag-chews followed. Then 6AG gave us a chat on his recent visit to Brisbane. He did manage to see a few shacks whilst there, and remarked on the hospitality and co-operation of the VK's he did contact. (Thanks for helping our Secretary back to his camp VK4!—Ed.)

Both 6KW and 6AG then gave a short lecture on the two units which 6AG brought back as samples from VK4. It looks as though supply will not meet demand.

The meeting officially closed at 10.30 p.m. and we were clear of the building ahead of schedule for once.

PERSONALITIES

6AG is at present visiting VK4 on business. No doubt Wally is checking up on the possibility of obtaining some more Disposals equipment that will be of interest to VK6s. We are anxious to hear all about it Wally. 6GD was pleasantly surprised

to hear Horrie burning up the ether around 28 Mc. Heard some f.b. reports on him too. 6KW has his SCR522 working nicely on 144 Mc. What's your best DX on 14 Mc. Ron? 6RT has staged a comeback on 7 Mc. Len must have seen May's Personalities before they went to print. Pleased to hear you again Len. 6TX is a stalwart on 7 Mc., and Jack is considering giving some of his crystals a few rubs to dodge some of the QRM.

We don't hear 6MU because of skip distance, but we do hear the DX coming back to him. Nice work the YV on 50 watts. GAP is a 100 watt merchant and has earned a fine list of African countries. 6TB, "Tommy Baker's" new receiver is working and he puts Bayswater on the 28 Mc. map. 6HC is going 100 watts and is re-building the rig. We are missing his presence on 7 and 14 Mc., but know he will soon be back better than ever. 6MO spends a lot of time operating on all bands. He gives some really useful checks with his f.b. equipment at Watheroo. 6NW pounds the brass on 14 Mc. Guess he is hunting for a South American for his W.A.C. too.

6AW is getting a rig going on 144 Mc. and is apparently giving the DX bands the go-by for the time being. 6BC is really an O.T. and one of the first Hams in the VK6. Bert is still active on 7 and 14 Mc. and has some f.b. contacts considering his low power and QTH. 6DD not heard so often lately, but when there's DX on 28 and 14 Mc. John is right on to it. 6AS is at present quiet because of a move to Carnarvon but we are hoping he will get a small rig going from up there. How about a few lines, or even a QSO would be better Alee? 6DF haven't heard Morrie for ages. The beam will go rusty if you don't use it. 6AH and 6MH are too busy for Amateur Radio these days, and the 7 Mc. ZSs can't make out the quietness over there. How come Stan? 6DN is our c.w. DX man, but can't say I have heard him on lately.

6JS is buying up a stack of necessary parts to put 100 watts into an 813. We'll be looking forward to working you again Jack. 6FC re-broadcasts the W.I.A. news on 50 Mc. band each week-end, but only the VK6s listen to him. Frank wants his W.A.S. and is waiting for a M.U.F. or T.I. to come his way. 6LW works at the same place as 6FC and we have two minds with a single thought. Wally's portable 50 Mc. rig has been doing some good trips lately. 6IG is still heard regularly on 7 Mc., but we know Ian has other ideas also!

Haven't heard 6KB for ages now. What's happening out there at Mt. Hawthorn? 6LM is a going concern on 7 and 14 Mc. now, and we expect to hear him on 28 Mc. any day now, or did you say 144 Mc. Lionel? 6MG Mac had a visit from 6JW last month, and we hear John now likes tomato sandwiches. Sounds odd but that's the way things were! 6NC congratulations Neil on another harmonic!—son and heir.

DX OF APRIL—BY VK6RU

Conditions on both 14 and 28 Mc. bands have shown a gradual falling off during this past month, particularly in regard to the latter band. Apart from this aspect, some choice stuff has been worked, as the following will show, but with the approach of winter we cannot expect band conditions to be what they were during the past interesting summer months.

28 Mc. Phone, Europe.—Nowhere near so consistent these days, although on the few occasions that the band has been open, quite a few good QSOs have resulted. Gs from the old country have again been in the majority and those from the other prefix districts were PA6OB, 6VH, 6OO, Holland; ON4BG, Belgium; GW4CC, Wales; GM3AVA, 3DAP, Scotland; 11ZZ, 1NQ, 1RO, Italy; F8ED, 8PA, 8TY, 8TU, France; OZ7T, Denmark; ZB1E, 1AK, Malta; SM5PR and 5PL Sweden, and D4AQV U.S. Zone in Germany.

Africa.—This continent is showing its usual behaviour for this time of the year in that most signals have been anything up to S9 and over on numerous occasions. Among the best signals from the Union boys were ZS5BY, 2W, 2AA, 6LR, 6EB, 6CH, 6KF, 6JI, 1AG, 6JW and 5QQ. From farther north came ZELJB, 7JH, OQ5BQ, Belgian Congo; SP2MP, Khartoum; VQ4CJG, 4HRP, Kenya, and ZD4AH Gold Coast, the latter being a most sought after contact for some months.

Asia.—Apart from the usual Js which seem ever present each day, the others worked were EQ2L, Persia or Iran; HL1AJ, 1AU, Korea; VS7RM, Ceylon; AP2D, 4D, 4B, Pakistan.

Oceania.—With short skip conditions prevailing, countries close to VK shores have been putting in signals mostly like locals, ZIs in particular.

North America.—Earlier in the month Ws were worked quite freely and plentifully, but from about the 20th onward, a rapid falling off on the band was observed. Some QSOs resulted, but not with the consistency of those made earlier. Reliability of W and VE contacts is not expected for the en-

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...suing few months. A few Ws were worked again, the long circle path through South Africa, but W4ROQ had by far the most outstanding signal. The only Canadians worked during our mornings were VE7WL and 7EB.

Central America.—With W activity not being so prevalent, more listening has been done with the beam South East, but the only two QSOs were with XE1SE and 1QE, Mexico.

South America.—CE1AH, in Chile, was worked three consecutive week-ends running—Ida and Larry being content these days to call CQ VK6 (only wish some more down that way would he as interested in us). PYTQG, in Natal, on the extreme North Eastern tip of Brazil put in a good signal from 1800-1900 hours three nights running over the great circle route through South Africa and provided a much needed PY contact post-war for a few of us. We understand he gave VK6MB his W.A.C. on 28 Mc. phone.

14 Mc. Phone.—This band is still showing its queer habits of late. Sometimes it's wide open for hours on end and sometimes not too good, but on the average has produced some very interesting features and contacts.

Europe.—This continent has been very spasmodic but generally the late afternoons and early mornings from 0100 onward have produced the best results. From late afternoon working IIRP Italy, EI9Q Eire, G8AC England were QSOed and in the early a.m. hours QW5SA, Wales; D4ALN, 4AUCW, Germany; EI2L, Eire; F8MY, France; IISM, Italy; G8UW, Northern Ireland; PA0UX, Holland; G6XR, 4IN, 8NY, 2IG, 8TH were all really f.b. QSOs.

Africa.—This time of the year certainly favours the ZS gang and from 2015 hours each evening pretty regularly they come through. Among the Union boys ZS6AJ, 3DE, 6FX, 1OH, 6KF, 1CG, 6HJ, 6LF, 1EZ, 3F, 6AA, 2AA and 1M had by far the best signals, many of these being new to 14 Mc. this season. From farther North came ZEZJQ, 2JK, 2JG, Southern Rhodesia; P73AF, Ethiopia; VQ4DF, 4RAW, Kenya.

Asia.—Amongst the usual poor signals (not in R strength) heard was C7TY, 3ZZ, China, and HLI4U Korea were the only QSOs had.

Oceania.—ZM6AF, Western Samoa, was the only contact made late one evening.

North America.—We have been very consistent this last month, all call districts being well represented. During most evenings the east side boys are worked and as the hour gets later one can work across the continent and finish up with W6 and W7 around midnight. VE4NI, 7VO, 7ZZ, 7UM were the only Canadian contacts and KL7UM the only Alaskan station worked.

TASMANIA

Things seem to have been quiet in VK7 for the past month or so. The summer field day season ended up with our last field day in April. The attendance was below the average but the weather was somewhat boisterous and discouraged most of the family members who didn't feel inclined to take the pot-lickers out in such weather. Len Jensen (7LJ), our worthy President, was first home and is running a close second to 7CW (Crosby Walsh) on points for the season trophy which will be decided at the end of our financial year in February next.

The Council meeting for the month was held at the home of 7LJ and as the business was light (for a change) much Ham chatter was indulged in and an excellent supper was provided by Mrs. 7LJ. The monthly general meeting was held on the first Wednesday in May and the attendance was good. After the meeting 7CT regaled the company with "A trip to New Zealand on Kurewa Three" or "Radio at sea in one hard lesson."

A move has been set afoot to form a zone of the W.I.A. in Northern Tasmania, and it shows the spirit that exists up there among the Northern gang. There are many active members in Launceston and the North-West coast and more seem to appear at every A.O.C.P. examination.

Our congratulations go to Lyn Brown, one of our associates who qualified at the last A.O.C.P. It seems to me that at every Council meeting we have an application for elevation from associate to full membership. Lord help us soon, what with the size of Hobart and the number of Hams, must take time off some day and work out the density per acre or something.

A committee has been formed to try and get the disposals angle tied up and give some of our country members a chance to participate in what is going.

7WI is on the air at 9.30 a.m. on the second and fourth Sunday in the month and it is hoped to increase its power shortly. However it seems to put an S8 signal into Launceston, maybe we'll get S9 in future.

By the way if you want to learn all about how

to make marmalade, the recipe can be obtained from the Northwest Coast Mothers' Club. I really must listen again and see whether the skins go into the pot or not.

Doc Kelly (7LL) paid a visit to his home one week-end last month and must have taken time off from his studies in Melbourne.

7BJ is re-building the rig and hopes to put a few more watts into the final. 78J can be heard frequently with 7 and 14 Mc. phone—sounds well Syd. 7BJ was heard calling CQ last week, believe he worked 7AF. Some DX—every bit of four hundred yards.

7CT is calling tenders for the extermination of one b.c.l., lowest or any tender not necessarily accepted.

7NL is active in Launceston and heard 7JP and 7MY having a bit of a natter at the week-end. Alan has just bought a house—you fortunate individual—how about an introduction to the right estate agent Alan?

Well that seems to be about the lot, no one ever tells me anything. I have to go and find out, how about some of you VK7 chaps telling me some Ham chatter some time? Cheers for now and see you all next month.

NORTHERN ZONE

The groundwork for the formation of an active zone in the North has now been completed and it now only remains for State Council to forward us a proposed set of rules. If these are satisfactory to the local members our officers will be elected immediately.

It may have taken longer to reach this stage than some of our members anticipated, however it must be remembered that a little extra time and work expended in the first instance might save us a lot of worry later. Consideration must also be given to the fact that the time may not be too far distant when it will be necessary to form other zones on the island and we want a constitution that will be applicable to all zones.

There is one thing however that can be done immediately and that is for all members to decide to make our zone something to be proud about. If we all start with this idea I can assure you that it won't be long before we have something worth while.

Activity on the air this month has been very limited. Our "ultra high" men have been busy converting or re-building their equipment for the 144 Mc. band. Active Amateurs on this band in Launceston are 7BQ, 7TE and 7DB. 50 Mc. has certainly been given the go-by and it would be impossible to have a QSO in this zone on this frequency at present.

The only two stations consistently active on 14 Mc. are 7RK and 7LZ, and both of these are having trouble getting past the W stations. 7LZ called CQ no. W recently and K1NAA answered and got the QSO on a technical point. 7GD and 7NL are both off the air at present. 7GD is re-building his final on ultra modern principles and 7NL is constructing a new receiver. 7BQ is still representing the zone on 7 Mc.

DX in this area has been rather patchy, however if the W stations could be dodged some interesting contacts could be had on 14 Mc. Several VOs have been active lately, the most consistent being VO1B, IF, 1AC, 2AT, 2B3 and 3X. Other good contacts on this band included F08AA, VQSHGE, YV1AZ, KM6AH, VE8AS, W2WVW/C9, CE7AA, PT2AL and VP5AM. On 28 Mc. the African continent has afforded us some excellent QSOs, however the only other station contacted except Asiatics and Ws was TI2FG. This band certainly needs more time than most of our members can afford to give.

CORRESPONDENCE

VICTOR (HK1FQ) STILL WELL

We received from VK2BT a letter which he had received from Victor Dugand (HK1FQ). His letter reads:—

"You have perhaps been wondering what has happened to your old friend Victor of HK1FQ. Well we have been almost in the hands of the Communists, my good friends! They almost succeeded in seizing the power, with lots of killings, fires, explosions and all kinds of terrorism! Thanks to God and with a coalition government of conservatives and liberals—the two old parties we have here and similar to the British parties—the situation was saved, but what a destruction! 30 per cent. of Bogota, our capital is destroyed, 15 per cent. of Barranquilla and other large cities.

"Of course all the Amateur Stations were closed and this is the reason HK1FQ is in a forced QRT. How long this state of emergency is going to last, I don't know. What I know is that my poor and dear country has suffered a tremendous blow, socially

and economically. More than 100 million pounds sterling lost and over 5,000 criminals set free by the rebels—they opened all the jails! Well, let us hope for the best and place our confidence in God. Your very good friend, Victor.

"P.S.—Am enclosing a list of the 108 VKs that have not sent me their cards. I wonder if you could send them a post card as a reminder? Have not received, as yet, the following QSL cards:—

"VKs 2ABD, 2ACB, 2ADE, 2ADN, 2AES, 2AKO, 2AKR, 2APR, 2BD, 2BN, 2BZ, 2CE, 2CP, 2DN, 2EJ, 2ES, 2EQ, 2GA, 2GQ, 2GU, 2HK, 2HS, 2IE, 2JP, 2KS, 2NS, 2NY, 2NI, 2OY, 2PL, 2QA, 2QR, 2QP, 2VZ, 2WC, 2VF, 2XD.

"VKs 3ADR, 3ADS, 3AGO, 3AGY, 3AJB, 3AMP, 3AN, 3BH, 3BM, 3BZ, 3DS, 3EB, 3ED, 3ES, 3EZ, 3FO, 3HG, 3JD, 3KE, 3KS, 3KU, 3LG, 3LA, 3MV, 3OP, 3QG, 3QK, 3SK, 3SV, 3UJ, 3UR, 3VO, 3VJ, 3XD, 3WX, 3YH, 3ZJ, 3ZL.

"VKs 4CG, 4CS, 4DO, 4GJ, 4FN, 4HC, 4KG, 4KW, 4OY, 4UL, 4UX, 4ZB, 5AF, 5AI, 5AO, 5BF, 5GL, 5LC, 5RS, 5WQ, 5XX, 5XO, 6KE, 6MV, 6NL, 6LM, 7AB, 7TR, 7XM, 7GH, 9MK.

"230 different contacts made in Australia, 122 QSLs received, 108 QSLs missing and listed above."

[Some of the calls listed above may have QSLed in which case it is obvious that HK1FQ has never received them. It is possible that cards were forwarded through the Bureau, consequently if HK1FQ is not a member of his National Society it is possible that they have never been forwarded on to him. HK1FQ's address for the benefit of those who wish to send cards direct is Victor Dugand, Barranquilla, Colombia.—Editor.]

PEN FRIEND REQUESTED

AC1 Stainthorpe, S.D., No. 2354272
Signals Sect., R.A.F. Linton-on-Ouse,
York, Yorkshire,
England.

Dear Sir,

I'm writing to inquire if there is any friend or member who would like to correspond with me. My age is 18½ years and I'm a member of the following clubs, etc.: Radio Society of Great Britain, British Short Wave League, International Short Wave League, Guild of Radio Service Engineers, Institution of Radio Engineers. I'm at present studying for Amateur Licence via the R.A.F. I will be looking for a reply soon so I'll close now.

—S. D. STAINTHORPE.

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FOR SALE.—Bendix TA301B 100 watt aircraft transmitter, 802 osc., 807 dblr., parallel 828s p.a., 2-15 Mc., £25. Genomator power supply, 1000 v. 500 Ma., 250 v. 100 Ma., 24 v. input, £5. 750-0-750 oil filled 240 v. input 24 k.v.a. £4. 1875-0-1875 240 v. input 500 Ma. £4/10/-. AT5-AR8 (less A.C.U.) £12. Type S supply (for AT5-AR8) £10. Two 300 Ma. filter chokes £2/10/-. Two 200 Ma. filter chokes £1. Type C all-welded rack 5' 6", 19" panel £2. AR7 rack 17½" panel £1. 200-260 primary, 110-0-110, 2 x 2.5-0-2.5, 2 x 5-5, £1/10/-. 240 v. primary, 24-32 v. 16 amp., £2/10/-. 10 tube v.h.f. receiver (R-1132) 100-124 Mc., £15. B. Aubrey, VK5AY, Weather Office, Darwin (N.T.).

SELL OR EXCHANGE for a.c. Ham Receiver, nearly new Zenith a.c. Modulated Oscillator. Adjust reasonable difference. R. Shortt, VK5SR, Tennant Creek, N.T.

WANTED.—Coil contact fingers for AMR200 receiver switch unit. Apply VK3ARV, 18 Madden Grove, Burnley.

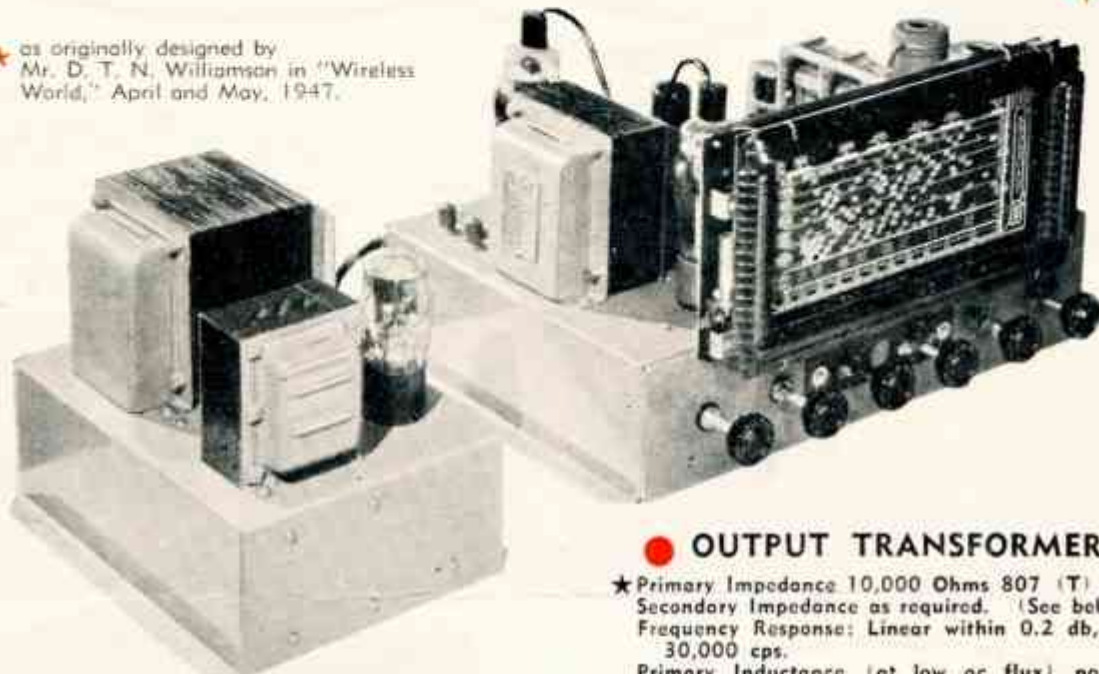
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EDITORIAL



In this issue you will find the official announcement of the formation of the Post-War R.A.A.F. Radio Reserve. This information will be received with satisfaction by a great number of Australian Amateurs who served in the R.A.A.F. during the War. The offer of the W.I.A. to assist in launching the plan and recruiting personnel has been accepted by the R.A.A.F., thus the W.I.A. is in a somewhat similar position to that of 1929, when the original R.A.A.F. Wireless Reserve was launched. On that occasion, the conception of such a Reserve emanated from the W.I.A., was accepted by the R.A.A.F., and up to the outbreak of War, the Wireless Reserve was a consistent W.I.A. activity. This time, although the W.I.A. occupies an analogous position, the scope and aims of the project are on a scale never dreamt of in the pre-war days. Then, a Reserve of 200 was considered a very valuable contribution; today, the R.A.A.F. seeks 2,000. Then, the Service was seeking only Amateurs' skill as telegraphists; today, this qualification is of small moment, it is technical aptitude, ability and knowledge that is sought.

The reasons for this changed requirement are of considerable interest. Before the last war, the value of radio generally, in time of war, appeared to be its inherent ability to provide communications between two points without the necessity of running landlines or cables, or between such points where line communication was impossible. The war brought an entirely new conception of the vital part which radio could play, with the introduction of Radar, the amazing growth of Radio Navigational devices and the building up of complex operational systems, such as Fighter Control. At the same time, with the war being fought on a global scale at an ever-increasing tempo, the inadequacy of the morse code as a method of conveying intelligence between two points became apparent. It was too slow, required too many personnel, with specialised operator training and took up too

many channels in a very much overloaded frequency spectrum. An interim solution for main point to point circuits was provided by the introduction of multi-channel radio-tele-type systems and extended use of R/T for "hot" operational channels. The major problems still remained, however, and with the post-war development of atomic weapons, supersonic rockets and aircraft, are further accentuated. It is outside the scope of this Editorial to discuss future Service Radio operational requirements, but sufficient has been said to indicate clearly why morse code proficiency is no longer a basic radio requirement.

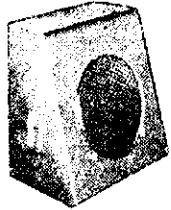
In the technical and administrative field lies the major contribution which Amateur Radio can make to the R.A.A.F. Radio Reserve. It has often been said, however, and quite correctly too, that the technical standard of the average Amateur is fairly low. As Amateur Radio is a hobby and not the life's work of the majority of Hams this fact is understandable and appreciated. However, to have interested himself in radio sufficiently to pass the necessary examination and secure a station licence is a definite indication of technical aptitude, and technical aptitude plus well directed training spells technical proficiency. Another aspect that must not be forgotten is that the average Ham has a wealth of practical experience, the value of which was proved countless times during the war. Part of the task of the Radio Reserve, therefore, is to take an Amateur, build on his practical experience by familiarising him with Service equipments, and through properly training, to fill in the gaps in his technical knowledge. This is only half the story, however, as one of the great features of the plan is the complete integration of the Radio Reserve with the R.A.A.F. at all levels. Amateurs will be trained in accordance with their qualifications, Service and general experience for appointments ranging from Senior Staff positions in the Directorate of

(Continued on page 8)

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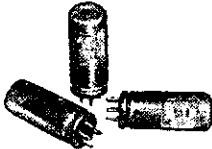
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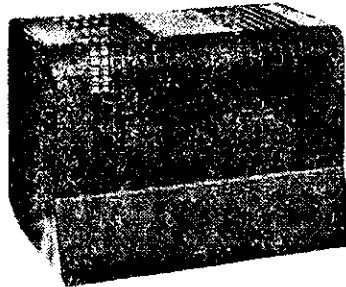
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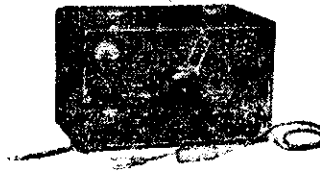
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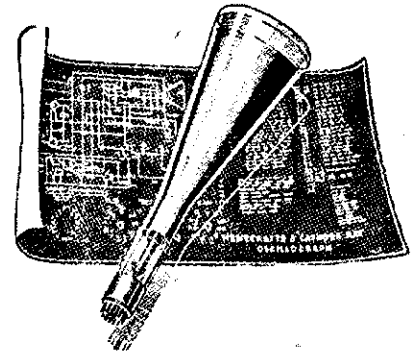


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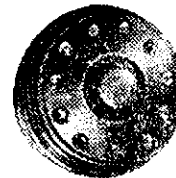


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One-Tube Preamplifier—The "R-9'er"

The "R-9'er," which has become quite well known in Australia, is re-printed from G.E.'s "Ham News" by the request of quite a number of members. We are indebted to VK2AGH for furnishing the Magazine Committee with this information.

Are you having trouble picking those weak DX signals out of the noise? The "R-9'er," using a single 6AK5 miniature tube, is designed to do exactly that. The "R-9'er" is an electronic impedance-matching device and a broad-band preamplifier, designed to work primarily on the 28 and 50 Mc. bands.

PERFORMANCE CHARACTERISTICS

The gain which can be achieved by this unit depends upon how well your antenna is matched to your receiver, but the minimum gain which may be expected is 30 decibels—about 5 S points! This gain comes about in two ways. The "R-9'er," once it is tuned, automatically matches your receiving antenna to your receiver. In the usual Ham shack this problem is not given much consideration, but a tremendous gain can be obtained by a proper match. The problem is doubly important on the 28 and 50 Mc. bands, as at these frequencies the input impedance of the receiver may vary widely from its stated value. For example, a widely known communication receiver, stated to have an input impedance of 250 ohms, actually had an input impedance of 1500 ohms on 28 Mc. Tests made recently show that the average gain experienced, merely by properly matching the receiving antenna, is from several db to as high as 30 db.

In addition to this gain, the 6AK5 miniature tube acts as a broad-band r.f. amplifier stage, giving an additional gain of approximately 30 db. This tremendous gain is possible only because of the electrical characteristics of the 6AK5. This tube has a transconductance of 5000 micromhos, which means that

a voltage gain of approximately 35 can be achieved with a plate load of 7000 ohms, as used in the "R-9'er." This amount of gain has been available only by former tubes at narrow band-widths and with higher noise levels. The 6AK5 has been designed to give these high gains at wider band-widths and at lower noise levels.

Here then is what the "R-9'er" will do for you—60 decibels gain (or more) if your present receiving antenna is not matched, or, assuming it is perfectly matched, a 30 decibel gain. In tests conducted at W2RDL's shack, "R-9'er" brought in signals which couldn't ordinarily be heard even with the use of the b.f.o.!

CIRCUIT DETAILS

Referring to Fig. 1, the circuit consists essentially of a broad-tuned grid and broad-tuned plate circuit, a standard cathode bias system, and an adjustable screen supply. The grid and plate circuits are identical except that capacitor C5 is employed as a plate blocking capacitor so that the plate tuning capacitor may be grounded.

In the grid circuit, capacitors C1 and C2 form the impedance matching network. A regular two-wire transmission line from the receiving antenna is

brought to the input terminals, or a single wire antenna may be used and connected to the input lead which connects to the junction of C1 and C2. Inductance L1 must be tunable so that resonance may be achieved after C2 has been adjusted to match the antenna. Once C2 and L1, as well as C7, and L2 have been set, no further tuning is re-

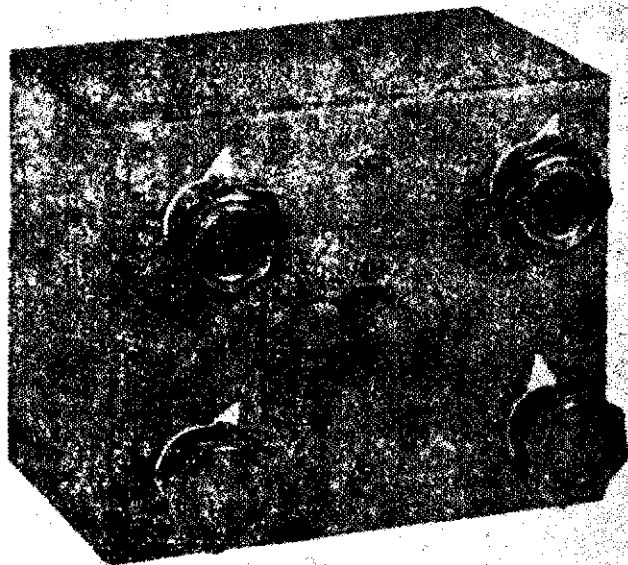


Fig. 2—Front view of the "R-9'er."

quired for operation on that particular band.

With the constants shown, the "R-9'er" will match any input and output between 16 ohms and 2700 ohms. This may be calculated:

$$\text{Impedance} = \frac{7000}{\left\{ \frac{C1 + C2}{C1} \right\}^2}$$

The same formula may be applied to the plate side by substituting C6 for C1 and C7 for C2.

All constants given must be strictly adhered to in duplicating the "R-9'er," as even the values of the by-pass capacitors are important. R1 and R5 must be 7000 ohms, as the band-width will be altered and the impedance formula changed if different values are used.

The band-width of the "R-9'er" with the constants as shown is approximately two megacycles on ten meters (28-30 Mc.) and five megacycles on six meters (50 to 55 Mc.), dropping off only one or two db. at each end of the band when it is peaked in the centre of that band-width.

The plate voltage is not critical, and any voltage available in your receiver will operate the 6AK5 satisfactorily.

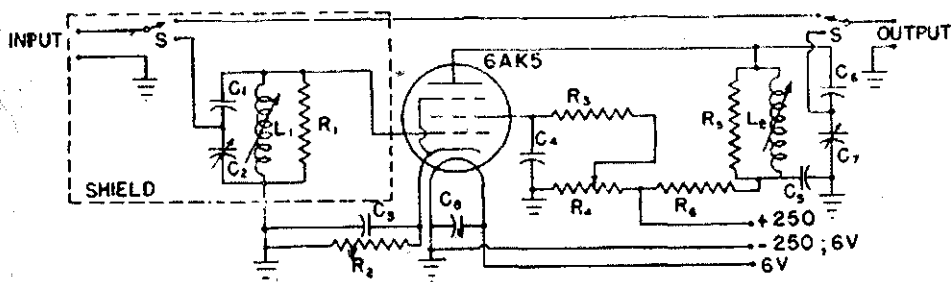


Fig. 1—Circuit Diagram of the "R-9'er"

- C1, C6—5 pF. fixed ceramic*.
- C2, C7—100 pF. variable.
- C3, C4, C5, C6—500 pF. 400 volt mica.
- L1, L2—Slug-tuned ceramic formers.
- 14 Mc.—See text.
- 28 Mc.—16 turns of No. 26 enamel close wound.
- 50 Mc.—8 turns of No. 26 enamel close wound.

- R1, R5—7000 ohm, 1/2 watt†
- R2—200 ohm, 1 watt.
- R3—15000 ohm, 1/2 watt.
- R4—25000 ohm, 4 watts potentiometer.
- R6—10000 ohm, 1 watt.
- S—D.P.D.T. wafer switch.

* See text.

† Refer to text for location of resistors.

CONSTRUCTIONAL DETAILS

The "R-9'er" is built in a 3" x 4" x 5" box, with all component parts mounted on the front panel. Fig. 3 shows the essential details of construction. The switch, S, and the potentiometer, R4, are the two controls on the upper part of the front panel, with capacitors C2 and C7 being mounted directly beneath.

The coil box occupies the central portion of the box, and is so arranged that the main support on the coil form, a piece of $\frac{3}{8}$ " by $1\frac{1}{2}$ " aluminium, $\frac{1}{8}$ " thick, just fits into the central shield on the box, which is also made of $\frac{1}{8}$ " thick aluminium. With the coil plugged into the "R-9'er," a solid shield is thus formed which completely isolates the grid section from the rest of the circuit. It is very important to have complete shielding between grid and plate. The polystyrene base on the coil is $1\frac{3}{8}$ " by $1\frac{1}{2}$ ", and the aluminium front of the coil

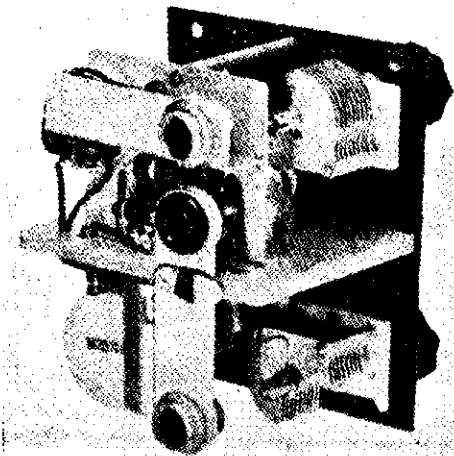


Fig. 3—Rear view of "R-9'er" on its side showing constructional features.

measures 2" by $1\frac{3}{8}$ ". One corner is cut on the polystyrene base in order to provide a method of keying the coils for proper insertion. The cut-out in the panel is similarly keyed. The coil forms are mounted on a thin piece of aluminium (see Fig. 4) so that the centre of the grounding strip contacts a grounding spring mounted on the $\frac{1}{8}$ " aluminium shield. This grounding spring is identical to the one shown in Fig. 3 which is mounted on the rear of the shield. The purpose of the latter spring is to contact the inside of the box, in the rear, for good grounding.

The pins on the coil fit into two crystal sockets. These sockets are mounted on the $\frac{1}{8}$ " wide aluminium shield.

The 6AK5 tube is mounted horizontally. Fig. 3 shows how the grid pin on the tube socket projects on one side of the shield with the remainder of the pins on the other side of the shield. Switch, S, is mounted on this shield. The input connection is mounted on a third shield which cuts through the centre of switch, S, shielding the input and output circuits.

Placement of parts is not too critical if adequate shielding is maintained. Lack of shielding may cause unwanted regeneration and possible spurious oscillations.

OPERATING ADJUSTMENTS

Input and output connections should be made to the "R-9'er" with well-insulated wire, preferably co-axial cable. Switch S should be set so that the amplifier is cut out, and the receiver tuned to a signal in the approximate centre of the band. A local signal is preferable. The amplifier should then be cut in by the switch, the screen potentiometer adjusted to give maximum voltage, and the grid condenser (C2) tuned together with L1 until the signal is heard. The signal should then be peaked with an R-meter or an output meter by tuning L1, adjusting C2, retuning L1, re-adjusting C2, etc., till the signal is maximum. This process should be repeated with the plate circuit, C7 and L2.

If C1 is found to be at full maximum or minimum capacity, the length of the antenna feeder must be altered. Conversely, the length of the line between the "R-9'er" and the receiver must be altered if C7 does not tune near its middle capacitance. To correct this situation, add a quarter-wave length of line and prune this line until the capacitor peaks the signal at approximately centre scale. For 50 Mc. operation the output line should be as short as possible, to ensure minimum capacitance on the output side.

After the entire unit has been peaked, the screen potentiometer (R4) should be adjusted for maximum output, keeping the voltage on the 6AK5 screen as low as possible, with output as high as possible. Once all adjustments are made for both coils, it is only necessary to peak capacitors C2 and C7 when changing bands, as the coils remain at resonance after once being adjusted.

Coil data for L1 and L2 is given for only 28 and 50 Mc. operation, although the unit will operate on any band.

THE "R-9'ER" FOR 14 Mc.

The coils are the most important part of the pre-amplifier. Unless the coils are of a sufficiently high Q very little gain may be achieved. This is because the band-width of the "R-9'er" is jointly dependent upon the Q of the coil, the resistance across the coil and the distributed capacitance in the circuit. It is desirable to have a coil with a sufficiently high Q that the band-width is effectively dependent only upon the resistance across the coils and the distributed capacitance. (R1 and R5, referring to the original diagram.)

Coils wound with a large diameter wire which is poorly insulated will have a low Q. Similarly, the Q will be lowered if it is necessary to overwind the coil, that is, if more than one layer of wire is used. High Q coils will be achieved if the wire is of a diameter which will allow the proper number of turns to fit exactly onto the coil form in one layer. It is very important also that the wire be well insulated. Silk-covered wire would be preferable. Avoid enameled wire if the enamel seems the least bit cracked or worn.

The "R-9'er" will work on 14 Mc. but it will be necessary to make several minor changes if optimum performance is to be realised. The first change should be to remove R1 and R5 from the cir-

cuit. These should be replaced in duplicate on the 28 and 50 Mc. plug-in coils and wired directly across L1 and L2. In other words, L1 and L2 on the 28 Mc. coil should each have a 7000 ohm resistor added in parallel to them. The 50 Mc. coil should be changed similarly.

It is necessary to make this change as the 14 Mc. coils will require a different resistance in parallel and it is necessary to remove the internal resistance in order that the proper resistance will be added to the circuit automatically when coils are changed.

The 14 Mc. coil should be wound with 25 turns of very small wire. As explained before, this wire should be small enough to allow all 25 turns to be placed in one layer. The resistance to be added across the coil will now depend upon the Q of the coil in the circuit. For example, if the coil Q is 100, the resistance to be added across both coils should be 25000 ohms. For a Q of 75, 36000 ohms should be added. For a Q

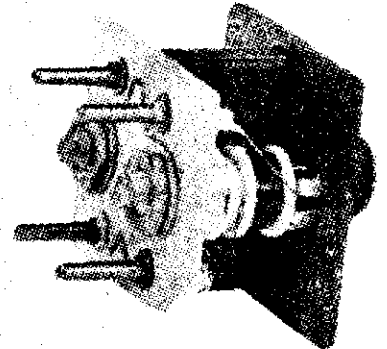


Fig. 4—View of "R-9'er" Coil Box (note that Coil is mounted on a Polystyrene base).

of 50, the resistance should be omitted entirely.

Inasmuch as very few of us will be able to measure the actual Q, it is suggested that the resistance be omitted entirely on the 14 Mc. coils. If the "R-9'er" then seems to be too sharp and covers too narrow a band, resistors should be added across L1 and L2 on the 14 Mc. coil until the band-width is approximately 1 megacycle. The band-width can be judged roughly by tuning the receiver across the band and listening for the slight amount of background noise which indicates that amplification is being achieved. When the increased background noise covers approximately one megacycle on the dial the band-width may be considered to be approximately one megacycle. After resistors have been added which broaden out the band-width to this value, the coils should be properly adjusted.

Another change that is suggested for operation on 14 Mc. is to make C1 and C6 10 pF. instead of 5 pF. This change will give added sensitivity on 14 Mc. and will not affect operation on 28 and 50 Mc. appreciably.

With changes made as described above the "R-9'er" will give appreciable gain on the 14 Mc. band, although it will not be as great as that obtained on 28 and 50 Mc.

Propagation of Radio Waves

BY N. S. SMITH*, VK3YY

Although not 100% practical, it was thought that a brief article on the factors governing the propagation of radio waves might be of interest to those who have not had time to study this aspect of radio. An understanding of propagation fundamentals helps one to visualise why the bands go dead at times, why fading occurs, and other phenomena.

It is proposed to condense this into two articles on the subject could cover much wider fields.

- 1 (a) Basic nature of a radiated wave.
- (b) Propagation at medium frequencies (550-1600 Kc.).
- 2 (a) Propagation in the range 3-30 Mc.
- (b) Propagation above about 30 Mc.

1a.—A radio wave propagated from an aerial consists essentially of two components:—

- (i) A field parallel to the radiator and termed the "electrostatic," "static" or "electric" field.
- (ii) An electromagnetic or magnetic field at right angles to (i) also termed "induction field."

These two fields at right angles to one another are also each at right angles to the direction of propagation of the wave. This sounds complicated, but Fig. 1 will help in understanding this point. This illustration should be considered as a section of the radiated

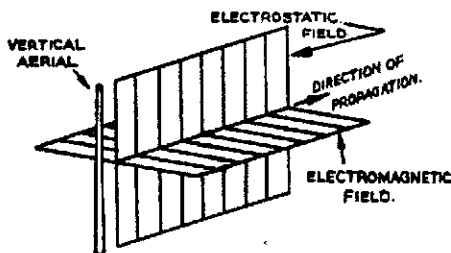


FIG. 1.

wave, which actually exists all around the aerial. The "induction field" (ii) dies away fairly rapidly, inversely proportional to the square of the distance from the aerial. In other words if the signal is of a certain value at a distance "d," it is only one-quarter

$$\left\{ \frac{1}{d^2} = \frac{1}{2^2} = \frac{1}{4} \right\}$$

as strong at twice the distance (2d). It is thus considered as contributing but slightly to the radiated signal value at a distance.

The "static" or "radiation field" is the useful radiation from an aerial and its value varies inversely as the distance, that is, at twice the distance it is half as strong. A term commonly used in referring to a radiated signal is "polarisation." This merely indicates the plane in which the "radiation field" lies, thus since this field is the one parallel to the aerial, a vertical aerial radiates a vertically polarised signal, and a hori-

zontal aerial a horizontally polarised signal. Actually, after the wave has travelled some distance from the aerial the polarisation may become more complex due to reflections from the ground etc.

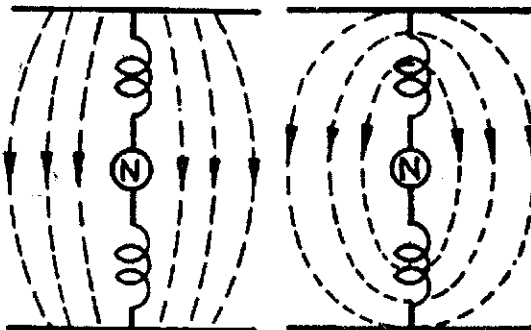


Fig. 2a.
Field building up.

Fig. 2b.
Start of collapse
of field.

It is rather difficult to explain briefly the process of radiation from an aerial, but the following elementary description may assist in visualising this complex action. When an aerial is connected to a transmitter it is supplied with alternating energy at relatively high frequencies. Thus the fields referred to above are building up and collapsing at a high rate. This means that the aerial is being fed with alternate positive and

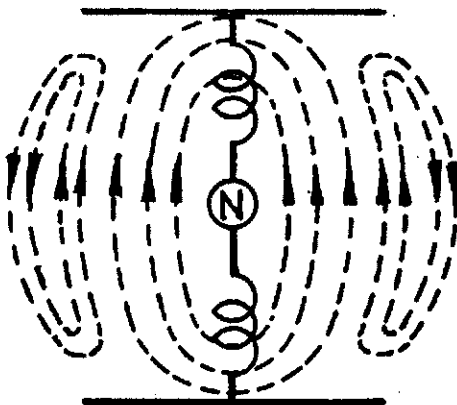


Fig. 2c.—Field of opposite polarity building up and causing radiation of part of previous field.

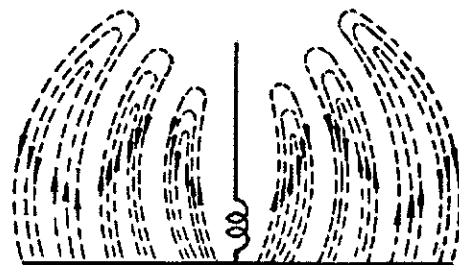


Fig. 2d.—Radiation of field from a grounded aerial in annular loops.

negative charges of electricity. It is a fundamental law that whenever the current flowing in a circuit changes, energy is radiated from the circuit in the form of electromagnetic waves, which travel out into space with the velocity of light. Thus in any alternating current circuit there is always a radiation of energy, the amount radiated being related to the frequency of the a.c., more energy being contained in high frequencies than in low.

Consider a positive half cycle of energy building up a field. After it has reached its maximum value it commences to collapse, and in doing so tends to change its direction (Lenz's Law). The negative half cycle however is now arriving at the aerial and commencing to build up a negative field, this is in the same direction as the collapsing field and tends to repel it from the aerial, giving rise to radiation. This process is repeated every half cycle and thus the energy is radiated from the aerial. Figures 2a, 2b and 2c illustrate this process.

A moment's thought will show that if the fields are changing at a slow rate (such as 50 cycles/sec.) there will be time for a full collapse of one half cycle before the other one builds up to reasonable strength. That is why radiation from power lines is relatively weak, increases through the audio frequency band, and improves rapidly as the radio frequency field is entered. Such is a brief elementary picture of radiation, in which, of course it will be appreciated, many factors are not considered.

1b. Propagation at medium frequencies (550-1600 Kc.).—The medium frequency band is useful in providing broadcast services up to about 80-150 miles radius, which area may be regarded as the primary service area of the station. Signals however are also received at several hundred miles distance at night time, providing a limited secondary service area. The primary service area is provided by what is termed "the ground wave." This is the wave propagated over the surface of the ground at low angles to the horizon, and thus requires an aerial having maximum propagation at low angles, and minimum "sky wave" radiation as explained hereafter.

* 14 Durham Road, Surrey Hills, E.10.

Fig. 3a shows the desirable radiation pattern for a broadcast aerial. Fig. 3b shows the radiation patterns of three aerials, $\frac{1}{4}$ wave, $\frac{1}{2}$ wave and $\frac{3}{4}$ wave. An examination shows that the 0.625λ ($\frac{5}{8}$) has a nice low angle major lobe, but unfortunately has an appreciable lobe at 60° . The half wave (0.5λ) has no high-angle lobe but has radiation at higher angles than the $\frac{3}{4}$ one. In practice it has been found that an aerial of 0.53 to 0.56 wavelength gives very good

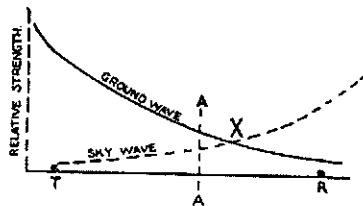
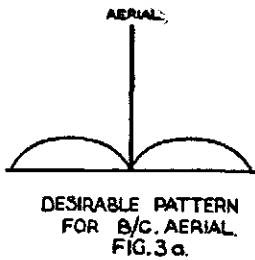


Fig. 4—Fading of Radio Signals (Medium Wave).

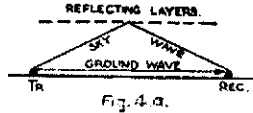


Fig. 4a.

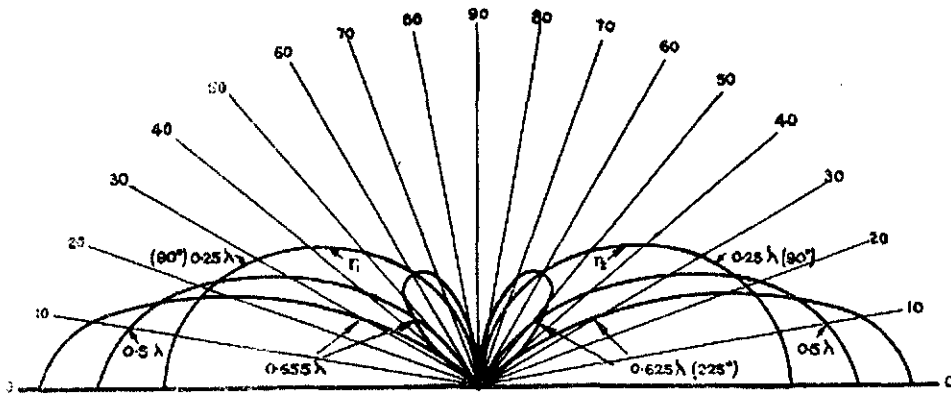


Fig. 3b.—Radiation Patterns (Vertical Plane) for Grounded Vertical Antenna of 0.25 , 0.5 and 0.625 wavelength height (90 , 180 and 225 degrees).

characteristics with only a small radiation lobe at about 60° .

The reason for not desiring the high angle radiation is that it causes fading. The fact that it provides a secondary service area at night is not as important as the fact that it causes an area of severe distortion and fading which limits the primary service area of the station.

Fading occurs when the sky-wave and ground wave have comparable strengths. Fig. 4 will make this clear. Fig. 4a shows the paths to a receiving point of the ground and sky waves, and Fig. 4b indicates the way in which the signal strength varies. At point AA the sky wave is 50% of the ground wave and bad fading commences; at point X the signals are equal and very severe fading will be experienced; at R the sky wave tends to take charge, the ground wave rapidly dying away.

Reference to Fig. 4a will indicate that at the receiving point, "Rec.," the sky wave will have travelled a longer distance than the ground wave and there will thus be a phase difference between them, and the signal received will be the algebraic sum of the two signals. The reflecting layers vary in height, as does their absorption, consequently the sky wave signal varies in intensity and also in phase difference, thus causing constantly changing degrees of fading.

In the daytime the reflecting layers are highly charged by the sun's radiation, and the sky wave is absorbed

without reflection. Thus in the daytime there is an absence of both fading and secondary service area.

The importance of reducing the sky-wave radiation from a medium-wave broadcast aerial is thus apparent.

Radiation and propagation in other bands will be discussed in a later article.

YOUR ATTENTION—PLEASE

Since the end of the war Federal Executive and the Victorian Division have been sharing the Post Office Box 2611W. It has now been decided that mail for the Victorian Division shall be delivered to the Rooms, and that F.E. will take over the Post Office Box.

For Box 2611W G.P.O., Melbourne:—
Federal Secretary.—All correspondence dealing with purely Federal matters.

Federal QSL Manager.—All correspondence dealing with QSL matters, applications for W.A.C. Certificates or Awards.

For "Law Court Chambers," 191 Queen Street, Melbourne, C.I:—

Secretary, Victorian Division.—All correspondence concerning Victorian matters only.

Editor, "Amateur Radio."—All correspondence concerning the Magazine, Notes, Technical Articles, Contributions, and all matters relating to the financial and distribution aspects of the Magazine.

TWO SOLDERING IDEAS

A neat gadget for cleaning your soldering iron may be made as follows. Take an old phonograph needle cup, drill two small holes and screw it to the work bench. Pack it rather tightly with steel wool. A twist of the iron in the cup—presto, a nice clean iron. Secondly, on those hard-to-solder jobs where the iron is too small for the job in hand, try pre-heating the metal parts to be soldered with an electric hot-plate, toaster or other source of heat. The iron will not then have to lose so much heat, and the operation can be performed successfully.—QST, January, 1946.

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NEW ELECTRICAL STANDARDS

THE "ABSOLUTE" UNIT

Many of our readers will have heard of the impending change in the international standard for the Ohm, the Volt, the Ampere, etc., and may have read announcements that the laboratories of the world, including the National Physical Laboratory in England, the National Bureau of Standards in the U.S.A., and their equivalents in France, Germany and U.S.S.R. have adopted new values from the 1st January, 1948

These new values, which are in accordance with decisions taken by the International Committee of Weights and Measures at Paris, in October, 1946, are termed "absolute" units and are based on the familiar centimetre, gramme, second (C.G.S.) system. They replace the existing "international" units.

The following table shows the change in values:—

1 international ohm	=	1.000495	absolute ohms
1 international volt	=	1.00033	absolute volts
1 international ampere	=	0.999835	absolute amperes
1 international coulomb	=	0.999835	absolute coulombs
1 international henry	=	1.000495	absolute henries
1 international farad	=	0.999505	absolute farads
1 international watt	=	1.000165	absolute watts
1 international joule	=	1.000165	absolute joules

Preparations for this change in Australia have already been made. It is known that the Australian National Standard Laboratory took action some

time ago to have their testing equipment calibrated on the new system, and an announcement describing the application of the change to Australian electrical standards is shortly expected.

SIGNIFICANCE OF CHANGE

In the first place, the values of these fundamental quantities are the foundation on which the entire structure of accurate electrical measurement is built. For some types of work, comparative values are quite sufficient, and comparisons can be made to a high degree of precision. But the engineer who relies on comparative values sooner or later comes up against the hard fact that there is no substitute for knowing where he stands in relation to the true, or accurate, value.

Consider, for example, the building of a large turbine-generator. This job, a serious business, may take a year or more and requires large amounts of

material and the efforts of many people. Once it is completed, the engineers make careful tests to measure the unit's efficiency. These tests form the basis for determining the machine's performance, and also serve as a guide towards the improvement of future machines. The difference in efficiency between successive machines is necessarily small; a slight error in measurement could mask improvements which the design engineer spent much effort in incorporating into the machine. The time between tests of the original machine and its improved counterpart may be two years; thus the measurements must be accurate in the true sense that they go back to fundamental standards and are not expressed on a day-to-day comparative basis.

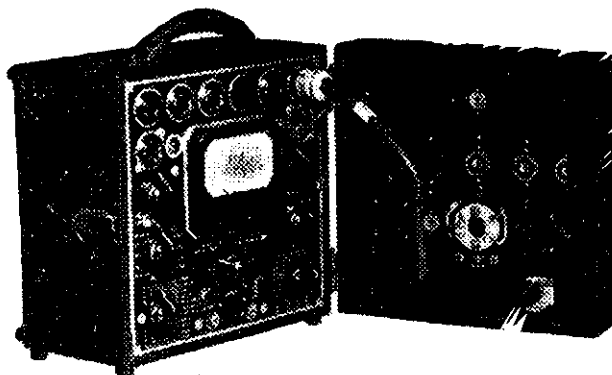
In the second place, a careful engineer or physicist often makes checks by independent methods to verify the soundness of his assumptions. Those most concerned with accurate measurements have occasion to make similar tests to ascertain the validity of the units with respect to their relation to other units in the meter-kilogram-second system. For example, the force on two parallel current-carrying conductors is calculated from an expression embracing forces and lengths as well as electrical quantities. If the electrical quantities are not exactly determined, there will be an inequality in the equation.

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THE AR7 FOR HAM BANDS

BY C. H. CASTLE*, VK5KL

Many of us have been fortunate to obtain from Disposals the Australian-made Communications Receiver well known as the AR7. Main disadvantage of most of these Receivers was the high noise level to signal ratio, especially on the highest frequency band. After months of trying for optimum performance, the following improvements are suggested, taking each section individually, as was found to improve performance.

POWER SUPPLY As originally there was always trouble with the 6X5 rectifier, plate to cathode shorts, and constant blowing of fuses, and at times burning up of the Yaxley switch used to change from off position to a.c. or d.c. The first major change was to replace the power transformer with a normal type 385 v. aside at 125 Ma., 6.3 v. filament and 5 v. for a 5Y3 rectifier. The Yaxley switch was dispensed with, and replaced with a toggle switch for switching on and off the a.c. input.

Fusing was changed to the use of one globe, and holder, in the centre tap return to earth. All chokes and by-pass condensers associated with the vibrator section were removed, but the filter network in the a.c. input was retained. After re-wiring the receiver filaments in parallel to take the 6.3 volts, tests showed that the noise level was already reduced.

AUDIO Only addition here was the insertion of a 2 Megohm resistor from plate of 6V6 to plate of 6G8* to provide parallel inverse feedback.

SECOND DETECTOR The pot and resistor combination used as a noise limiter was disconnected in favour of 1 Megohm resistor from B plus to screen and 0.1 uF. by-pass. An alternative being tested is the use of a 6C8 as infinite impedance detector using one triode and a 6H6 mounted under the chassis as a series noise limiter. The second half of the 6C8 will be used as the first audio. The potentiometer controlling the noise limiter will be in normal position on the front panel. Addition of this will bring the receiver up to modern standards.

I.F. CHANNEL First item is to re-new the crystal gate, also the second and third i.f. transformers because most were never impregnated enough to keep moisture out, hence performance is low. 6SK7s replace the 6U7s and the necessary re-wiring done. Replacing of the screen resistors is a must as most, you will find, have increased their resistance by use. Re-alignment of the i.f.s. can now be done as per usual practice.

MIXER Here is the heart of the receiver and of course received most attention. After weeks of comparing different combinations of mixer-

osc. circuits etc., final choice was the converter ECH35. This was found to be equal to the separate osc. systems tried, for signal-to-noise ratio, and made for simplicity, as it is not then necessary to have an osc. tube mounted underneath the chassis. The original tube (6K8) works satisfactorily even at 28 Mc., but inherent noise level is high. As you get into the high frequencies the 6K8 tends to super-regenerate in the osc. section, and a high noise level is the result. Also the signals are not clean cut, and osc. drift is bad.

The first necessity is stabilising the oscillator plate voltage. A VR105 was installed in the spare socket of the power supply, and a fifth lead run to the receiver, replacing the 4-pin plug and socket with a 5-pin. Taking out the 50,000 ohm dropping resistor and using a 6,000 ohm wire wound in the regulator circuit in the power supply, cures all oscillator drift. The secret to success with the ECH35 at 28 Mc. and higher, is to use a 20,000 ohm oscillator grid resistor instead of the normal 50,000. This immediately increases the oscillator grid current to about 500 micro-amps., and it is necessary to reduce the oscillator plate tickler coil turns until 200 micro-amps. grid current is obtained.

NOTE.—No. 1 pin must be earthed, so as to earth the coating on the tube. Now the receiver will start to perform and in the writer's case just replacing the 6K8 with the ECH35 showed an increase of two S points on the meter on a constant signal. Re-alignment of the circuits improved reception all round.

R.F. STAGES Choice here of high gain tubes was for 6AG5s because the full 250 volts can be used on the plate. Replacing of the tube sockets is necessary and because of the sharp cut off characteristics of the tubes, a.v.c. was disconnected and circuits re-aligned.

COILS For 28 Mc. take an "E" band coil that normally tunes from 12.5 to 25 Mc., and remove the fixed padding condenser on each coil and remove half a turn from each grid coil (heavy winding). Re-alignment of the oscillator coil variable padders is necessary for the best results. With the set upside down and front to you, the trimmers on the left of each coil box are for low frequency end, those on the right for the high frequency end of the band.

Juggling of these trimmers will give you up to 500 degrees on dial band

spread or less at will, or can be lined up so as to cover 27 to 30 Mc., so covering the new band at 27 Mc.

For 14 Mc., take a "D" band coil. Remove the iron core from the coils and by taking trimmers from an "A" band coil and putting in the "D" band, re-wire as per the "E" band coil for 28 Mc. Re-alignment will give you all the band spread necessary and it will be a pleasure how many more signals you can hear.

With these alterations you will have as good a receiver as they come, with plenty of r.f., i.f., audio gain and low internal noise level. This can be tested as follows: With no aerial on the set and all gain controls full on, the noise level should be low and the receiver immediately becomes alive with the aerial on. The sensitivity and signal-to-noise ratio is really good, and you can sit back feeling that at least you have a good receiver.

No receiver diagrams or photographs are included as this receiver is well known.

EDITORIAL

(Continued from page 1)

Telecommunications and Radar, through Area and Unit appointments to jobs as operators or maintenance personnel on current Service Communications and Radar equipment. Outside the commercial field the R.A.A.F. has three major sources of personnel from which to draw in obtaining the 2,000 odd men required; from Hams and Radio Personnel who served in R.A.A.F. Radio Services during the War, from ex-Radar personnel who are not Hams, and from Amateurs generally.

The announcement of the formation of the Radio Reserve in this issue sets out only general terms of service. It merely intends to indicate that a Radio Reserve is to exist, the conditions of Service and how it fits into the R.A.A.F. organisation. Details of enlistment, qualification requirements and training plans are now being worked out and will be announced as soon as possible.

No information is available concerning the possibility of Army or Navy Radio Reserves being formed, but if either of these Services do take similar action to the R.A.A.F., then the W.I.A. will extend to them the same facilities and co-operation. In the meantime, however, we commend the R.A.A.F. Radio Reserve to you as a means of fitting yourself to serve your Country in time of war in an activity in which you are not only intensely interested, but for which you have proved your aptitude. An enthusiastic acceptance of this scheme will provide yet further proof that our hobby is indeed a National Asset to the Country.

V.E.M.

* c/o. Dept. of Civil Aviation, Darwin, Northern Territory.

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ENGLISH AND AUSTRALIAN.—Australian Radio World, 10/-; Amateur Radio, 6/-; Electronic Engineering, £1/12/6; Radio and Hobbies, 12/-; Radio and Science, 12/-; Shortwave Magazine, £1/5/6; Wireless World, £1/5/-; Wireless Engineer, £2.

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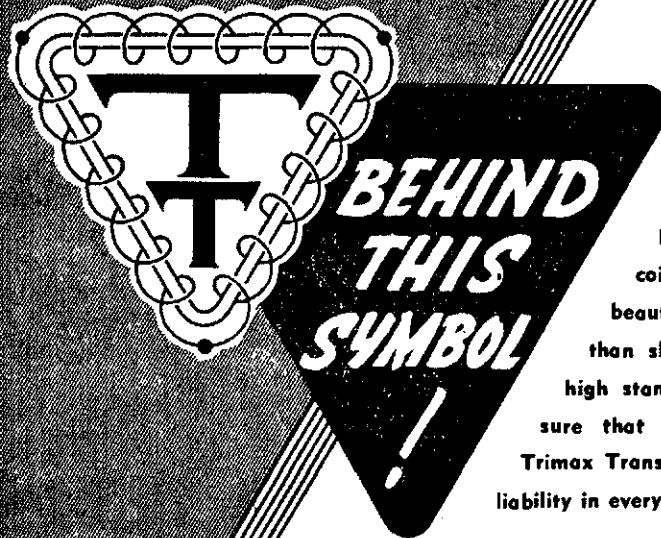
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QUESTIONS AND ANSWERS

One month old and already a lusty infant! It's a case of first come, first served, so if you want a question published don't waste time in sending it in as our space each month is limited.

If you have a question of a technical nature send it in to "Q. and A.," "Amateur Radio," Box 2611W, G.P.O., Melbourne, and if suitable it will be published in this column. If you can answer any of the published questions you are invited to send same to the above address. All such replies will be forwarded to the questioner (if he has sent a stamped addressed envelope of suitable dimensions) and also a summary printed.

In the future, when necessary, the question may not be printed again with its answers, but can be identified by the sequential number. Nuff said, so let's to business.

Q.1.—What is the velocity factor of nyllex twin power flex?

A.1.—The answer from VK2CS is being held over till next month as we hear a rumour that a lot more of the good oil is about to arrive. The same rumour has it that the flex is hot stuff up to 60 Mc. and that the coloured insulation is better than the clear. Sounds screwy but we'll wait and see.

Q.2.—Why are filter chokes put in the high tension lead where the windings have to be well insulated from the core when it appears that they would work equally well in the return lead at approximately earth potential?

A.2.—VK3SO says: "Mainly habit. Brute force filters work equally well with the chokes in either positive or negative lead. The only catch being that in the good old days when wet electrolytics were available the can of the first electrolytic had to be above chassis potential. In fact if in the negative lead the voltage drop across the choke can be used for back bias after filtering with a simple RC filter."

VK2CS, quoting Terman: "The side of the circuit with the series impedance may be placed in either lead of the filter. However, if one output terminal is grounded, and it is essential that hum voltages in the output be extremely small, then the filter chokes must be placed in the ungrounded lead. This is because of the electrostatic capacity of the transformer secondary to ground."

NEW QUESTIONS

Q.3.—From VK3SO: What is the correct method of determining the load resistance for the modulator when screen modulation is used? In other words, what is the impedance of the screen of an 807 working at 150 v. and drawing a static current of 3 Ma. Is it 50,000 ohms? If not what is it and why?

Q.4.—From VK3BM: Can anyone supply technical data and socket connections of voltage regulator tube marked "Admiralty pattern voltage stabilizer 5458 NSI 280/80"?

FACTS ABOUT NYLEX POWER FLEX

We are indebted to S. W. Grimsley VK3ASG (engineer at 3UZ) for the following.

So many amateurs and enthusiasts are using Nyllex twin parallel pair flex cord for feeder lines for various types of antennae that I thought I would try and ascertain from the manufacturers just how this line will perform at radio frequencies.

The Chief Electrical Engineer of Moulded Products Ltd., Mr. T. L. Martin, has been most helpful in this regard, and at his instigation, various tests have been carried out with some rather promising results. Phase velocity figures have not yet been compiled, these I hope to have ready by next month.

Nyllex parallel pair flexible cord consists of two 23/.0076 insulated conductors laid parallel and joined by a small webbing. The physical dimensions are as follows: radial thickness of insulation in inches, average .034, minimum .026, average overall diameter of each core .114 inches. Average overall dimensions: width is 0.238 inches, maximum thickness is 0.114 inches.

The insulant is not affected by direct sunlight, nor is it affected by oils, grease, acids, alkalies, ozone, or corrosive gases. Nyllex insulating material does not absorb moisture, will not support combustion, and is self extinguishing. It does not age or oxidise in service. The cord is obtainable in various colours and each colour has slightly different performance figures.

Characteristic impedance and loss figures are as follows:—

Colour	Impedance in Ohms	Attenuation db/100 ft.
Blue	157	2.08
Black	165	2.48
Red	157	2.82
Brown	155	2.83
White	152	3.02
Yellow	161	3.38
Clear	146	3.73

The loss figures were calculated at a frequency of 45 Megacycles. It would appear by the figures that this line performs reasonably well, at least up to the 50 Mc. band.

Amongst the fraternity who have in the past favoured the clear variety, do I see a few eyebrows raised?

ELIMINATING BACK LASH IN BC348 RECEIVERS

Back lash in the turning mechanisms of the BC348 series receivers can be eliminated by slight adjustment of the screws that mount the tuning condensers. The holes in the bracket on the condenser are sufficiently large to allow the condenser to be moved far enough to take up the back lash. It is only necessary to loosen the screws on the dial end of the condenser mounting bracket and the sub-panel casting. Twist the screw driver blade until the slack in the gears is taken up, and then re-tighten the mounting screws.—QST.

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BOX 3765, G.P.O., SYDNEY.

SATISFACTORY SCREEN GRID KEYING AND CHEAP R/T

Having employed screen grid keying of my rig using only a 6V6 oscillator and 807 amplifier, I have had many requests for particulars of the circuit used, as back waves seem to cause some problem in other systems. I am therefore forwarding you particulars of the system used here because it is simple and efficient and it can be quickly adapted for quite fair phone.

In the 6V6 screen network the 100,000 ohm-2 megohm network is adjusted by varying the value of the 2 megohm resistor to as high a value as is consistent with the crystal oscillating immediately the h.t. is applied. The 60,000 ohm resistor is varied so that the grid current to the 807 is never higher than 5 Ma. on c.w. nor less than 2 Ma. on phone. It is a compromise arrangement, but it works really well here and the original 807 I bought when they first appeared some years ago is still going strong with 700 volts on the anode.

For phone operation, the screen voltage of the 807 MUST be reduced so that it varies with modulation between zero and not more than 300 (the maximum screen voltage). In practice it will be found that a d.c. voltage of 125 is the highest you can use satisfactorily, and the 50,000 ohm resistor by-passed by the 2 uF. reduces the screen to this value.

It will be seen that with the set-up shown, part of the modulation is also applied to the screen of the 6V6, which, in this case, is the crystal oscillator, and whilst it is widely recognised that it is unsatisfactory to modulate a crystal oscillator, I find that there is a very marked improvement in the signal when the modulation is also applied to this screen.

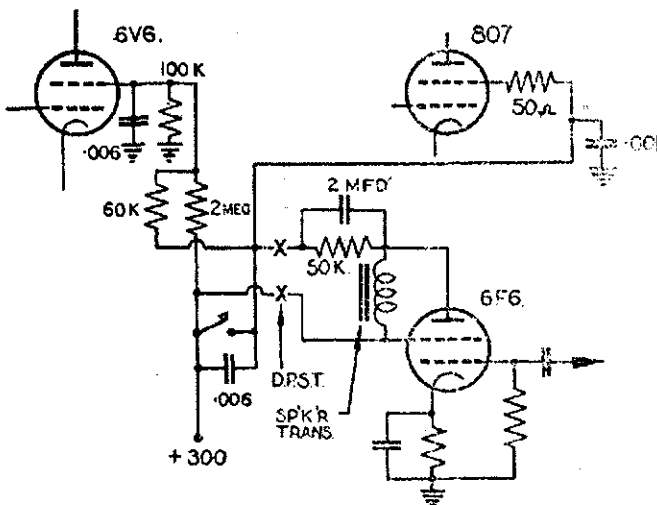
The screen dropping resistor to the 6V6 is NOT by-passed for audio for two reasons; firstly I use a dynamic or ribbon microphone and in both cases the bass response is too pronounced and better reports are obtained with the screen resistor unby-passed for audio, secondly the unby-passed resistor very conveniently limits the a.f. applied to this screen.

Keep your 807 anode voltage as high as possible within the tube ratings. On c.w. keying is excellent, and on R/T satisfies those who want phone now and again, without much expenditure.—VK3TY.

REPAIRING LOOSE GRID CAP

Many Amateurs have from time to time met the problem of the best way

to fasten a loose grid or plate cap on a valve. I have solved the problem by removing the faulty cap, thoroughly cleaning and tinning the wire lead. Smear a small quantity of polystyrene cement on both the glass and the inside of the cap, allow to become tacky, similar to using a rubber solution when mending a puncture. Now place the cap on and with a hot soldering iron run in a liberal amount of solder and keep the iron on until the cement bubbles and



the heat drives out the air inside the cap. This will form a partial vacuum and when dry the cap will be as strong and in the majority of cases better than the original.—VK3XJ.

FEED-BACK TROUBLE IN THE MODULATOR

That feed-back may not be r.f.! Has it ever occurred to anyone that it may be supersonic. For those who are using 6L6s as modulators, screening the plate leads and interposing a metal screen between modulator sockets and pre-amplifier-driver stages cured this trouble in VK5XU's shack. The feed-back may be sufficient to cause squegging in the pre-amplifier stage only when delivering into the transmitter load, which fact makes it harder to trace (five days says 5XU!).

PLUG IN COILS

For a set of experimental Marquis coil formers, solder 18 gauge wire into the pins and bend at right angles. Coil windings can then be easily attached or detached whilst determining the correct number of turns or spacing by twisting the coil ends to the correct tag and then screwing on the upper former.

REMOVING R.F. FEED-BACK FROM MODULATOR

VK5PS reports that the r.f. feed-back into his modulator was found to be coming via the buffer stage and corrective by-passing in that stage cured the trouble. Moral: Look to all sources of r.f. generation when chasing that elusive gremlin, and not the modulated stage only.

Not much news this month from VK6 re 50 Mc. as most activity has taken place on 144 Mc. 6GB, 6GM, 6FW and 6LW just missed QSOs last week as each in turn wasted an evening on four consecutive nights. Probably the shacks have been too chilly since the cold spell hit us. 6GB and 6GC still continue to do a fine job re-broadcasting the W.I.A. news each Sunday morning on 50 Mc.

A rather complicated hook-up took place last week-end when several stations co-operated in an attempt to relay the ZS 7 Mc. news broadcast. The broadcast was picked up on 7 Mc. and relayed on 28 Mc. by a ZS station to VK6KW, who relayed the 28 Mc. signal to 6GB on 144 Mc. 6GB in turn was to have relayed on 50 Mc. but because of the poor signal (a result of the ZS forgetting to put a 7 Mc. antenna on his receiver) this was not done. However, these stations intend to try again each Sunday at 2.30 p.m.

GAG of Darlington and 6GH of Claremont are the only newcomers to 144 Mc. since last month. GAG has been working regularly with 6KW, 6RU and 6GB over a 15 mile path with excellent results and with various antenna arrangements. 6GH has receiver and transmitter both on the band and has already worked 6KW. 6FC looks like being the next on the band. His converter is ready and he has started a separate transmitter with 815 in final. Hope the path to 6LW doesn't constitute the difficulty it did on 50 Mc.

144 Mc. DIGEST

'Whoopie' another National two-way phone record smashed and right on the very first 144 Mc. Field Day in VK3, which went under way on Sunday, 6th June. This fine effort was put up by 3ABA-YS located at Mt. Macedon for a distance of 122.1 miles to 3CI who was operating at Foster North; congratulations indeed to Jim, Fred and Syd. The Macedon signals were R5, S6-7 at Foster North, while 3CI was quoted as R4 S3-4. The gear used by 3ABA-YS was the mod. osc. employing p.p. 7193s with a 6V6G as the modulator on to a three element beam plus the A.S.V. receiver; 3CI's outfit was listed in last month's issue.

Last month we incorrectly published details of 3ABA-YS' gear. The following is the correct details: The antenna at the home location is a six element parasitic beam 35 feet high while the main rig of 4 watts is a crystal (147.12 Mc.) job of three stages using 6N7 osc. tripler, 6V6 doubler, and the 832 final.

For the past four weeks activity in VK3 was carried on by 3ACM, 3ADF, 3AKI, 3ASQ, 3ABA-YS, 3BEH, 3BM, 3XKM, 3ARR, 3AJ, 3LH, 3HE, 3MB, 3TO and 3JO, the latter is chief wire tapper when on m.c.w. via a 1 watt transceiver plus a 6C4—what no key after our disposal sales!! 3AG has a rock for 144.138 Mc. so this looks like a T.A.C. session on the band. 3AJ is also on 144.138 Mc. using a six element Yagi close-spaced T matched 35 feet up and a modified SCR522 to the extent of 15 watts; a four acorn tube converter feeds the band into a Marconi B28 receiver of 12 tubes.

3EM is now employing a code wheel so as to ease the wrist while carrying on with the workshop jobs. 3TO is lashing out in great style via a 35 foot mast to support the 15 element stacked half waver and also provides a good checking channel with crystals for each Megacycle on the band. 3ADF did not need his v.f.o. this time to shift, if all went by van to a new QTH. It is suspected that the hat will go around at the next V.H.F. Meeting for any surplus petrol coupons as needed by the former 144 Mc. phone record holders; Buninyong here we come.

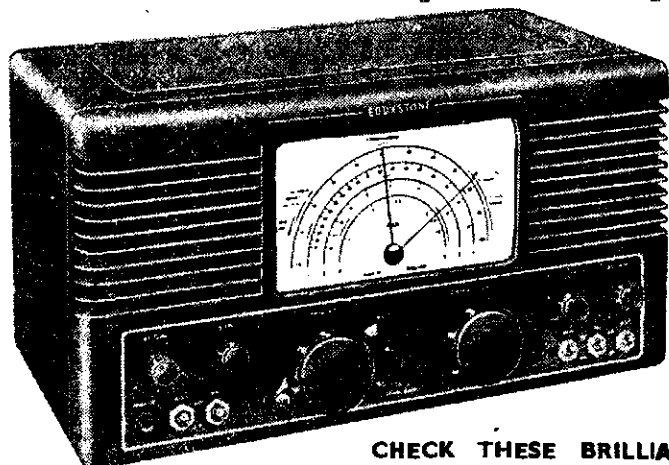
Restrictions on power supplies in VK5 due to the coal shortage has held up operations on the 144 Mc. band, however in between the gang have been busy hunting up copper tubing. 5JO, 5AX, 5GA and 5NG are the most interested parties, the former is on a visit to VIM to obtain the means of going out portable. Just to hand is the information that the boys are not on the right band yet, looks like more water is needed at the Windmill Club. Activity is under way at Mt. Gambier where 5JA and 5MS are doing the pioneering work. 5JA has a 15 watt three stage v.f.o. outfit on 146 Mc.

Reports from VK2 indicate that the 144 Mc. band is pretty well populated and a number of new voices are heard each week. For cross-town work, most of the locals are going back to the vertical polarisation as they find the horizontal too sharp and so keep on missing out on each other. Some of the former prominent 50 Mc. boys are on the band and not with slung-together gear, but the real thing, like 2RU who is building a complete rig. Erratic conditions still prevail, Sydney hears Newcastle one night then the reverse is the case the next night.

THE "TOPS" in AMATEUR COMMUNICATION RECEIVERS

The EDDYSTONE "640"

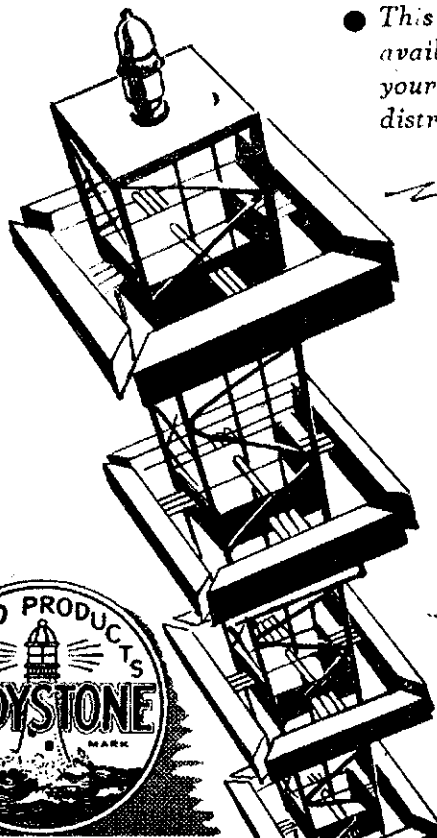
—ACCLAIMED EVERYWHERE AS THE FINEST "HAM" SET YET DESIGNED!



CHECK THESE BRILLIANT FEATURES:—

1. Receiver has been designed primarily for Amateur Communication purposes, tuning range from 31 Mc/s to 1.7 Mc/s.
2. Designed to operate from Standard A.C. Mains with Inputs of 110 volts 200/240 volts, 40/60 cycles as well as from a 6 volt battery by the use of a separate vibrator unit.
3. Inclusive all valves, the "640" is a 9-valve job with one tuned RF stage, FC, two IF stages, detector-AVC-1st audio, 2nd audio output, noise limiter, BFO and rectifier. The valves used, in that order are EF39, 6K8, EF39, EF39, 6Q7, 6V6, EB34, EF39 and 6X5. These are all international octal based on the Mullard or Brimar versions and are therefore easily replaceable.
4. INPUT IMPEDANCE—400 ohms.
5. TUNING RANGE—
(1) 31 to 12.5 Mc/s.
(2) 12.5 to 5 Mc/s.
(3) 5 to 1.7 Mc/s.
6. TUNING. An electrical band-spread arrangement is used for this purpose. Fly-wheel control is utilised on the band-spread condenser drive. The scale is clearly marked with all amateur bands, and is so arranged to enable accurate re-setting to a spot frequency.
7. I.F. FREQUENCY—1600 Kc/s.
8. CRYSTAL FILTER is vacuum mounted to provide a high degree of stability. Phasing control and "in/out" switch are brought out to the front panel.
9. Sensitivity is better than 2 microvolts input, for 50 milliwatts output, at all frequencies.
10. OUTPUT. Audio frequency output exceeds 3.5 watts.
11. "S" METER. A socket is provided for an external "S" Meter.

● This set is now available from your local . . . distributor



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FEDERAL, QSL and DIVISIONAL NOTES



Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.
 Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.
 Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Coogee.
 Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, 116 Bogan St., Nyngan; South Coast and Tablelands: R. H. Rayner, VK2DO, 42 Pettit St., Yass; Southern: E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury.

VICTORIA

Secretary.—C. Preston-Smith, VK3QG
 Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.1.
 Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.
 Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: B. Sectrine, VK3BI, 17a Raglan Street North, Ballarat; North Eastern: D. Tacey, VK3DW, 18 Harold St., Shepparton; Far North-Western Zone: Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; Eastern Zone: J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official broadcasts.
 VK2WI.—Sundays, 1100 hours EST, 1790 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.
 VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.
 VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.
 VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.
 VK6WI.—Sat 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.
 VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 638J, G.P.O. Brisbane.
 Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.
 Divisional Sub-Editor.—H. T. MacGregor, VK4ZU, "Moquet," Eildon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.
 Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.
 Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.
 Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.
 Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.
 Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.
 Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.
 Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL

FREQUENCY ALLOCATIONS

Listed below are the frequencies at present available for Australian Amateurs, and also types of emission that may be used:—

3.5 to 7.0	3.8 Mc.—A1, A3.
7.0 to 14.0	7.2 Mc.—A1, A3.
14.0 to 26.96	14.4 Mc.—A1, A3.
26.96 to 28.0	27.23 Mc.—A1, A3, FM.
28.0 to 50.0	30.0 Mc.—A1, A3.
50.0 to 144	54.0 Mc.—A1, A2, A3, FM.
144 to 288	148 Mc.—A0, A1, A2, A3, FM, Pulse.
288 to 576	206 Mc.—A0, A1, A2, A3, FM, Pulse.
576 to 1345	585 Mc.—A0, A1, A2, A3, FM, Pulse.
1345 to 2300	1425 Mc.—A0, A1, A2, A3, FM, Pulse.
2300 to 5650	2450 Mc.—A0, A1, A2, A3, FM, Pulse.
5650 to 10000	5850 Mc.—A0, A1, A2, A3, FM, Pulse.
10000 to 21000	10500 Mc.—A0, A1, A2, A3, FM, Pulse.
21000 to 30000	22000 Mc.—A0, A1, A2, A3, FM, Pulse.
30000 and higher	Mc.—A0, A1, A2, A3, FM, Pulse

DX C.C. LISTING

Applicants for any one section of the DX C.C. need not submit again cards already submitted in respect of another Section. All applicants' cards submitted are recorded, with the necessary details, by the Awards Committee.

PHONE

Nil
C.W.
VK3CN (3) 120
VK3BZ (14) 109
VK3EK (10) 107
VK3VW (12) 105
VK2EO (7) 103
VK2QL (13) 101

OPEN

VK3BZ (5) 126
VK3HG (4) 121
VK2DI (2) 117
VK3KX (1) 106
VK3MC (6) 106
VK4HR (8) 101
VK2ACK (8) 100

Figures in parenthesis indicate membership number to the DX C.C.

Further changes in prefixes have been notified by various countries:—

Swaziland ZS7
Basutoland ZS8
Bechuanaland ZS9
Cyrenaica MD1 and MC1
Tripolitania MD2 and MT2
Eritrea MD3 and M13
Somalia MD4 and MS4
Trieste MF2
Germany (French) D5

SILENT KEYS

ALEC MARSHALL VK2HM

We regret to record the passing of one of New South Wales' really old time Amateurs. Best known for his work from Armidale on the old 32 metre band, Alec recently made a comeback on 20 metre c.w. Vale to a VK2 veteran.

THE R.A.A.F. RESERVE

During the past two months, the plans for the ultimate Permanent Air Force, the Citizen Air Force and the R.A.A.F. Reserve have gradually shaped themselves, and it is now possible to see the overall constitution of Australia's post-war Air Force. In February the R.A.A.F.'s plans for a huge reserve were announced, when the Minister for Air (Mr. Drakeford) revealed that the proposed strength of the Reserve will total many thousands of officers and airmen. It will consist of:—

- Members demobilised from the R.A.A.F. who are still eligible for active service;
 - Members of the Permanent Air Force who have completed their initial and subsequent periods of engagement;
 - Qualified aircrew and tradesmen of the commercial aviation industry;
 - Members who have completed a period of active service in Citizen Air Force Squadrons;
 - Officers whose short-service commissions have expired;
 - Ex-members of the R.A.A.F. Nursing Service, the W.A.A.A.F. and the Air Training Corps.
- "It is planned," Mr. Drakeford said, "that the Permanent Air Force Reserve will total 5,000 to 8,000 men, which is based on the estimated number of personnel required to cover urgent requirements in fixed and mobile establishments. We would need this figure to bring all existing units up to strength of war establishments and to form such ancillary units as would be required to accompany a mobile task force overseas at short notice."

The Permanent Air Force Reserve (or Active Reserve) will comprise personnel who are immediately available for mobilisation in an emergency in order to bring existing units to war strength and to man these additional units required upon the outbreak of war.

The Citizen Air Force Reserve will consist of ex-members and all persons who may be partly trained, and who will be available after mobilisation to fill establishments of the expanded Air Force.

The Permanent Air Force Reserve will be established, in the first instance, from personnel who have served during the 1939-45 war and who are able and willing to undertake such annual or

periodical training as the R.A.A.F. may, from time to time, require. In the initial stages, such training will be confined to lectures, films, and distribution of training pamphlets which will be made available at centres to be arranged by air and other officers commanding. Subsequently this Reserve will be maintained primarily from personnel completing engagements in the Permanent and Citizen Forces. Conditions of service are as follows:—

- Engagement for five years and further re-engagement each of five years;
 - Applicants must volunteer for service and be accepted for enlistment in the Reserve;
 - Applicants must possess honourable discharges;
 - Applicants must be medically fit for service;
 - Applicants must report annually, in writing, notifying addresses or change of addresses, and other particulars as may be required;
 - Personnel appointed to the Reserve will be appointed in the temporary rank previously held.
- Retirement from the Reserve will be governed by the same retiring ages as are applicable to the Permanent Air Force, viz.: General Duties Branch—Flight Lieutenant at 41 to Air Commodore at 52; Other Branches—Flight Lieutenant at 49 to Air Commodore at 58; Airmen of all Mustering and Categories—55 (other than those with exclusive aircrew qualifications for whom the retiring age is 40).

The Citizen Air Force Reserve will consist of personnel possessing qualifications required for service in the various branches of a modern Air Force. It will be constituted initially from trained personnel, including the R.A.A.F. Nursing Service and the W.A.A.A.F. who served during the 1939-45 war. This Reserve will be maintained partly from personnel trained in the Active Citizen Air Force, and partly from persons in civil life who possess qualifications required by the Service. Personnel serving in this Reserve will not be obliged to undertake any form of annual training but will be required to give an undertaking that, in the event of a national emergency, their services will be readily available to the R.A.A.F. However, it is hoped that they will voluntarily undertake the limited forms of training initially planned for members of the P.A.F. Reserve. Conditions of service are as follows:—

- Volunteers with previous service will be entered in the Reserve in their last substantive or higher temporary rank;
- There is no time qualification in regard to service, and personnel in this Reserve may withdraw on giving due notice;
- Personnel will be retired at the equivalent retiring ages for the Permanent Force;
- Persons desiring to enrol in this Reserve must undertake that they will report for duty when called upon in an emergency; that they will state their general health at time of notification.

tion, and report subsequent changes which may render them unfit for service; that they will notify changes of address promptly; and that they will re-affirm their desire to continue service and the state of their health at the time.

Reservists shall not be required to undergo training outside the Commonwealth or its Territories without their consent. When reservists are called up, they shall be liable to serve for the period for which the Reserve has been called out, or for the period for which they have volunteered, whichever is the longer.

The details of the regulations by which the Reserve will be governed are as follows:—

Reservists proposing to leave the Commonwealth temporarily shall notify the Air Board of their intention, but the appointment of reservists taking up permanent or protracted residence abroad shall be terminated;

Members on the Reserve shall rank as junior to members of the same rank in the Active Force, and, when called up for service, members of the Reserve shall rank and take command with members of the Active Force as though their seniority bore date from the date of being called up, or, if promoted whilst called up, from the date of such promotion;

Ages for retirement shall be as prescribed for members of the Permanent Force but, in time of war, the ages for retirement may be extended for an additional period not exceeding the duration of the war and a period of three months thereafter;

Persons appointed to the Reserve will be appointed in the substantive or higher temporary rank previously held, but persons who have not had previous service shall be entered in such rank as may be approved by the Air Board;

A reservist shall be liable to pass such tests of efficiency and other tests for his category and rank as may from time to time be required by the Air Board;

Reservists will not receive any pay, allowance or promotion unless and until they are called up for service, or in the case of the Permanent Air Force Reserve, unless they are required to undergo a period of continuous training.

The division of members of the Permanent Air Force and Citizen Air Force Reserve of officers will be categorised into general duties, technical, equipment, accountant, special duties, medical and dental officers and officers of the R.A.A.F. Nursing Service and the W.A.A.A.F.

It is intended that the airwomen's list will correspond with the new aircrew categories trade groups, and an additional category will be added to provide for the entry of ex-airwomen.

Consideration has also been given to the enrolment of members of the Air Training Corps who have retired from the Corps upon attaining the age of 15 years. The transfer of such members to a special category of the Reserve will create a valuable pool of enthusiastic young men.

The Reservists will be kept in touch with latest developments in the R.A.A.F. by means of special training bulletins, service pamphlets, newsletters, lectures, films and, wherever possible, visits to R.A.A.F. stations and units for the purpose of viewing new equipment and flying demonstrations.

Linking closely with the Air Force Association in each State, the R.A.A.F. will make every effort to foster the interest and enthusiasm of its Reservists.

It is intended that the plans include the incorporation of the pre-war Wireless Reserve in the R.A.A.F. Reserve, and that the numbers of radio personnel in the Permanent Air Force Reserve will be at least 230 officers and 1,800 airmen. This compares with the pre-war total of 193 members, 188 of whom received commissions during the war.

It will be the policy of the Service to enlist the aid of the Wireless Institute of Australia to assist in the training and recruiting of the part of the Reserve, and it is proposed to organise the radio functions of the Reserve on an area basis to effect the complete integration necessary if it is to be of maximum use in war.

Under such an organisation, the Chief Signale Officer of each R.A.A.F. Area will be responsible for the training of reservists including instruction in many of the latest radio and radar devices.

The value of reservists can be judged from the fact that the R.A.A.F. Wireless Reserve in 1939 permitted the R.A.A.F. to man vitally important circuits without delay and to carry out a development plan of expansion which would have been considerably delayed without the able and loyal aid of the members of the Reserve.

The R.A.A.F.'s new radio installations, costing £1,250,000, will include a radio teletype communication system using frequency shift and single side band techniques, which, combined with the tape relay system of traffic handling and a new system of very high frequency tone keyed radio links will

provide a modern and efficient communication system on which members will be trained.

High powered radio transmitters for broadcasting meteorological information are being installed at Canberra under an international agreement, which provide for weather transmission from Australia, to be linked with a chain of similar transmissions extending from South Africa to Hawaii.

R.A.A.F. aircraft will be fitted with very high frequency communication equipment, which will provide efficient air to ground communication and will also enable them to use the Department of Civil Aviation's Radio Ranges. These ranges give a visual indication that aircraft are on course when flying along the range.

The R.A.A.F.'s approach and landing aids will include the latest aids used in Britain and America, and which enable operators on the ground to see the exact position and height of an aircraft near the airfield, and to guide the aircraft to a landing by radio telephone. Another landing aid to be used is the system which comprises equipment fitted in the aircraft, and operated by the pilot. Indications received from the ground approach beacon and from inner and outer marker beacons will enable the pilot to almost land "blind." Other aids to be installed include Radar Beacons, High Power Medium Frequency Homing Beacons and Cathode-Ray High Frequency Direction Finding Stations. The latter, of course, have already been set up at coastal bases to facilitate the R.A.A.F.'s search and rescue service to which it is committed under the I.C.A.O. agreement.

AMATEUR CALL SIGNS

We have been notified by the P.M.G.'s Department that no Call Sign Book will be published this July. The following are the amendments, etc., to the 1st June.

Alterations:

- VK2ABN—W. North, 31 Mirville St., Concord West, N.S.W.
- 2ACK—R. C. Kirkwood, 355 Pennant Hills Rd., Pennant Hills, N.S.W.
- 2AFR—R. J. Reynolds, 12 Cotswold St., Westmead, N.S.W.
- 2AHF—R. H. Jones, Booralla Rd., Edensor Park, Canley Vale, N.S.W.
- 2AHZ—H. P. Jackson, "Benares," Baroona Ave., Church Point, N.S.W.
- 2AKW—G. H. Humphrey, 42 Carlingford Rd., Epping, N.S.W.
- 2BO—E. L. Andrews, "Barnsdale," corner Thorny Rd. & Cambridge St., Fairfield West, N.S.W.
- 2DS—W. St. Clair, Kempsey Rd., Port Macquarie, N.S.W.
- 2FN—F. G. Noble, c/o. 62 James St., Murwillumbah, N.S.W.
- 2IA—K. F. Handel, 529 Homer St., Earlwood.
- 2JX—P. H. Adams, "Waigani," Plateau Rd., Avalon Beach, N.S.W.
- 2LJ—R. F. Collett, 50 Sharpe St., Belmore.
- 2ON—R. L. Douglas, Baan Baan St., Dapto.
- 2PI—W. L. Pitts, "Kenmira," Hall, A.C.T.
- 2QI—C. Bowler, S.S. Iron King, c/o. 25 Castle St., Randwick.
- 2QR—J. E. Bursdal, "Carlolla," Castle Hill Rd., West Pennant Hills.
- 2QW—A. G. Bird, 4 Drummond St., Belmore.
- 2TD—K. R. Doyle, 7 Great North Rd., Five Docks.
- 2VM—G. W. Morris, 134 Falcon Street, North Sydney.
- 2VQ—J. W. Paton, 78 Fairlight St., Manly.
- 2VT (formerly VK6AV)—E. J. Eastley, "Waral," Young.
- 2YU (formerly VK2NU)—D. Dawson c/o. Station 2TM, Tamworth, N.S.W.
- VK3ABJ—B. J. Rogers, 59 Andrew St., Windsor.
- 3ACS—R. C. Seddon, 7 Wilson St., Brighton.
- 3AHI—H. Jupp, Glenroy Rd., Glenroy, Vic.
- 3AJP—A. R. Herald, 12 Elm St., Surrey Hills.
- 3ALW—O. L. Wirau, 31 McArthur St., Moorabbin, Vic.
- 3BS (formerly VK4LP)—L. N. Page, 589 Whitehorse Rd., Surrey Hills, Vic.
- 3DC—D. G. Caldwell, 23 Lovell St., South Hawthorn, Vic.
- 3EQ—N. S. Gee, 14 Ryot St., Warrnambool, Vic.
- 3FQ—A. C. Yeomans, 25 Duke St., Kew, Vic.
- 3HQ—Mrs. M. L. Williamson, Bryon Avon, Calawadda, Vic.
- 3OV—A. F. Cunningham, cnr. Queen & Webb Streets, Altona, Vic.
- 3PH—N. G. Williams, "Craelbrae," High St., Seymour, Vic.
- 3QE—E. L. Einsiedel, cnr. Draper & Blackshaw Sts., Ormond, Vic.
- 3QQ—J. R. Lancaster, 259 Nepean Highway, Parkdale, Vic.
- 3RR—R. J. Blackham, 31 Fellow St., Mitcham.
- VK4AN—E. Heckenberg, Woodstock Ave., Taringa.
- 4DC (formerly VK4QA)—K. Khan, 22 Sheridan St., Cairns, Qld.
- 4JH (formerly VK2AJH)—J. E. Hills, c/o. 4GY, Gympie, Qld.
- 4NL—N. G. Dangerfield, Hobart St., Ayr, Qld.

- 4SR—T. S. Shoring, 178 Oxlade Drive, New Farm, Qld.
- 4UX—C. P. Singleton, Tyrell St., Stanthorpe.
- VK5BL (formerly VK0BS)—W. R. Sands, 16 Beckman St., Plympton, S.A.
- 5PK (formerly VK2AGK)—P. T. Hainsworth, 83 Leader St., Forestville, S.A.
- 5VC—J. G. Mason, 10 Buxton St., Alberton.
- 6ZN—S. McNamara, 4 West Parkway, Reade Park, S.A.
- VK6WD—W. D. Scott, 225 Wellington St., Northam.
New Issue:
- VK2ER—J. Chessell, 17 Elizabeth St., Dulwich Hill, N.S.W.
- 2FU—H. J. Trick, 20 Hill St., Balgowlah.
- 2IX—R. F. Mussett, 112 Forsyth St., Wagga Wagga, N.S.W.
- 2KT—L. P. Gerily, 71 Albion St., Waverley.
- 2LL—H. W. Waugh, 57 Bent St., North Sydney.
- 2MX—J. W. Jennison, "Wallaroo," Mathoura.
- 2SR—G. E. Switzer, 177 Bacon St., Grafton.
- 2TZ—C. D'Evelynes, "Clayden," Grana Rd., Mona Vale, N.S.W.

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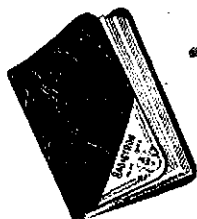
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 2YK—O. A. Coyle, 84 Carlton Cres., Kogarah Bay, N.S.W.
 2YS—N. B. Littlejohn, 23 Victoria St., Strathfield, N.S.W.
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 3AFQ—F. A. Glover, 36 MacArthur St., Sale.
 3AFS—A. F. Stow, 8 Short St., Northcote, Vic. (Portable).
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 3AGO—E. C. Sloss, 63 Roslyn St., Burwood.
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 3AMR—M. J. Rieper, Bent St., Bairnsdale, Vic.
 3ASS—Army School of Signals Radio Club, Balcombe, Vic.
 3MI—W. A. McLeod, 6 Palmerston Gve., Oakleigh, Vic.
 3PB—G. J. Griffiths, 59 Flemington Rd., North Melbourne, Vic.
 3QT—R. L. Topp, 393 Elgar Rd., Mont Albert.
 3RH—H. A. Reid, 65 Railway St., Traralgon.
 3RX—J. M. Gillespie, 22a Mercer Rd., Malvern.
 3WJ—E. Ironmonger, 23 George St., Hartwell.
 VK4CY—H. R. Greber, Grand Hotel, Wharf St., Maryborough, Qld.
 4GS—G. Strohhfeldt, Halland Tee., Camp Hill.
 4MP—F. M. Nolan, Portable of VK4FN.
 VK6DY—G. E. Delahoy, Aeradio Station, Darwin.
 5JB—J. S. Kirkpatrick, 16 Sussex St., Glenelg.
 5TD—T. J. Davies, 63 Cator St., Glenside, S.A.
 VK6BM—C. Medbury, Carroll St., Applecross, W.A.
 6WI—W.L.A. (W.A. Division), Box N1002, G.P.O., Perth, W.A.
 VK7AN—W. C. Gee, 5 Winasombe Cres., Sandy Bay.
 7CA—M. A. Chaplin, 33 D'Arcy St., South Hobart, Tas.
 7OI—O. L. Brown, 314 Dacey St., Hobart, Tas.
 VK9ML—M. S. Lang, c/o O.T.C. (Aust.), Port Moresby, Papua, T.P.N.G.
Cancellation:
 VK2ALE—C. J. Boyton, 78 Salisbury Rd., Stanmore.
 2JS—J. M. Roberts, 12 Nicholas Ave., Campsie.
 2MR—M. R. Cran, 35 George St., Rockdale.
 VK3BS—A. B. Splatt (deceased), Mountain View Road, Montmorency, Vic.
 3PB—J. A. B. Boyd, 40 Grant St., East Malvern.
 3QT—A. W. Norgate, 104 Melbourne Rd., North Williamstown, Vic.
 3RX—C. Serle, 93 Mitford St., Elwood, Vic.
 3WJ—C. S. Woods, Colac, Vic.
 3ZA—E. L. A. Sims, Montrose Ave., Apollo Bay.
 VK4DM—D. H. Anstey, Tenth Ave., Coorparoo.
 4FY—T. W. Petersen, Sirius St., Coorparoo Heights, Qld.

4XD—K. W. Nutt, 57 Roberts St., Townsville.
 VK6PK—P. E. Kernick, 12 Canning Highway, South Perth, W.A.

FEDERAL QSL BUREAU

A new QSL Bureau for Germany has been established with address as follows: QSL Bureau, Stuttgart, Postbox 586, Stuttgart, Germany. To quote from their advice: "We distribute for all Germany but British and U.S. forces in Germany have their own QSL service."

PK6XA E. A. Krygsman, care N.N.G.P.M., Morotai, N.E.I., in forwarding a large bunch of QSLs adds the following: "Please ask VK Hams to QSL. I am still waiting."

Geoff Warner (VK9GW) asks all State QSL Managers to again note that he cannot distribute for any VK9 stations not shown on the following list: VK9OU, 9BI, 9NK, 9ML and 9GW. Geoff has returned a stack of cards for other VK9 stations who will not bother to claim them.

WSGER, the QSL Manager for WS, with address as 959 Riverside Drive, Dayton 5, Ohio, U.S.A., enjoys all QSL Managers to forward WS cards direct to him and thus assist him to provide a better service. He is also desirous of Australian postage stamps.

G2FSY, Fredk. J. Brock, 9 Christian Fields, Norbury, London, S.W.16, England, in gratefully acknowledging the receipt of a food parcel from the Victorian Division, expressed his desire to contact any VKs who were in the R.A.F., particularly those attached to 18, 88 or 114 Squadrons during the war. Ex-Flying Officer Brock is on the air on 28 Mc. every Tuesday from 0800 to 1900 G.M.T. with breaks for fodder). He would appreciate a card from any of his old squadron mates.

Old-timers of the Victorian Division were pleased to see Gil Miles (VK2KI) at the June Divisional meeting. Gil was scheduled to give a talk at a recent VK3 Divisional meeting but had to return to Sydney at short notice for an emergency job. It is anticipated that the talk will materialise at a not too far distant meeting and it is hoped that his subject will be Radio Controlled Miniature Aeroplanes and the methods by which these miniatures transmit to ground weather data from altitudes of thousands of feet.

Welcome home to Noel Roberts, VK3NR ex-VK5NR, after a goosily sojourn at Katherine, N.T., where he made large lullies of DX on many bands. Noel, like a lot more of us, notes with dismay the bedlam on that good DX band—7 Mc.—and wonders how long the chaotic conditions there are to be permitted to continue. Our wish Noel is for a long stay in VK3, and a good posting when another eventually comes along. VK5 QSL Manager please intercept Noel's cards and divert them to VK3.

An interesting and probably a record radio family is that of Sam Roth, W0RIA, of St. Paul, Minn., U.S.A. Sam, who is ex-W9RIA, musters the following call signs under his family group: VE4DF, VE3RN, VE4CL, W9TSY and W9QBT.

Recommendations for W.A.C. Certificates for the period January 1 to May 31, 1948, are: Phone—VKs: 3XJ, 3HO, 3HW, 3JE, 6PJ, 6DX, 7AB; C.W.—VKs: 3JE, 3EK, 4FJ, 5FH, 5LG, 6BG and 7DW. No applications were received from VK2.

SOME DX QTHs

AP2D—J. K. McDowall, 15 Ruthven Ave., Giffnock, Scotland (or GM3AR).
 AP3B—D. T. Boffin, 4 Racecourse Rd., Lahore, Pakistan.
 AR1RI—R. Jalal, Box 35, Damascus, Syria.
 ARSAB—Jean Remonay, University of St. Joseph, Beyrouth, Lebanon.
 ARSBC—Box 1119, Beyrouth, Lebanon.
 CSYR—Yu-Ruey Chi, Box 73, Lanchow, Kansu, China.
 CZ2AC—Rosetta Moncini, Vico Teatro Ristori 10, Verona, Italy (Station in Monaco).
 HV2B—c/o Radio Station, Vatican City, Italy.
 LZ2AA—Box 123, Sofia, Bulgaria (Under Cover).
 ET3AE—Bob Newsberg, Box 145, Addis Ababa, Ethiopia.
 ZD1BD—Royal Signals, Freetown, Sierra Leone, West Africa.
 Z89NU—Aeradio Palapye, Palapye Rd., Bechuanaland, South Africa.
 EA3ZT—Mario Flaque, 268 Aragon, Barcelona, Spain.
 EA5AF—Lorenzo Navarro, Puerto Rico No. 37-20, Valencia, Spain.
 EA1A—via WIAZW.
 EA1AB—F. Fuente, Oficial de Telegrafos, Santander, Spain.

NEW SOUTH WALES

ANNUAL REPORT OF THE COUNCIL 1947-8 Ladies and Gentlemen.

In keeping with the world in general, the transition from war to peace has presented the Division with its many and varied problems, the majority of which so far encountered have been satisfactorily overcome. The responsibilities of the Council have been considerable and without exception, not one has been able to devote the attention to Institute affairs that he would have wished. It is to be regretted that we were without the services of a Secretary for five months in spite of all efforts to find a volunteer. At the same time, due to the state of our finances, consideration could not be given to the appointment of a paid Secretary. We are happy to report that with the appointment of Mr. Wal Nye (2XU) our secretarial problems have been temporarily removed whilst the financial position as disclosed by the Accounts and Balance Sheet must be regarded as satisfactory under the circumstances. When studying the accounts, it should be remembered that there has been no increase in the membership fees although the cost of printing and stationery, postage, rent, per capita to the Federal Executive and the magazine cost have all risen considerably.

A Finance Committee comprised of 2VN, 2UX and 2AGG was appointed early in the year to assist and report to Council concerning our finan-

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

VK2AJB—G. C. Curle	R.A.A.F.
VK2BQ—F. Easton	R.A.A.F.
VK2JV—C. D. Roberts	A.M.F.
VK2VJ—V. J. Jarvis	R.A.A.F.
VK2YK—W. Abbott	R.A.A.F.
VK3DQ—J. D. Morris	A.M.F.
VK3HN—J. McCandish	A.M.F.
VK3IE and VK3EM—J. Mann	R.A.N.
VK3NG—N. E. Gunter	M.N.
VK3OR—M. D. Orr	R.A.A.F.
VK3OW—G. L. Templeton	R.A.A.F.
VK3PL—J. L. Colthrup	R.A.A.F.
VK3PV—R. P. Veall	A.M.F.
VK3SF—S. W. Jones	A.M.F.
VK3UW—J. A. Burrage	R.A.A.F.
VK3VE—J. E. Snaddon	R.A.A.F.
VK4DR—D. Laws	A.M.F.
VK4FS—F. J. Starr	R.A.A.F.
VK4PR—R. Allen	R.A.A.F.
VK5AF—C. A. Ives	R.A.A.F.
VK5BL—Brian James	R.A.A.F.
VK5BW—G. Phillips	A.M.F.
VK6GR—A. H. G. Rippen	R.A.N.
VK6JG—J. E. Goddard	R.A.A.F.
VK6KS—K. Anderson	A.M.F.
VK6PP—P. P. Paterson	R.A.A.F.

We wish to finalise the list of names above within the next month as the Perpetual Trophy for the Remembrance Day Contest is to be inscribed with the above list of names. Please send any information, changes to above list, etc., to Federal Secretary, Box 2611W, G.P.O., Melbourne, at the earliest.

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cial affairs. This Committee has done much helpful work.

In the Federal field, many of the changes in regulations recommended at the 1947 Convention have been introduced by the Postmaster General's Department as the results of the efforts of our Federal Executive.

Whilst it is regretted that we are little further ahead in moulding the Divisions into a single body—nation-wide W.I.A. governed by a Federal Council working to an all embracing constitution, your Council has left no stone unturned in striving to attain this end. This matter will again be pressed at the 1948 Federal Convention.

In spite of adverse comment in certain quarters, it is felt that we should be well satisfied with the decisions reached at the International Telecommunications Union meeting held at Atlantic City. Few people realise the magnitude of the demands now made for frequencies by commercial and defence interests throughout the world. There is just one

point however, and that is that if we are to retain our present allocations, they must be put to good use—furthermore, we must have unity. As the W.I.A. is Australia's national body and thus the mouthpiece of the Amateur in the Commonwealth, we cannot relax until we present 100 per cent. of the licensed Amateurs.

To put our own house in order, it has become quite obvious that the Division is in need of Club Rooms and a paid Secretary and that means finance. So far, we have been unable to solve this problem but suggest to all members that it be kept foremost in their mind for the future.

Membership.—As at the 29th February, 1948, the membership stood at 495, comprised of 347 city and 148 country members. During the last few months of the year, a membership drive was inaugurated—a circular setting out the benefits to be derived from Institute membership together with an application form is being forwarded to all new licensees, a circular couched in somewhat similar terms is sent to all non-members with their QSL cards whilst much publicity is given through the medium of the regular VK2WI broadcasts. Results so far show that the drive is having the desired effect and it is up to each and every member to do his or her part.

During the year, Mr. W. M. Moore (2HZ) and Mr. W. Zech (2ACP) were elected to Honorary Life Membership in recognition of their sterling services to the Institute; Mr. Zech being a foundation member. Mr. Moore in acting as the principal operator of VK2WI during the year has been of great assistance.

Disposals.—A big percentage of both city and country members have participated in the purchase of a considerable quantity of equipment from the Liquidation Commission. We desire to place on record our appreciation of the Queensland and Victorian Divisions' co-operation in making available to our members, equipment from their respective States. As disclosed by the accounts all equipment has been passed to members at cost plus a small margin to cover freight charges. The brunt of the work in handling this equipment has been ably borne by 2YP.

A.O.C.P. Classes.—Two A.O.C.P. Classes have been conducted by the Division during the past twelve months—the first under the management of 2ABS and the course now in progress under 2BF. From the experience gained in earlier classes, it was decided to extend the duration of the course from three to five months.

V.H.F. Section.—This section under the able leadership of 2NP with 2PW as Secretary has made great progress. Meetings are now held on the second Friday of each month in the small hall at Science House and the attendance has been as high as 50. Some really first-class lectures have been provided v.h.f. enthusiasts whilst the work of the section as a whole must be regarded as highly satisfactory.

Annual Dinner.—The Annual Dinner was held at the "Dungowan" on 7th August and attended by some 55 members and visitors. Distinguished guests included the Superintendent of Wireless Mr. T. Armstrong and the President of the Institution of Radio Engineers, Mr. R. Alsoop. It is to be regretted that due to the fact that a large number of members who had signified their intention to attend did not do so, the Division suffered a considerable financial loss as disclosed by the accounts.

Amendments to Articles of Association.—During the year, our Articles of Association were amended to permit the membership to be increased from 500 to 1,000 and to provide that our financial year ends on the last day of February annually. This date is now uniform to all Divisions.

QSL Bureau.—The number of QSL cards handled exceeded 3,000 per month and the Bureau ended the year just square financially. During the year, lack of envelopes and very erratic overseas mail made the running of the Bureau very difficult and the ideas of Council for improving the service to members had to be curtailed. The Council thanks those who came forward with envelopes when lack of them had made the work extremely arduous—2DI, 2ID, 2OE, 2TH, 2ZC not to forget 2AGS who collected them between Melbourne and Perth and 2FA whose efforts enabled members to receive their Monthly Bulletins at a crucial period! The QSL Officer would like to record his appreciation of the help he received from 2HI whose assistance was invaluable in preventing Bureau work from accumulating whenever there was a sudden rush of mail. Our sincere thanks also go to Mrs. Corbin for her continued assistance in not only the QSL Bureau but also the despatch of the monthly bulletins.

Council.—The vacancy on the Council caused by resignation of 2TR on 10th February was not filled due to the proximity of the Annual General Meeting. 2TR regrettably tendered his resignation for business reasons. The Treasurer, 2DR, was also

compelled to resign for similar reasons, however his responsibilities were assumed by 2AND who has carried on in a most efficient manner.

The following table shows the attendance of Councillors at meetings, the total number held being 18: Messrs. P. H. Adams 17, T. R. Anthony 7, J. B. Corbin 16, G. W. Dukes 16, C. D. Hutchison 14, M. H. Meyers 16, J. Moyle 17.

In conclusion, we would like to reiterate the well chosen words of our 1947 President, Mr. Bill Moore, in his report: "It is an accepted fact in physics that you can't get even as much out of a machine as you put into it." It is generally believed that this extra effort called for from members has not been forthcoming to the extent necessary. We thank you however, for your support and wish the new Council, whoever they may be, every success.

For the Council,
M. H. MEYERS, President.

TREASURER'S REPORT

The year 1947-8 has been a record year for the N.S.W. Division as an examination of the accounts and financial statements will show. There are however, a few points which I would like to bring to your notice.

The amount of £86/8/- shown as outstanding subscriptions at first appearance seems rather high, but as the February statements have not been sent out owing to pressure of work and the balancing of the books, it is estimated that this figure will be reduced by £61/13/- leaving a balance of £24/15/- against which a reserve of £15 has been provided for bad debts.

The Disposals Account shows a balance of £40/2/9. There are, however, charges which have to be met, which have not as yet come to hand. These include freight and shipping and insurance on twenty SCR522 equipments from Brisbane. The amount of £162/8/6 is money paid in by members on orders which have not as yet been fulfilled.

A.O.C.P. Class No. 5 is still in progress and part of the amount of £20/0/6 held by the Class Manager will be spent in defraying Class expenses to complete the course. This will reduce the Class profit to below the £92/6/6 shown, but the Classes must be considered well worth while.

The £25 sent to the Federal Executive was this Division's share in the cost of printing certificates which included various Contests, W.A.S., Membership and DX C.C. awards. It has been decided to write this amount off over a three year period during which the certificates will be used.

The rent paid in advance to Science House includes the use of the small hall for the V.H.F. Section as well as the main hall for general meetings and covers the period March to December.

With the adoption of a uniform fiscal year and all subscriptions falling due on the last day of February, my work will be considerably simplified and I will be introducing a more comprehensive system of accounting than that in use at present. Also the work of sending out statements and recording membership data will be much easier. I should like to take this opportunity of urging all members to settle their accounts promptly and thus save me much unnecessary work in sending out extra statements.

B. H. ANDERSON,
Honorary Treasurer.

NORTH COAST AND TABELANDS

2GI experimenting with 3.5 Mc. antenna, fortunate in having plenty of space for skywires. Is troubled with a.c. hash; on 7 Mc. during the day. Solid signal on 3.5 Mc. comes from 2AGM; bad line regulation, but uses auto transformer to keep the filaments under control. 2XO has been on vacation and visited 2GI, 2OE and Lismore gang; next stop Brisbane. 2OE also on vacation, brief visit to 2SH and 2PA. 2AFP troubled with line hash, but heard occasionally on 7 Mc. 2JC on holidays from Sydney (University vacation) and was active on 7 Mc.

With only 5 watts 2ATH is going places on 7 Mc., using the QRP rig as a fireside companion on these winter nights. QRO rig on 14 Mc. Pressure of work keeping 2WC off air; some gremlins in Receiver also. 2JK another one holidaying in Lismore and heard from 2LH, still sounds the same and can be distinguished over any outfit. 2ARJ on 7 Mc. but has some rig trouble, hope they are only little ones! 2SH worried with 3.5 Mc. overtone from 7 Mc. transmissions. 2PA finds 3.5 Mc. band interesting, using long wire. Has b.c.i. plus and phone operating limited in early hours.

NEWCASTLE ZONE

2XQ ardent c.w. man using 6 to 10 watts on 7 and 28 Mc. phone, a nice signal. 2AMH has been heard on 28 Mc. phone, welcome Bill. 2ADX

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also very active on 28 Mc. phone. 2AGD taking advantage of dead nights on 28 Mc. by re-arranging shack and putting finishing touches on new receiver. 2AHA awaiting return of DX C.C., congrats on advance. 2BZ not heard on the low bands, still giving the v.h.f.'s the works. 2CS doing hard work cutting many and various holes in 10 gauge steel, how are the blisters? 2CI did good work in the Trans-Tasman Contest, should do well. 2TE getting out extremely well judging from reports. 2FQ won an 807 for a novelty code contest at Newcastle Club recently.

COALFIELDS AND LAKES ZONE

2ABZ been holidaying and has plans for complete re-build even including antenna. 2OC active on 144 and getting through to Newcastle and Cessnock, keeps an eye on 50 Mc. for anything unusual. 2TX nothing heard of him during last month. 2AMU getting out fine on 28 Mc. phone judging from the DX calling him. 2RU consistent on 50 Mc. and maybe 144 Mc. soon. No news of the Woy Woy gang. 2TV heard on 28 Mc., what's the latest antenna? 2XT—what progress with the beam? 2YO appears to be inactive.

2KF active on 28 Mc. in the week-ends and doing a bit on 50 Mc., look like loosing Bob when housing difficulties ease. 2ADT still doing things, blew up his 832 on 144 Mc.; before the demise worked Newcastle, Wyong and Blue Mountains, only heard occasionally on 14 and 28 Mc. 2MK doing a little on 28 Mc. and hopes to have new rig on shortly. 2PZ at moment erecting 70 foot steel tower (ex-R.A.A.F.), when finished will have motor at top and several beams. 2YL taking things quietly, playing tennis, spams on 7, 14 and 28 Mc. Please send news to 2YL the first week in each month.

WESTERN ZONE

Recent arrival in the Blue Mountains is 2EF at Warrimoo, busy with commercial ticket at the moment. 2LY building super rig using two finals (813a), 807s in the exciter. 2FI sometimes leaves the v.h.f.'s for a QSO on 7 Mc. 2IZ confining activity to 144 and 50 Mc. 2FH at St. Mary's has erected a 58 foot steel tower, four elements on 14 Mc. will go on top—it is designed to withstand a 90 m.p.h. gale. 2HZ building c.r.o. and super f.s. meter, also known as "The Voice." 2ACU settled down in new house at Coonamble, working nice DX on 14 Mc. 2AMR has new rotary working on 14 and 28 Mc. 2OK and 2VZ not heard often.

2II still working 14 Mc. DX; also on a system of remote control. 2ACT QRT trapping rabbits. 2TG main interest still DX. 2ALX still has the

nicest phone on all bands. 2JW is re-building for QRO. 2NS has game sewn up, a couple of Vees on 14 Mc. and the DX comes back; switch the carrier on and off on 7 Mc. phone and back they come. 2IE been on holidays in VK4, still mad with the DX. 2OT trying to work some of the easy 28 Mc. DX I mentioned, but finds it far from easy owing to poor line QRM. 2QA has the ideal QTH, no noise on any band and little traffic to cause ignition noises. 2WH not heard much; concentrating on fat lambs? 2BT bowling them on 14 Mc. phone, when does the phone DX C.C. arrive Billy? 2ALR worried after a look at the back of 2LY's new rig.

SOUTH COAST AND TABLELANDS

The new Wollongong Club is making arrangements to affiliate with the W.I.A.; 2WV and 2UK handling the problems. 2UK has altered modulation system and power transformer doing good job as mod. tranny. 2WP now on 7 Mc. with 6 watts plate phone to Type A Mark 3, larger stage to be added, v.f.o. coming too and two 50 foot bush poles to go up. From Canberra, 2GU active on 50 Mc. regular contacts with 2JU and 2FA. Arch also re-building for 144 Mc. 2JQ believed to have worked South America on 7 Mc. c.w., visited Yass and saw 2ALS and 2DO.

2ALS unlucky lately, off duty due to sickness. 2OY, of Goulburn, used an 804 and 30 watts sup-

pressor modulation, new mod. outfit on way 807s in ABZ. 2AIZ same QTH, will be heard soon on 14 Mc. c.w. 2OW with No. 11 on 7 Mc. works VK8 and ZL. 2MT working DX on 14 Mc., also will be building for v.h.f.'s. 2IA still busy on house renovating. Would stations in the Zone please stand by to contact 2DO on 7100 Kc. after 2WI broadcasts and supply the latest news.

SOUTHERN ZONE

2ANG had parasitic trouble in buffer stage and may re-build, skiing is main pastime in the winter. 2APW and 2VK both waiting on AR7 receivers, sorry to hear of serious illness of 2VK's father, we hope for a speedy recovery. 2OJ listening around 50 Mc. but so far no signals heard, Noel stands by for Southern Zone stations on 7180 Kc. and would be pleased to receive any news. 2ST using 6F6 and 807s and 50 watts; is trying crystal mike instead of dynamic headpiece, result much improved quality. 2MF getting downward modulation; interested in the v.h.f.'s and hopes for 50 Mc. contacts. 2AIB putting up 14 and 28 Mc. beams, changing the 100 watt transmitter into a bandswitching job, in the interim using phone on a Type 3 Mark 2.

VICTORIA

At the June general meeting two films were screened, one entitled "Radio Antenna Fundamentals" and the other "The Creation and Behaviour of Radio Waves."

The first film illustrated, by means of animated drawings, the reflection of travelling waves on antennae and transmission lines, and the production of standing waves followed. Methods of feeding antennae with different types of transmission lines was illustrated and the effect of series inductance or capacitance on the electrical length of an antenna shown. Various types of aircraft antennae were also shown.

In the second film the propagation of radio waves was illustrated diagrammatically. The production of electromagnetic and electrostatic fields around the electric circuit led on to the production of electromagnetic radiation from an antenna. The film illustrated the propagation of ground waves and the reflection of waves from the ionospheric layers and showed how fading occurs.

These films, on first principles of antennae and wave propagation, serve as an introduction to the subject of the talk to be given at the July general meeting by Dr. A. L. Green, who will discuss the application of ionospheric Predictions to Amateur Radio Communication.

T.A.C. MEETING NIGHTS.

It is noted that the Technical Advisory Committee of the Victorian Division of the W.I.A. hold meetings at the Institute Rooms at 191 Queen Street, Melbourne, regularly throughout the month.

All members and visitors are cordially invited and welcome to attend these meetings at which many technical discussions and demonstrations take place. Meeting nights are as follows:—

- 1st Tuesday: Practical Work.
- 2nd Wednesday: V.H.F. Group.
- 3rd Tuesday: T.A.C. General Meeting.
- 4th Tuesday: Practical Work.
- 4th Wednesday: Receiver Group.
- 5th Tuesday: Practical Work.

VKBWI will announce the programme for these individual meetings in forthcoming broadcasts.

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T.A.C. ACTIVITIES

Receiver Group.—The May meeting of the receiver group lapsed owing to the inability of the group leader (Mr. George Neilson) to attend. At the June meeting the ARS receiver currently available from disposals will be featured, and its performance, adjustment and possible modifications discussed.

V.H.F. Group.—At the June meeting results of the 144 Mc. field day were discussed. Mr. Don Hope described the construction of a non-reactive resistor for use in power measurement at v.h.f.

T.A.C. Executive Group Notes.—The erection of a new antenna for VK3WI should be completed shortly. This has been delayed through the difficulties involved in raising the far end, but a steely-jack has now carried out the necessary "high altitude" work and the remaining difficulties will be speedily overcome.

The Sunday broadcasts from VK3WI are now being transmitted on 3.5 Mc. and 7 Mc. simultaneously and reports on the 3.5 Mc. transmission, especially from country members, will be greatly appreciated.

EASTERN ZONE

The Eastern Zone hook-up is becoming larger monthly and although there are already 17 stations that have joined in, there is still a number yet to make an appearance, so chaps don't forget every Sunday at 2000 hours—on 3650 Kc.

SANC made his first appearance with very nice

SACE is doing very well on 3.5, 7, and 14 Mc. with a Type 3 Mark 2. On 14 Mc. c.w. he has worked all W call areas, J, C, G, ON, VE, etc.; also Ws and VEs on 7 Mc. Is putting up a better skyhook. Clyde specialises in marathon ragchews, so beware. 3CH is a real old-timer active again. Has a half wave 3.5 Mc. cage (1) 60 feet high, zepp fed, and is getting out well on 3.5 and 7 Mc. c.w. and phone. His spare time is limited with keeping the ergs up in the local power house.

3AIT, of Sea Lake, has been down visiting the Birchop gang. 3HR has got a pile of disposals gear including Command receivers and transmitters which he hopes to convert to portable use so that he can have his contacts when out on the road jobs so much. His alternator has broken down beyond repair so he is inactive at present. We are all expectantly awaiting news from 3TL of the new rotary beam. 3CE has the complete AT57 ARS/ACU and gen-motor power supply with cables, junction boxes and all fixings AND the book of words. 3OA is quite inactive as far as radio is concerned. Ian hasn't even looked into his SCR522 yet, but intends to tackle 144 Mc. soon.

3BM has cleaned up the sowing operation, and hopes to indulge in technical activity in the shack while waiting for the crop to grow. It's a grand life farmer-come-ham. Wally Loveland has his 4-band f.b. Bendix transmitter and proposes to use it to drive external finals. Is using a 550/12 volt genemotor to obtain the supply voltages. ARS is

assists in keeping the local b.c. rig on the air. 3FC has left Mildura and is active on 7 Mc. at Ouyen, where he is postmaster. The d.c. mains have given him a few headaches, notably during his second night on the air at his new QTH, when the receiver filaments blew out. 3TL is engaged in a re-build and will take the air soon with p.p. 507s. Radio service is his business.

3GZ has a fine receiver completed with satin-finish aluminium front panel and AR7-type dial drive. Band switching, crystal filter, noise limiter and S meter should make this job hot up on 28 Mc. Max has charge of the local b.c.s. technical staff. 3BV and 3ARG are students at the University Branch. Ian has been active with a Type A Mark 3. Gerry is back from first-term vac. with a load of gear with which he plans to build a 50 Mc. rig. 3PX is heard occasionally on 7 Mc. c.w., but his photographic work keeps him from the key.

3MF has increased power from a Type A Mark 3 to an S07 running 25 watts, also has a modulator under test. When not in the shack he is attending to the cares of local pianists' instruments. 3NG, a Red Cliffs horticulturist, is awaiting connection to the a.c. main. When the juice is available, there is likely to be a zone muster to assist in felling trees around the shack. Bert says some of these are about 70 feet high. Ex-3UG, who had given the game away post-war, has been bitten by the 50 Mc. bug, and is now gathering components for a rig to go on that band.



The gathering at the Third Eastern Zone Convention at Tinambra

phone. 3QZ and 3SS deserve a word of praise for the good job they have done re distribution of the Zone's disposals gear. 3HZ, 3VL, 3US and 3CI are to be congratulated on their fine achievements, when on the last 144 Mc. Field Day they had some very interesting contacts and by reports there seems to be big possibilities with this band. 3VE is doing a good job on the bush fire frequency, but says there is not much to report this weather; Bill is always on the spot on Sundays. 3PR has been carrying out low power 50 Mc. tests with 3DI who reports S9 signals. Ron was also successful in putting a signal through to 3HZ.

Another newcomer to the hook-up is 3TH who puts in a very fine signal and takes a keen interest in the zone's activities. Gordon is also interested in v.h.f. 3AMR also made an appearance with a S9 c.w. signal using a Type A Mark 3. 3AEP has a new rig on the way but in the meantime joins in the hook-up with the old one. 3IV is also making alterations to his rig and is now putting out a 1.b. signal. 3BB is busy building a modulator and hopes to be on again soon. 3ALS puts out a very good signal on 7 Mc., but he must be busy on Sunday nights. 3AHK has the DX bug, don't you ever hit the hay before midnight? 3AJL has not been in the hook-up for a while, what is the hold up Jack?

NORTH WESTERN ZONE

The N.W. Zone Convention has been definitely fixed for Saturday and Sunday 28th and 29th of August at the farm homestead of 3BM, six miles out of Quambatook. Members of four Zones have already indicated their intention to come, and all visitors will be welcome.

This Zone has shown its appreciation of the Disposals Committee's good work by very substantial purchases, being the greatest per member of any Zone. The 3.5 Mc. transmission from 3WI is very well received up here, with less fading and less interference.

perking well. He is still held up for birth certificate. Should be on the air as soon as licence arrives. Bud Page has his ARS going. How's the c.w. practice, Bud?

CENTRAL WESTERN ZONE

Judging from "Disposals" notes in last month's "A.R." this Zone will have to be renamed the "Thrifty Zone" or the 1/10 zone. In case some of our members wonder why we spent so little, our representative went down with £90 in his pocket, but as the wanted goods were apparently not available he wisely kept the cash in his pocket.

3TY is settling down nicely at Rupanyup and has the gymnastics of the d.c. supply tricked with a VR150 plus chokes and condensers to remove most of the line noise. Bill has also cleared up a 10-year-old b.c.l. QRM problem and is now looking for the 3.5 Mc. coils he threw away.

3DP is still playing round with his ARS, as Jim says, it looks less like an ARS every day. We believe 3XC is building a wonderful contraption to remote control the transmitter, how about the dope Willie? 3IQ is at present tied up with commercials on the "Tests" and still building the 50 Mc. gear. Sent over a wavemeter the other day, but the P.O. boys dismantled the condenser on the way across.

3YW has at last got the bugs out of the r.f. stage of the 50 Mc. receiver and looking for 3IV's visit to hear something. 3AKP is still getting his share of DX on 7 Mc. without burning the midnight oil; quite happy about his v.f.o. too. 3ARM, our most western member, was last heard of in full pursuit of a 500 volt genemotor. Did you catch it Bob? Next Zone hook-up 11th July (Sunday) 10 p.m. on 7120 Kc.

FAR NORTH WESTERN ZONE

Since our last meeting we have been pleased to welcome to the Zone 3AGF, who is putting out a nice signal on 7 Mc. He has opened his DX account with a ZL and is a very keen c.w. man. He

QUEENSLAND

It would have pleased the writer immensely to have been able to report some spectacular achievements on the VKA Field Day held on the 18th June, but the weather ran true to form and obligingly turned on a cold damp day. 4VJ, 4TR and party operated from White's Hill near Brisbane, using battery power; 4PT was on a launch down the Bay and seemed to be doing rather well. As a result of skip conditions, the winners will probably comprise those who could operate on 7 Mc. as well as 14 and 28 Mc., as contacts were not too plentiful on the higher frequency bands.

At the general meeting held on Friday, 28th May, an election took place for the position of Federal Councillor, 4FN's term having expired. H. MacGregor (4ZU) was elected after the ballot papers had been examined. The voting: 4ZU, 44 votes; 4FN, 29 votes. Country Representative 4SN, airing the views of some country members, has since suggested that in future ballot papers should be signed by the Secretary, and if possible printed, instead of renewed.

Council spent some time in discussing this matter, and eventually reached a compromise that the ballot papers would in future be renewed, and would carry the initials of the Secretary. Most of the Council members are in the dark as to what all this is designed to achieve. The Secretary is of course overjoyed that at last someone has found him something to do, and wishes to make it known that for a small fee he will supply a stamped addressed envelope, lick the flap and drop it in the mail for you. Just in passing, of a total of 84 ballot papers sent to the country, less than 20 were returned, some of them from the extreme ends of the State, which disposes of the "no time" excuse. While we're having a grinch, the membership of the Queensland Division has reached the 200 mark but of these, 15 country and 21 city members are unfinancial. What about it blokes?

Congratulations this month go to VK4HR, who becomes the first VK4 to crack the DX Century Club. Nice work Tibby. In a demonstration of v.h.f. working and associated gear at the June general meeting 4HR will be the station to be worked from the Elizabeth Street Rooms, using both 50 and 144 Mc. gear. A "junk" sale in aid of the Food for Britain Appeal will also be staged and should make the evening quite interesting.

The library service looks as though it is not quite finished. As a result of the bright suggestion of 4WJ, it is now proposed to secure a deposit of 5/- from members wishing to use the library service. If a book should go astray in the post the sender (i.e. the fellow returning the book to the librarian) gets a second chance. If a second book goes astray he forfeits his 5/-. The number of books lost in the postal service is of course a small fraction of the total number which never return.

A very pleasing feature of the Student Section is the steady attendance at Morse Classes. About 20 members turn up regularly and apply themselves diligently to the task of code learning. A word of appreciation to associate member MacGregor for

his assistance in instruction. Speaking on behalf of the associate members at the May meeting, 4VJ said that he believed there were quite a few associate members who would welcome the opportunity to visit the shacks of active amateurs and see for themselves the way things were done as regards the building and operation of transmitters, etc. The idea of course has much to recommend it, and the important point for prospective visitors to remember is to notify their victim of the impending visit, as otherwise it may be impossible for them to succeed in penetrating the shack. Hay wire merchants please note!

Learning of the successful W.A. practice of staging short lecturettes at general meetings, the Council decided to stage two at the May meeting and 4KB and 4ZU were briefed to do their stuff. 4KB dealt with Push-Push Doubblers, as per QST February, 1938, a circuit by which 4HR skipped up to 288 Mc. without difficulty. 4ZU outlined his experience with R.F. Power Supplies for C.R.O.'s. Both talks were well received by members present, and the idea looks worthy of further trial. It is believed that the worthy President (4AW) may, if sufficiently provoked, be induced to give a short talk on Lecher Lines. Any more offers?

It is proposed to change the times of 4WI transmissions to fit in with the schedule drawn up by Federal Executive, the new time of the broadcast being 0930 hours, Sunday morning, to commence as from 1st July. The first station on each Sunday is to be VK3WLA, the Federal Station at the old 4WI time of 0900 hours.

The writer has found it difficult in the past to compile material for these notes, mainly due to pre-occupation on the higher frequencies. Having heard via the grape-vine that the low frequency men felt that they deserved better representation, one course only seems open—to let a more competent scribe take over. For a fellow who dabbles mainly on the frequencies below 28 Mc. the job should be a walk-over. At the June general meeting 4ZU will resign as Sub-Editor of "Amateur Radio" and nominations will be called for a new officer. Anyway you've had my notes in "A.R." since 1938, a change should be welcome. 73 OMs.

SOUTH AUSTRALIA

The monthly general meeting was held on 8th June to a very representative gathering. The lecturer for the evening was John Allan (5UL) and his subject was "Predictions." Among the many visitors present were J. Harris, A. R. Harris, P. C. Hutchins (5PH, from Willaston), Bob Parasiers (ex-5RP, ex-6FS), and A. L. Benjaminson (W2IZJ). The lecturer covered himself with glory, and once again proved the fact that providing he knows his subject, and does not try to blind his listeners with science, he cannot go wrong with any subject. I admit, in company with a good many more who attended, that we came along with some trepidation, prepared for the worst. How ill-founded were our fears, is disclosed when I say that John held the meeting in the hollow of his hand for more than seventy-five minutes by what was admitted by all to be one of the most interesting lectures heard for some time. Fortunately for me, and you, most of the lecture took place on the blackboard and the rest on the epidiroscope, therefore I cannot give a re-write. However you can take it from me that we learnt a lot about sporadic E, ionospheric refraction, various layers etc., and many other matters which up till then had been a deep and deadly secret.

The meeting closed at a record late hour, as an opportunity was taken to dispose by tender the radio gear of the late Mayo Richards (5WR). With 5BY as chief tender receiver, things went along at a record hot, and as condensers, etc., were offered for tender, the insults flew fast and furious. 5LL tendered for a monitor and received more opinions on his signal in five minutes, than he has had in the many years he has been on the air. Luke gave as good as he received and the meeting was almost convulsed at times. Dougal accepted a tender for an object on the end of the table, and it went for ten shillings before it was realised that it was 5LW that had been sold. That will teach you Ross, not to loiter near the apparatus for tender. 5Ps sat near the Treasurer and watched the money roll in, he did not tender for anything, but he managed to scrounge quite a lot. I understand he would have scrounged a lot more but "Doc" was watching him. Anyway a good time was had by all, and that's what a W.A. meeting should aim for; am I right?

Heard 5GD, 5GL and 5MD up on 14 Mc. the other night, what's wrong boys? No more fairy cakes, biscuits and tea, etc. 5BW was putting in a good signal from 4MP on 14 Mc. the other afternoon. I recognised the voice Bill, although you had me tricked for a while. You come in stronger to me from VK4 than from your usual QTH; wouldn't it. A real old-timer in 5DX is putting in an extra good signal to me these days. Welcome back Don, it's good to hear you again. A little splatter on the signal, but who am I to point the finger.



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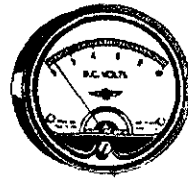
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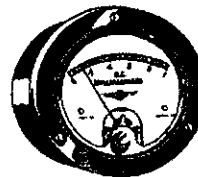
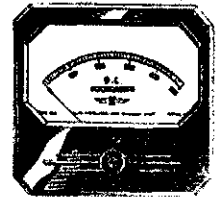
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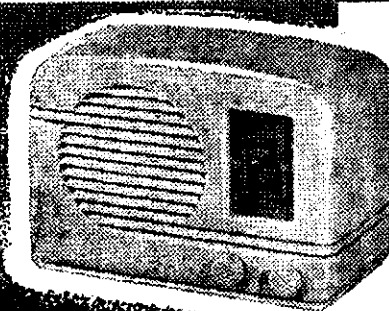
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Successful candidates in the recent A.C.C.P. examination held in April are J. Young, T. J. Davies, D. A. Crowley, N. L. McGowan, K. S. Harris and J. B. Watson. We extend our congratulations and sincerely hope that these Hams are members or prospective members.

I am in receipt of a letter of congratulation from 5JE thanking me for my publicity efforts in connection with the Glenelg Radio Club. I modestly thank him and hasten to remind him that I have heard no more of the Club, what about it Ted? Isn't it strange, no matter what I do for the W.I.A. the Divisional Secretary can't get around to sending me any sort of a letter, and believe me I have tried hard enough.

The other night a VK2 was parked in the middle of the c.w. end of 14 Mc. telling all and sundry about the mass of technical gear that adorned his shack. It made me feel so inferior as I gazed at the mediocre collection of junk facing me in my shack. I cheered up however when it occurred to me that at least I had a crystal for both phone and c.w. end of the band.

5WM was successful in a recent broadcast operator's examination. Nice, nice work Wick. Me oh my, I am getting old, I can remember when I used to kick him in the deaf and dumb because he was late in getting my lunch.

I take a dim view of these two well known Hams who were heard to say on the high end of 14 Mc. recently, "Be careful George, the menace is on the air and is sure to be listening to all we say." I'll say I did, and will I use it? Not much I won't.

5GD is just recovering from an attack of the vapours or something, because a visitor to his shack later told someone else that George's phone had definite signs of downward modulation. Do you think George went into much of a step-dance when it was repeated back to him. Now he knows what I felt like when the same person put that one over on me. You beat.

Heard 5AC working on 7 and 14 Mc. with c.w. using a Type 3 Mark 2. Gathered that he was operating inside a caravan which is now his shack. 5RR is in throes of re-building at the time of writing, push pull 807s I believe in the final. 5JP is reported as having gone to Angaston on 20th May. Was heard in Adelaide with a good signal from a portable FS6 loaned to him by 5CD. My latest information about 5RH is to the effect that

he is still on the sick list at home, hope that you are OK now Geoff.

5XO and 5ZR seem to have the secret of snaring the phone DX at the high end of 14 Mc. Even when the conditions are real poor these two experts scoop up anything which pops up. What's the secret of success fellows? 5OU is to transfer to VK3 for six months, he will be on the air from 3DT and 5YS occasionally. Hope we can contact sometimes Cliff.

5UX has obliged with a photograph of the gathering at Crystal Brook reported in last month's notes. A handsome looking gang if I may say so. Thanks Les. 5WA reckons that this QSL business is just too easy. He had not even been on the air when he received a QSL card from J2USA. They do not come that easy to me.

The phonetic alphabet is undoubtedly a great thing for communicating by means of phone signals, and the average Ham uses it with his own opinion as to the right phonetics to use. The many and varied types heard on the air are more often humorous than not. In fact Ross Kelly (5LW) always gave us a good laugh with his R—rattle-snake O—ordinary-snake S—snake S—snake. Now that is funny as well as clever, but when a VK5 Ham is heard to give his name as P—putrid H—horrible I—illiterate L—lousy, then he is neither being funny nor humorous, but is only bringing this grand old hobby of ours into disrepute. Don't forget gang, lots of people hear us on the air who are not as tolerant as our Advisory Committee.

5LA is a newcomer to the air, but is making his presence felt already on 14 Mc. Has run up some nice DX and is only using low power too. Is about to join the W.I.A. if my persuasion is successful. Yes, he works on the same shift as I do. Six of us all told, maybe I should have said all six of us were on the pay sheet and left it at that. Listen gang, don't forget that little part of regulation 134 about giving your call sign every five minutes, one or two of the boys have been blistered for that lately.

Regret to announce that one of my best spies in 5LG stepped on a piece of his beam where there wasn't any wood. Leith made a perfect five point landing, but has developed a complex against beams of any description. Understand that the descriptive flow of sweet words that issued from him would have put a professor of languages (no not you 5LW, sit down) to shame. 5BQ was looking for my blood at the last general meeting because

of a misprint in last May's magazine. I hasten to correct it, and say that it was meant for 5FQ, and am prepared to take my oath that Bill has never been near Somerton. OK Mrs. 5BQ?

Joe McAlister did a wonderful efficient job of "putting me in" with the office staff at my place of toil recently. When I arrived to take over my shift, the sweet young thing on the switchboard said "there is a letter in the rack for you from someone in the W.I.A." I thanked her in my best wolfy manner and was amazed to have her say "Mr. Parsons, do your friends call you Pansy?" I shook this insinuation off as best I could, but I notice that as I walk around the office these days that a decided coldness has developed among the female staff. Marmaduke, who works at the hair-dresser's on the floor beneath, shows a decided tendency to linger in my presence in the lift, so don't suppose I should worry. Thank you Joe, I shall endeavour to reciprocate, both to you and Mr. X whom I suspect was really behind it.

Sorry to hear that Joe Kilgurriff is on the sick list, but hope by now that he is on the road to recovery. 5FL has consented to act as stand-in for the traffic schedules, pending Joe's return. The thanks of the VK5 Division are due to the VK5 Disposal Committee for the opportunity of participating in the recent handout.

My spies tell me that there has arisen a new method of DX hunting. First get a fellow Ham with a good beam, have him work the DX and then call you into the QSO. Easy isn't it? Believe 5JK is a sponsor to this new method. Say Jim, when they call you in, what about calling me in too, I have no sense of shame.

When you are driving in a taxi sometime and you say to the driver "what does the meter say Bud?" don't be surprised if he should say "well, GRM is bad on 14 Mc. tonight." If this happens it will probably be 5BQ. How's business Bill.

My, my, to what depths will some Hams sink in an endeavour to secure some new equipment. 5XU gathered up the new Philoscope at the monthly meeting and carted it away with some junk he had bought that night. Believe 5AW nearly had hysterics when he saw Gordon trying to shove the Philoscope up his jumper. Play the game you cad!!

The proposed field day, possibly to be held at Clare around September suggested by the country gang through their representative 5RJ, was well received at the general meeting, and more should be heard of it.

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WESTERN AUSTRALIA

The June meeting was held on the 14th. There were 54 present, which was a good attendance considering the wet weather. A cordial welcome was extended to 6MO—Allen from Watherloo. We had also hoped to meet G2RRM Mobile Marine, but his ship did not berth on schedule.

New members admitted were 6LE L. Blackman, 6XF F. Whitfield, GCR C. Hayes, 6HW H. Willis, and A. D. Hawksworth, L. H. Roegar, D. Amnerstey with their call signs on the way. A hearty welcome is extended to these new members and we hope to contact the country chaps as soon as they get going.

The possibility of obtaining some more disposals equipment from a source known to 6MU seems very remote according to latest correspondence. Nevertheless there is some on the way from VK4 and when it arrives the boys will have some crystals for sale.

A telegram from Federal Executive re R.A.A.F. W.R. was subject to debate and a query is being returned to Federal Executive for clarification.

Some anxiety was expressed by 6RU as to the despatch of inward QSL cards to VK6 from VK3. Apparently a few have been going astray and 6RI is going to contact 3RJ about the matter.

6WH made a request that the 7 Mc. channel be kept clear for the 6WI broadcasts on 2 p.m. Saturdays and 9.30 a.m. Sundays. He heard a few of us on last Sunday.

After the discussion on general business, the last names of City members were taken to be in the ballot for the disposals equipment from VK4. Then followed the regular feature of a chin-wag and rag-chew session.

As the QRM died down 6JS presented to the W.I.A. W.A. Division a BC312 receiver (modified for a.c. operation) for use on Station VK6W, on behalf of the local firm of Atkins (W.A.) Ltd. 6WH accepted the receiver on behalf of the W.I.A. and it was moved that an official letter of appreciation be forwarded to Atkins, thanking them for this very useful piece of equipment. 6MY followed up with a short chat on the features of this receiver.

A very fine lecture was demonstrated and delivered by 6RK. Roger showed us on his c.r.o. input and output waveforms of an audio signal through an amplifier. Distortion due to over-driving was clearly seen. The signal from 6AQ's b.f.o. (audio) was analysed. We liked the view of the mountain range that followed, and Wally's only consolation was that it sounded good anyway! A most enjoyable evening was closed at 10.30 p.m.

We believe 6QH is going again after a long silence. His rig is on 144 Mc. band and is well in on the Perth hook-up. 6KE is pleased with the results from his new two element beam on 144 Mc. Keith wonders why he didn't put it up ages ago. ZS6OR contacted VK6HW the other evening and we are hoping to hear him more regularly now that the ice is broken. 6RO's new rig is nearing completion and he will soon be breaking through the QRM on 7, 14 and 28 Mc. We'll be pleased to hear you Bert.

6GM has not been so active these last few months, but he has plenty of time still for W.I.A. activities. 6OR is having a spot of receiver trouble. As soon as he clears out this bug, the rig will be all ready to go. 6RG is another chap we haven't heard lately; his shack must be a cold place this winter. What's cooking Ross? 6GS has been putting Harvey on the air. Blake has a rig on 7 and 50 Mc. and works the Perth boys regularly on both bands.

Haven't heard 6RK lately but am sure that he is about somewhere, just wherever his AT5 will take him. 6RI is talking of a new rig. Ralph expects to be on again any day now. 6HS has his receiver in many pieces and is in the throes of a most modern design. He will be all ready for the summer DX. 6FR is also building up a new receiver so we haven't heard him on lately, but we are looking forward to a "S9 report on the meter" as soon as he is going again.

6WM is a real c.w. merchant and has been working some nice DX on 7 and 1 Mc. How many countries now Bill? Heard 6CF putting out a f.b. signal on 28 Mc. phone and c.w. a few days ago. Keep it going OM and how about a QSO one of these times? 6PJ is building up a 5-inch c.r.o. Peter finds it warmer in the kitchen these wintry nights and is (like most others) looking forward to the summer DX again. Haven't heard 6BR in his usual place on 28 Mc. lately. What's brewing up there Bob? Is it a new antenna?

6GB is one of our 50 Mc. stalwarts who occasionally comes up to 7 Mc. when cross-band QSOs with the country lads are going. What's your best 50 Mc. DX Jack? 6DJ still has the same old rig running. Heard him on at 2 o'clock the other morning. Having b.c.l. trouble, or couldn't you sleep that night? We were very pleased to hear 6AS back on 7 Mc. The old rig was silent during his stay in Carnarvon. Alex found cobwebs and

mine had to be removed before closing the big switch.

Heard 6WD keeping Wyalkatchem on the map with a nice 7 Mc. c.w. signal. We expect to hear some phone from him shortly. 6BG is preparing his rig for 7 Mc. band. He has been running 14 Mc. phone but doesn't work as much DX as he did on c.w. there. 6FW gave us a pleasant surprise on 28 Mc. the other day, by turning on phone and working plenty outside VK.

6GC has been bitten by the building bug. We hope to hear Bob's rig working before long now. Don't know whether it is going to be 10 or 100 watts, but it's a 7 foot rack and panel job. 6JN should be a going concern any day now from Kalamunda. John had some oscillator trouble for a while, but has cleaned that up in fine style. 6MB has worked PY on 28 Mc. phone and is very pleased with this effort because his QTH is not the best for DX contacts. 6NL has been experimenting with folded antenna arrays and has been getting encouraging reports from all round the globe. What has the centre impedance gone up to now Val?

DX OF THE MONTH BY VK6RU

The past month of May has been quite a disappointment in the DX field, both the 14 and 28 Mc. bands opening very irregularly. We have been fortunate in some respects, as although conditions have been bad, the DX man's interest has waned somewhat, thereby causing less QRM and competition to the everwatchful individual who is prepared to just sit and wait for the band to open. A number of the rare birds have been landed, no doubt due to the above happening.

Usually the winter months show a decided falling off in band conditions, and after the lucrative summer months with the keen interest shown at that time, one is almost ready to give the game away.

28 Mc. Phone, Europe.—On the few occasions that this Continent has shown any promise some good QSOs have resulted, but unfortunately, the band has not stayed open very long. Times have been irregular; the earliest a European has been heard and worked was 0500 GMT and the latest 1200 GMT. New Zealanders have been heard working Os across the Pacific at Midnight GMT so this band has sure been crazy. The Europeans worked from here were ZB1AD, 60ZH, E13J, G6HL, G2DX, SM3ZF, OZ7TS, G88Y, G2HW, GM3XB, H0N and F5QN.

Asia.—Not many Asiatic stations appear on 28 Mc. these days apart from the Yanks in and around Japan who may be heard almost any and every morning. A few boys from Pakistan seem pretty regular on this band as AP2F, AP2R, and AP4B have been worked a number of times. The only other QSOs with this area were C1CS, H11AQ and H11BB.

Africa.—With winter conditions prevailing this Continent has been most reliable and no trouble at all is experienced in making contact after contact. The times are 1230 to 2000 W.A.S.T.

The African QSOs were MD5AK, ST2GE, ZS5Q, ZS1CG, ZS6EB, MD4JG, VQ5PBD, ZS2CI, M13ZJ, ZS1KH, ZS6LF, VQ8AE, ZS6JL, VQ4RHP, ZE2JG, OQ5BR, ZS3F and CX8BA (I've been chasing this latter guy for just two years on 14 Mc. and end up getting him back to a CQ on 28 Mc.).

North America.—We are still being worked during our mornings but reports are not as good as they were a few months back. One interesting QSO was with W5VY who was worked at 1430 our time one Saturday afternoon and this corresponded to 0630 his time, the same morning. W6s, 7s and 8s seem to provide the most QSOs from this Continent. On two occasions the band opened the long way around via South Africa from 1800-1900 hours. W9H0F and W8SXC were both worked this way.

TASMANIA

Here we are once more with a summary of the doings in this State over the past month. The June meeting was well attended and after the general business was disposed of, a discussion was held on the whys and wherefores of monitors and the like, and many ideas were given members on the subject by J. Brown (7BJ) and R. Fulton (7AF). It is intended to hold a series of these open discussion nights and they should prove popular.

Our membership in VK7 is increasing rapidly and the hundred mark is in sight and should be reached easily before the end of the year.

Sunday morning still seems to be the popular time for local QSOs on the 7 Mc. band. One can hear just about every active Ham in Tasmania discussing a wide range of topics of general interest. 7EJ has just re-built, and gave me a call the other night. By the way Ted, what was smoking? 7SJ is to be congratulated on the arrival of a junior op. Nice work Syd. Heard 7GR one night after a long silence. You are still S9 plus at my QTH George. Lyn Brown, one of our associates

who recently acquired full membership status, is to be heard under the call of 7OL on phone. 7BJ has been crystal grinding in order to get stability in his double conversion receiver. Heard 7AL recently on phone, we don't seem to hear much of you Tom. What's the trouble, b.c.l.?

The A.O.C.P. class is coming along nicely and it looks as though there will be a few more call signs on the air next year. I know my office gets a thrashing these days during lunch hour with Morse sessions.

There seems to be a little confusion about the dates of the 7WI broadcasts. They are at 9.30 a.m. on the second and fourth Sundays of each month, so make an effort to keep the air clear in VK7 at those times. The frequency is 7174 for the present, but I guess it will have to be changed sooner or later to a lower frequency.

Worked 9YY (ex-7YY) a week or two ago from his Wewak QTH. He was putting in a nice signal too.

NORTHERN ZONE

If everything goes according to plan the Northern Zone will have been organised by the time these notes are read.

Activity has been very limited this month, in fact the bands have been so quiet that one evening after tea 7BQ, being unable to raise a QSO, decided to call on 7GD; only to find 7GD had gone to bed. Members knowing 7GD will realise the shock 7BQ must have received. In fact Len was so upset that he missed the chance of a lifetime and we still don't know whether 7GD sleeps with his pipe in his mouth or not.

The biggest job in the zone during the month was the raising of 7LZ's 28 Mc. beam. This took the combined efforts of 7GD, 7BQ, 7RK, 7LZ and Pere Crawford. Everything went according to plan, however as yet it is too early to say just how well the beam is working.

The 144 Mc. boys are having their share of fun and worries. At present 7DB and 7BQ are both having trouble getting their converters going. 7BQ has also just completed a new m.o.p.a. on this band.

7DS is at present on holidays and took time off a few nights back to visit 7DB, 3ANL/VK7 and 7LZ. Hugh complains that since he dressed his rig up it won't work properly on 14 Mc.

7AB and 7XL also visited Launceston during the June long week-end. Both Doug and George are still keeping a careful watch on 50 Mc.

As usual 14 Mc. yielded the best DX. However the only stations contacted that were worth recording were ZM6AF, OZ7CC, ZK1AJ, NY4ZQ, H11BE, V19E, WOOZW/K56, KP1AE, CO2PW, F40HE, C7OK, VO1B and VR3A. Unfortunately EA3RH, VR2AZ/VR1 and W60DD/YS got away. These stations were all contacted during the evenings. We unfortunately have no knowledge of early morning DX as we have been unable to find anyone willing to give up their sleep in the interests of radio.

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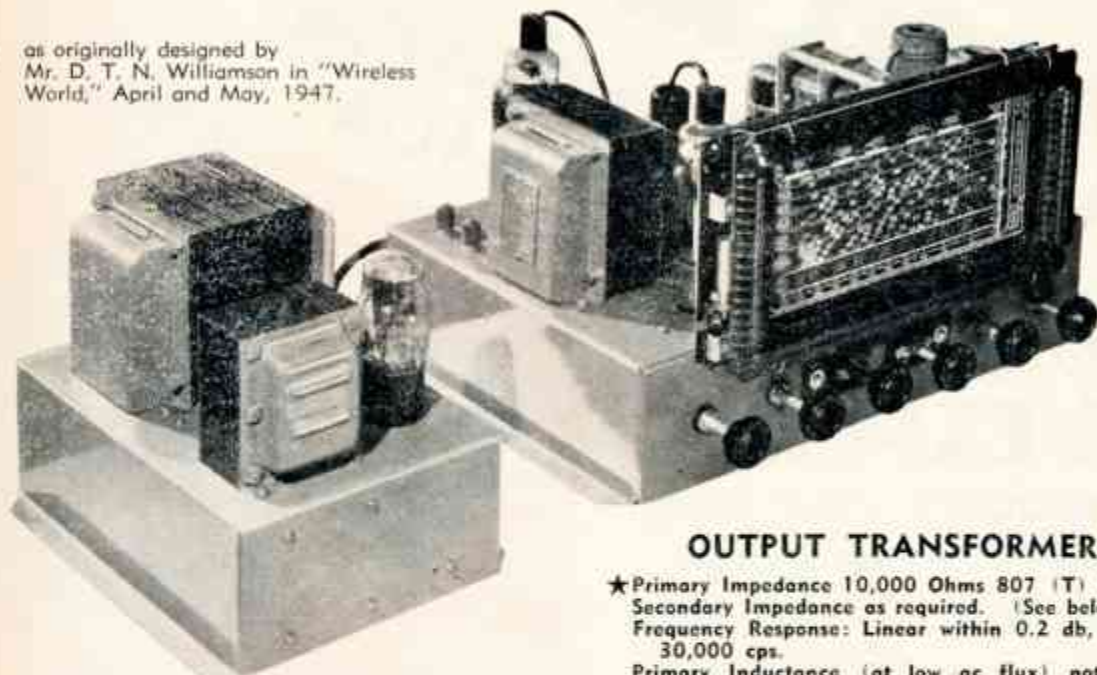
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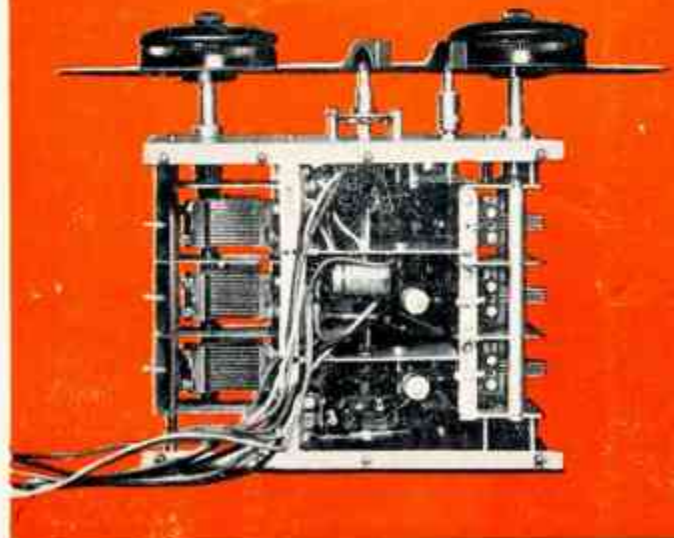
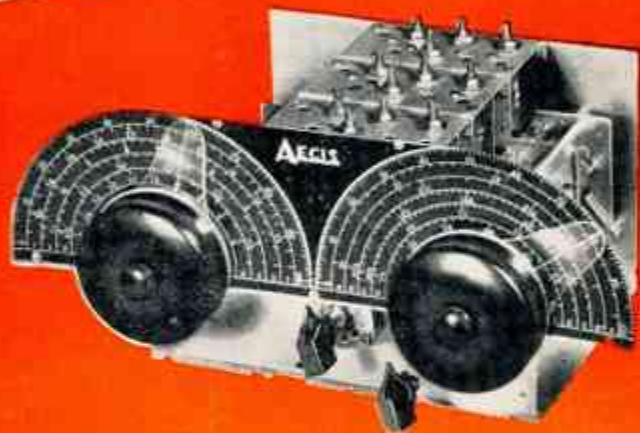
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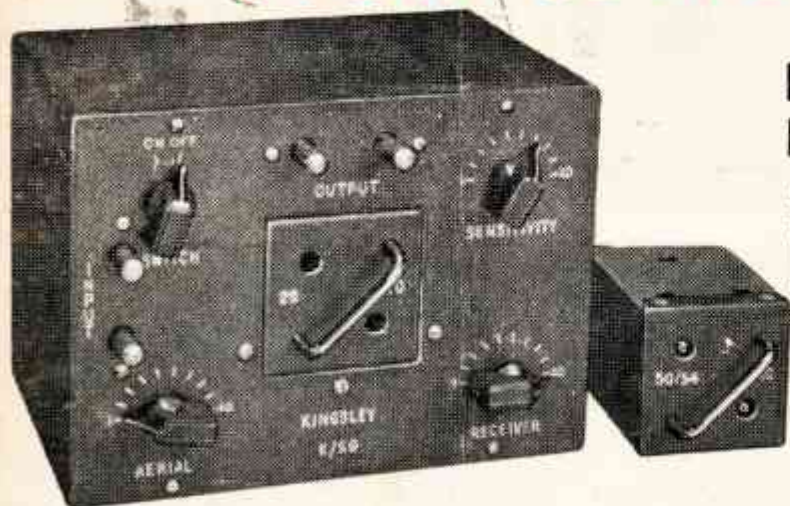


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EDITORIAL



The history of the communication of information from one person to another has often been reviewed and the various stages from smoke signal to the radio flash have filled us with wonderment and admiration for the ingenuity of man. The smoke signal was purely an amateur affair and coded puffs made communication an easy accomplishment within visual range. This primitive system has long been abandoned progressively giving way to telegraphy, telephony, and finally radio communication. Yes, the countryman has long since abandoned the smoke puff in favour of the Type 3 Mark 2 now so capably handled by the licenced Amateur in the service of his fellow men in times of difficulty.

From our knowledge of this world there will never be a surfeit of reliable information, and at no time is this more necessary

than when human lives are in danger. Elsewhere in this issue is the record of a splendid Amateur achievement concerned with the speedy location of a child lost in the bush, and the enterprise of the Amateur in times of emergency as evidenced in the recent disastrous floods on the North Coast of New South Wales.

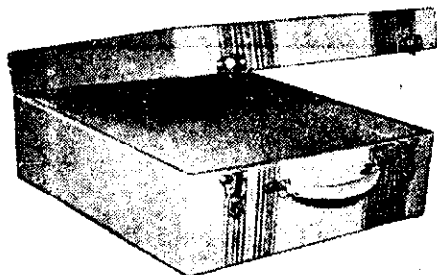
These contingencies will occur countless times in the future involving young and old, and there will be many opportunities awaiting the Amateur for fine service. It is our sincere hope that our allocation of emergency network frequencies will long remain as our avenue for the humane assistance we so gladly offer. This is a controlled and skilled assistance that never sleeps, and merits the warm appreciation it is now receiving in official quarters.

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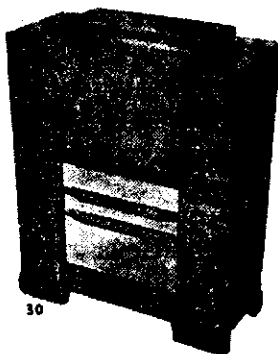
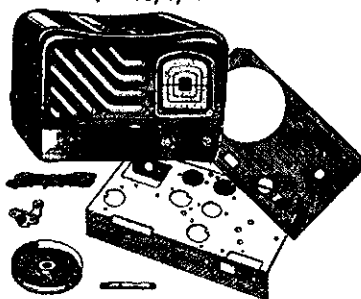
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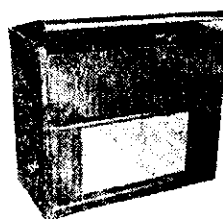


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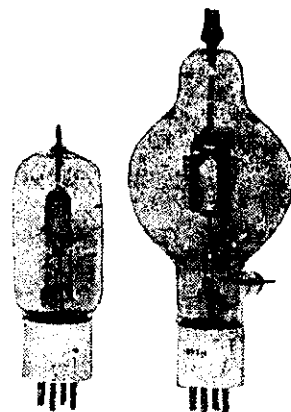
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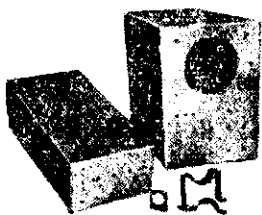
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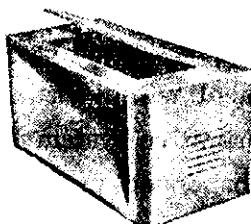
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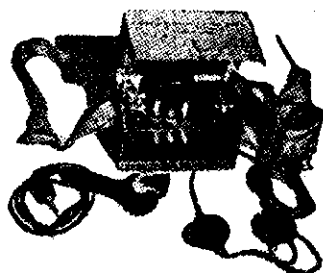
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100 WATTS FROM CLASS B 807s

It is one of the duties of the Technical Editor to scan all overseas publications coming to the W.I.A., with the object of reproducing any technical matter which would be of interest to readers of "Amateur Radio."

With this view in mind a new circuit for using our popular 807s in Class B is presented. The theoretical details of the circuit are reprinted from R.C.A. "Ham Tips," and a practical Speech Amplifier and Modulator, using the new circuit, from the English "Short Wave" magazine, February, 1948.

During the intervening years since its development by R.C.A. back in 1936, the 807 has become the Amateurs' number one favourite r.f. transmitting tube.

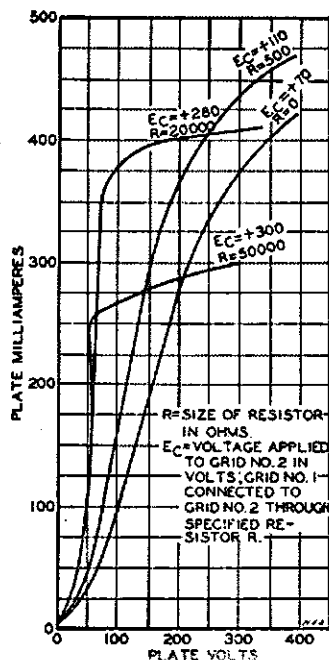


Fig. 1.—Effect of the resistor in the No. 1 grid circuit upon E_p versus I_p characteristics.

However, comparatively little use has been made of its excellent class AB₂ characteristics in a.f. modulator service, perhaps because of the difficulties encountered in providing the required regulation of control-grid and screen-grid voltages.

In order to avoid these difficulties, the possibility of using this tube as a zero-bias triode in Class B audio service was intriguing. Its low price, its small size, and its ability to deliver a great deal of power at low plate voltage provided the impetus for a series of experiments.

The first idea was to tie the control grid and the screen grid together in a manner similar to the way the old type 46 was operated in zero-bias Class B service. This produced a low-perveance triode with a plate family of curves that looked like the receding hair line of the Java Ape Man. It would be no brain wave to operate on such a plate family either, for distortion is high and the efficiency low.

Another idea was to ground the control grids and put the driving signal on the screen grids at zero bias. The arrangement produced a good plate family, but required excessive driving voltage for satisfactory power output. Several other schemes were tested with varying results—and then it happened!

One hundred and twenty watts of audio—with less than 6 watts of driving power—at only 750 plate volts. What's more, it's very simple. Just connect the cathodes to ground, put the driver transformer between the screen grids, and ground the centre tap. Then, connect the control grid of each tube to its screen grid through a 20,000 ohm resistor. That's all there is to it.

During the development of this circuit, plate families were taken with various values of resistance between the No. 2 grid and the No. 1 grid. The series of curves shown in Fig. 1 illustrate the effect of the resistance in the No. 1 grid circuit upon the shape of the diode line. The driving voltage designated E_c is that which is applied direct-

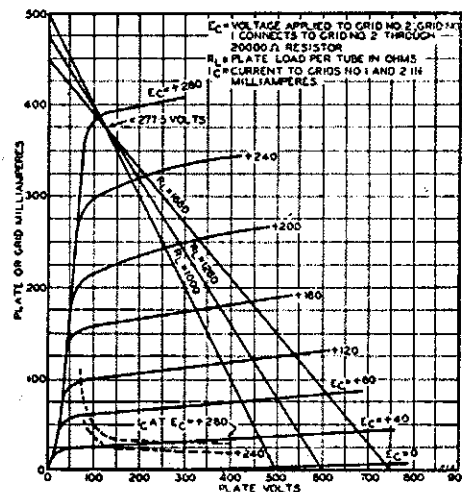


Fig. 2.—The 807 plate family with a 20,000 ohm resistor in the No. 1 grid circuit.

ly to the No. 2 grid. Low values of resistance give poor knees, but as the resistance is increased, the knees improve, until the optimum condition is reached at about 20,000 ohms.

With this value, it can be seen from Fig. 2 that a satisfactory plate family is produced. Grid current curves for the new zero bias connection are shown as dotted lines, and plate load lines are shown for three operating voltages. With a 750 volt supply, a plate-to-plate load of 6,600 ohms, and a driving source giving 555 peak volts grid-to-grid, 120 watts of audio are available. The power to drive the grids is greater than that needed for Class AB₂, but this is no hardship because a push-pull triode driver will easily furnish the 5.3 watts needed. Fig. 3 shows the circuit for driver and output stages used in the tests.

The only important technical difference between zero bias 807s and regular zero bias Class B triodes is in the values of positive grid impedance. Whereas

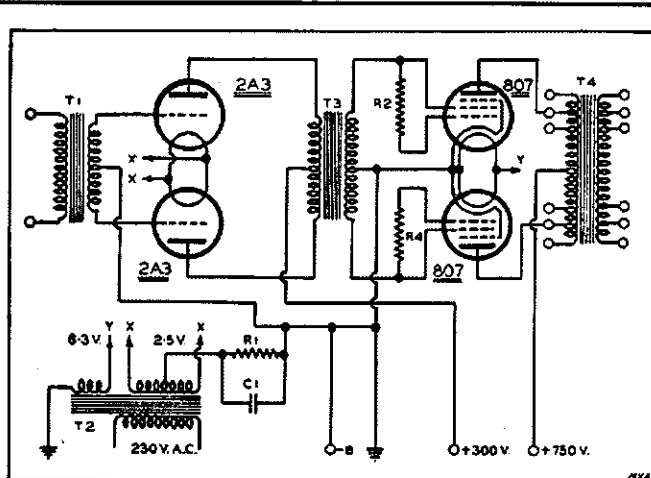
OPERATING DATA FOR 807s IN CLASS B

Plate Supply Voltage	750	600	500 volts
Peak A.F. Grid-to-Grid Voltage	555	555	555 volts
Grid Driving Power	5.3	5.3	5.3 watts
Grid Imped. per Valve	7100	7100	7100 ohms
Grid Bias	Nil	Nil	Nil
Plate-to-Plate Load	6650	5050	4000 ohms
Anode Current (2 valves)			
No Signal	12	10	8 Ma.
Max. Signal	240	240	240 Ma.
Audio Output (approx.)	120	90	72 watts

Fig. 3 (at the right)

T1—Input audio transformer.
T2—Filament transformer.
T3—Driver transformer.

T4—Modulation transformer.
R1—780 ohms, 10 watts, wire wound.
R2, R4—20,000 ohms, 1 watt, carbon.
C1—16 or 20 uF. 100 volt, electrolytic.



ratio being the square root of the ratio of driver load impedance to the grid impedance of the 807s. With the Class A 6L6 used as shown, with cathode bias, 300 volts on the screen, requiring a load of 4,500 ohms to realise the full output of 6.5 watts. This latter figure is taken from the published characteristics, and does not, of course, take into account transformer and other losses. In choosing a driver valve or valves these losses should be borne in mind, and it is as well to budget for a driver stage which will deliver 15 or 20 per cent. more audio than is theoretically required for any given output.

A driver transformer is thus required which will match a 4,500 ohm impedance into 14,000 ohms. The impedance ratio of the transformer will therefore have to be 1 : 3.2, making the required turns ratio 1 : 1.8, i.e. the square root of the impedance ratio. A normal Class B transformer will serve the purpose with primary and secondary reversed, assuming the transformer has a centre tapped primary.

Such transformers seem difficult to come by, as the usual driver transformer for Class B and AB₂ amplifiers, although having a step-down from primary to secondary, invariably has an untapped primary. If any difficulty is experienced in obtaining a transformer of the correct step-up ratio, two 5 or 6 watt universal output transformers offer an alternative arrangement; the low impedance winding of one, carrying the output of the driver valve, being connected to the low impedance winding

on the other transformer, the secondary of which is connected between the 807 screens.

By experimenting with the adjustable primary taps, it will thus be possible to arrive at a correct match between the driver and modulator.

The writer was fortunate to obtain a 1 : 2 step-up transformer from a piece of ex-service equipment. It originally functioned as a modulation transformer matching a pair of 12A6s into an 832, and worked perfectly as a driver transformer when using the 6L6 driver, despite the small discrepancy ratio. (Sounds like a 522 modulation transformer—Ed.)

As a matter of interest the writer has driven the 807s in Class B using a 6F6 driver, with 290 volts on the plate, preceded by a 6J7 and 6C5, and a crystal microphone. With this set-up an 80 watt carrier was modulated 100 per cent. with the audio gain one-third advanced. The driver transformer used to match the 6F6 into the 807 grids was a 1 : 1.4 step-up. The anode voltage on the modulator was 700 volts, the same transformer being used to supply h.t. to the Class C r.f. stage. Conditions of operation in this case were not at all favourable as the regulation of the power supply was none too good, and yet reports received indicated that the speech quality was really excellent, there being no trace of distortion.

One or two stations have been heard on the air complaining that they have been unable to obtain the expected output from the Class B 807s, but in

every case it has been evident that the wrong conditions were the cause of the failure.

Once the simple principles of matching the driver stage to the modulator grids have been grasped, and the correct step-up ratio of the driver transformer has been obtained, the audio output is limited only by the 807 plate voltage and the amount of voltage swing obtainable at the grids.

If the modulator has been converted from the usual Class AB₂ 807 circuit it should be borne in mind that whilst the required driving power for AB₂ operation is 0.2 watts, at least 5.3 watts audio will be required to obtain the full audio output from the 807s in Class B.

OPERATING DATA WITH LOWER PLATE VOLTAGES

Perhaps the constructor has a 500 or 600 volt transformer which he would prefer to use with the 807 modulator. A power supply incorporating such a transformer will enable the 807s to deliver an output of from 70 to 90 watts.

A set of operating conditions is therefore appended for plate voltages of 500 and 600. As the average plate current in each case works out at about 240 Ma., the secondaries should be rated for at least 300 Ma. working current, otherwise, apart from the risk of a burnt out secondary, the voltage regulation will be inadequate to cope with the large plate current swing.

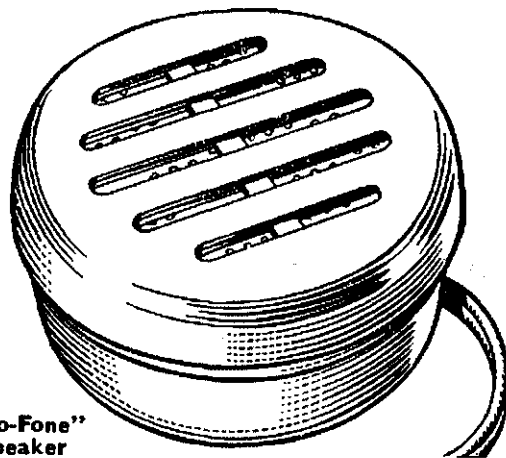
It should be noted that for each set of operating conditions, grid driver requirements remain the same, in order that maximum audio output may be obtained for each plate voltage figure.

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HAMS TO THE RESCUE !

RADIO AMATEURS HELP SEARCH FOR BABY

Four Amateur Radio Operators in Gippsland and North Essendon (Vic.) guided a search party of nearly 500 farmers and police in their hunt for a baby boy who was lost all night in the bush, several miles from Maffra on 9th July.

The baby was Peter Daly, aged 2, who strayed from a truck while his father was cutting timber in rugged country cut by gorges sometimes 200 feet deep.

Early on Saturday morning the Maffra police, who had been hampered by lack of communication between the search parties, enlisted the aid of the W.I.A. Emergency Network—Eastern Division.

Keith Scott (VK3SS), Jim Long (VK3AJL), and Ossie Kellas (VK3AHK) arranged a net as follows: 3AHK base station at Tinamba with landline communication with Maffra Police Station, 3SS and 3AJL portable. This arrangement rendered communications between the two search parties and Maffra Police via 3AHK.

With this efficient set-up the Police in the bush search party soon realised that more speedy communications with Russell Street (D24) were necessary and would be obtained if a station in Melbourne could be contacted to work direct with 3SS.

3AHK put out a "CQ Melbourne Urgent" call and Mr. Ellis Pottage (VK3JP) made contact and passed on a message to Reg Busch (VK3LS) to take the Melbourne end on the Emergency Frequency of 6984 Kc.

AMATEURS AGAIN ASSIST IN NORTH COAST FLOODS

Several of the North Coast (N.S.W.) Amateurs did some fine emergency work during the devastating floods that swept the area during mid-June. With little warning Amateurs found themselves in a position where they could serve the community by supplying emergency communication.

An outstanding effort was that of Norm Carpenter (VK2RK), of Murwillumbah. On 14th June, while the cyclone was at its height, it appeared as if the local broadcast station would lose its aerial system or the power system would fail. In view of this happening, VK2RK arranged announcements to be made over the broadcast station to the effect that VK2RK would broadcast on 7 Mc. in the event of any failure. The inevitable happened, the power failed and VK2RK opened up on 7010 Kc. and for four hours broadcast flood bulletins supplied by the local flood committee. These were made at 10 minute intervals.

The transmitter was run from a battery p.a. system used as a modulator, a local radio dealer coming to 2RK's assistance for the latter. Congratulations to Norm on a job well done.

Down in Maclean VK2OE was requested stand-by by the local postmaster in case of emergency, which fortunately did not eventuate.

With this arrangement messages between the field search parties and D24 were handled in a matter of seconds until the search was successfully concluded.

It might be pointed out that D24 readily accepted the communication facilities and passed their regards for the assistance given by Amateur Radio.

For those interested in portable work in general, and emergency communications in particular, a description of the equipment used is as follows:—

VK3SS.—Portable with search party No. 1 used a Type 3 Mark 2 Transceiver, cathode modulated with 6V6 audio amplifier; antenna a single wire attached to nearby tree. This station was situated in dense bush.

VK3AJL.—Base station using Type 3 Mark 2, cathode modulated; later transferred to field party No. 2 using a 108 Transceiver used as a Walkie Talkie with attached whip antenna.

VK3AHK.—Base station used a Type 3 Mark 2, cathode modulated. Single wire antenna.

VK3LS.—Home station, 6V6 crystal oscillator, 807 p.a., plate modulated with p.p. 6V6s, antenna half-wave horizontal.

VK2GI, at Woodford Leigh on the Clarence, was without power for days. The diode monitor was converted to receive the local broadcast station and the flood warnings.

On the lighter side—2LH found motor cars and refrigerators on his property. 2NY had the doubtful honor of seeing his QSL cards floating in five feet of water in his shack. 2XO's gear was rapidly stored in the garage roof.

Actual damage to equipment was small and from all accounts radio gear had a high priority in removals—sometimes ahead of furniture.

All the North Coast gang stood by for hours to see if they could be of any assistance.

Peter Alexander (VK2PA), North Coast Zone Officer, who supplied the above news, also reports that a very strong move is under way to organise a battery operated net to come into operation in any future emergencies.

MELBOURNE EMERGENCY NETWORK

It is proposed to develop a Melbourne Emergency Network which will be capable of rendering assistance within a radius of approximately 50 miles of Melbourne.

If you are interested write immediately to the Divisional Organiser of Emergency Communications, Law Court Chambers, 191 Queen Street, Melbourne, giving the following particulars:—

Name and address, call sign, phone (if any), car (if any), home station equipment, portable equipment (if any), business phone, availability during working periods for extreme emergency.

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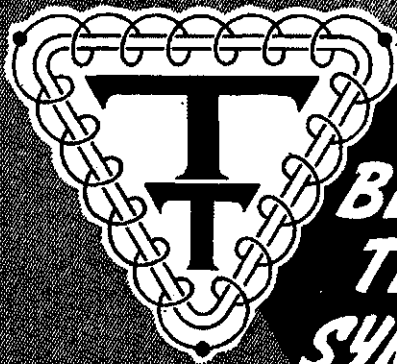
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QUESTIONS AND ANSWERS

Our thanks to all who have sent in answers, or who have located people with the answers. You are doing a good job; thanks a lot. In common with other magazine correspondence, the address of this column is now "Q. and A.," "Amateur Radio," Law Court Chambers, 191 Queen Street, Melbourne, C.1.

A.1—As you saw last month, VK3ASG came good just as we were going to press. Since then he has sent in more information as follows.

"Considering the purpose for which this line was originally designed, the velocity figures compare very favourably with some cables with solid and beaded insulation especially designed for r.f. work. Laboratory tests have shown Nyllex flex to work well as feeder—up to 50 Mc. I would be interested to hear the findings of anyone who has conducted tests with Nyllex on higher frequencies. Many are using Nyllex to feed 144 Mc. systems with success, including VKs 3HE, 3EL, 3TO and 3TC.

"Measured at 45 Mc. the velocity factors are:—

Colour	Velocity Factor
Blue	0.7
Black	0.69
Red	0.76
Brown	0.71
White	0.696
Yellow	0.658
Clear	0.7

"At this juncture I would like to extend my sincere thanks to Mr. T. L. Martin, of Moulded Products Ltd., for his interest in having this information collated. Mr. Martin advises, in response to enquiries, that the sole distributors of Nyllex Cables are A.P.I. Cables and Insulation Pty. Ltd., Melbourne."

A.3.—This seems to have the boys tricked. 3VZ, the Technical Editor, politely declined to comment. When the question was raised in other quarters the standard answer was "It all depends;" but as to what it all depends on was rather obscured in the resulting argument.

So your scribe suggests that the quickest way to find out is to measure the impedance.

A TECHNICAL TIDBIT

That new final of yours has just been completed, and you anxiously throw the high voltage on, and dip the final plate current to resonance. Then you couple in the antenna, again dip to minimum plate current, and finally make sure that you have maximum radiation from the antenna by checking with a neon bulb on the antenna, by again retuning the final plate condenser. In this simple operation you have passed over several points which will inform you as to how the final and the feeder system is working.

When final plate current is dipped to a minimum value with no load on the

The simplest way of doing same would seem to be to set the 807 going with normal plate voltage, and drive, then to measure the screen current as the screen voltage is varied, say in 25 volt steps from the initial 150 volts. This should be taken far enough to include the full voltage swing of the screen on full modulation. If the screen current is graphed against screen voltage, then the tangent to the graph at 150 v. is the a.c. screen impedance. Also it will be obvious as to how constant this impedance is over the voltage swing. This process is really the same as measuring the plate resistance of a valve except the screen resistance is wanted here.

A.4.—From VK4FM, VK3FW, VK2CS and C. B. Fisher we have this information on the 280/80. It is really four voltage regulators in one, having four anodes and a common cathode.

Socket: 5-pin English.

Other designations: VS69 or CV1069.

Connections:

Pin	Anode	Voltage	Regulat'n
1	Anode 4	+282	5%
2	Cathode	0	
3	Anode 2	+143	10%
4	Anode 3	+205	7%
5	Anode 1	+73	15%

Each anode has a maximum current rating of 40 Ma. and the cathode current, which is the sum of all the anode currents, must not be greater than 80 Ma. Unused anodes should not be left floating but connected by 100,000 ohm resistors either to earth or to B+, the anodes of higher voltage than the ones used being taken to B+ and those of lower voltage to earth. The striking voltage is 363 volts.

A similar tube is the 280/40 which has the same socket connections and operating voltage, but each maximum anode current is 30 Ma. and maximum cathode current is 60 Ma.

NEW QUESTION

Q.5.—A lot of disposals v.h.f. gear is described as operating on such and such a band. Can anyone supply the frequencies corresponding to G., I., L. and P. bands? Also, for interest, any other band frequencies you know.

tank coil, make a mental note of the final tank condenser setting. Now couple the antenna to the final tank coil and again tune the tank condenser for minimum plate current. If the condenser is not on the same dial setting as before, you definitely know that your feeder system has standing waves on it, that is, the line is not flat. On the other hand, if the loaded minimum plate current occurs at the same condenser setting as the unloaded minimum plate current you may or may not have standing waves on the feeder system. This is important. In other words, if you do have a flat line the two condenser

settings will be the same, but the fact that they are the same does not necessarily imply that the line is flat. It will be necessary to check the line by other methods to guarantee the absence of standing waves.

The next thing to examine is how the condenser setting changes when going from minimum loaded plate current to maximum power output. That is, check the condenser setting when you have minimum plate current and the final is loaded. Next, check the antenna output by means of a field-strength meter and tune the plate condenser until the final is putting out the maximum power as indicated by the field-strength meter. If these points coincide, the final tank circuit has a proper loaded Q. However, if these two tests do not give the same condenser setting the Q is not right in the final tank circuit. To correct this add more C across the final coil.

Maximum power output and minimum loaded plate current depend upon the power factor and the impedance in the final tank circuit. Zero power factor and maximum impedance occur together only in high Q circuits (a Q of 12-15). If you have too low a Q you must operate with either one condition or the other, that is, with minimum loaded plate current, which does not give maximum power output, or with maximum power output which will not give the lowest possible plate current.

If you operate with minimum loaded plate current, you effectively lose power output due to poor plate-circuit efficiency. If you operate at maximum power output the tube efficiency is low and it is not possible to obtain full use of the tubes. Obviously, therefore, it is desirable to operate so that minimum loaded plate current and maximum power output occur at the same setting of the final tank condenser. Another reason to make sure that you have a high Q tank is that harmonic radiation is aggravated in a low Q tank circuit.

This type of thing occurs most often on the lower frequencies, and is a simple matter to remedy. Add capacitance across the final tank coil, removing turns from the coil as you go, until you have sufficient capacity to make the two points mentioned above coincide.

Too high a value of C will cause high circulating current in the tank coil, but this will not occur unless you add a great deal more capacity than is needed to get a high Q tank.

Once you have the minimum loaded plate current and maximum power output fixed, these two points will be inseparable, regardless of your feeder system. However, these two points, which are now coinciding, may not coincide with the unloaded minimum plate current point. However, all three points will be the same when you have a flat line, and the first two points will differ from the unloaded minimum plate current point when you have standing waves. The same precaution still holds if all three points coincide. This does not guarantee that the line is flat, and separate tests must be made to verify that point.—"Ham News," April, 1948.

CONTEST NEWS

RESULTS OF 1948 TRANS-TASMAN CONTEST

Judging by the number of logs received, far fewer stations participated than was hoped, but those who did take part enjoyed it to the full. It was unfortunate that another contest was being conducted by the N.Z.A.R.T. and this coincided with the Trans-Tasman. The numbering system was not the same and did cause some confusion and this must emphasise the desirability of having a universal system of exchanging numbers. Then should two contests be run at the same time, only one set of numbers need be exchanged.

In addition to the list below, a couple of check logs were received.

AUSTRALIA

Open

VK7AB	1728	Points
VK4XJ	504	"
VK3HG	480	"

C.W.

VK2QL	1296	Points
VK3UM	510	"
VK3ZC	432	"
VK4JF	72	"
VK4RC	72	"
VK3XB	36	"

Phone

VK2CI	912	Points
VK3QK	27	"

NEW ZEALAND

Open

ZL3HC	2204	Points
-------	------	--------

C.W.

ZL1MB	1764	Points
ZL2BH	342	"
ZL1KU	144	"

Phone

ZL3HC	519	Points
ZL4HJ	120	"

A fairly high-scoring log was received from VK2RA some time after the closing date and it is regretted that it could not be accepted.

HARMONICS

Heard on the broadcast band in W.A. recently. The announcer on a commercial broadcast station was concluding a daily request session for a repatriation hospital. The sign-off went something like this—

"Well, that's all for today, but we'll be back again tomorrow at the same time when we'll call Ward Number—let me see, what Ward do we call tomorrow" (fumbles among some papers on announcer's desk), "I think it's here—QRX a moment, will you!"

You're right! That announcer was a Ham—in fact it was VK6ND.

tacts will be the first three numbers of the station of the previous contact. A complete exchange of signal reports must also take place before any points may be claimed for the contact.

SCORING

13. In order that an equitable distribution of points for States with a large number of contest stations to a State with fewer contact stations may be determined, a sliding scale of points has been allotted as shown in the Table appended.

14. In addition to the points in the Table that may be scored, a bonus of 25 points may be added to the total score for each State worked on 50 Mc. or above.

LOGS

15. The log submitted must show in the following order: Date, Time (GMT), Station Worked, Band, Type of Emission, Signal Report Sent, Signal Report Received, Serial Sent, Serial Number Received, and the Points Claimed. A statement signed by the operator must be attached at the conclusion of the log, showing that the regulations (see Rule 6) and these Rules have been observed. Any logs departing from this form will be automatically disqualified.

16. All logs must be forwarded through the Contestant's Divisional Council, to reach Federal Executive, Box 2611W, G.P.O., Melbourne, on or before the 6th September, 1948.

AWARDS

17. Attractive certificates will be awarded to the First, Second, and Third Highest Stations in each State. There shall be no outright winner. Where a large number of logs are received from any one State, further awards may be made at the discretion of the Contest Committee.

18. The State to which the Perpetual Trophy is to be awarded shall be determined by the highest average score of the first highest six (6) logs (as mentioned in Rule 9) in each State.

19. The Trophy will be forwarded to the winning State in its container and will be held by that State for a period of 12 months until the winner for the following year is determined. Further details on the forwarding of the Trophy etc. will be given later.

20. The Contest Committee shall be the sole adjudicators, and their ruling shall be binding in the case of any dispute.

TABLE

		TO								
		VK	VK2	VK3	VK4	VK5	VK6	VK7	VK9	Total
FROM	2	—	1	2	3	5	4	6	21	
	3	1	—	3	2	5	4	6	21	
	4	1	2	—	3	6	5	4	21	
	5	2	1	3	—	5	4	6	21	
	6	1	2	4	3	—	5	6	21	
	7	2	1	4	3	5	—	6	21	
	9	1	2	3	4	5	6	—	21	

NOTE.—Read the Table from Left to Right for points for the various States, e.g. a VK2 scores: 1 pt. for VK3 contact. 2 pts. for VK4 " etc. 3 pts. for VK5 " etc. a VK6 scores: 1 pt. for VK2 contact. 2 pts. for VK3 " etc. 4 pts. for VK4 " etc.

REMEMBRANCE DAY CONTEST 1948

The Remembrance Day Contest is to be an Annual Contest to perpetuate the memory of those Australian Amateurs who gave their lives for their country during World War II. It is to be held during the week-end nearest to the 15th August in each year—the date on which hostilities ceased in the South West Pacific Area.

A handsome Perpetual Trophy will be awarded annually for competition between States, and will be inscribed with the names of those who gave their lives, so perpetuating their memory throughout Amateur Radio in Australia. The name of the winning State for each year will also be inscribed on the Trophy.

RULES

1. The contest will commence at 1800 hours E.A.S.T. on the 14th August and continue through until 1800 hours E.A.S.T. on the 15th August, 1948.

2. The Contest is open to all Australian Amateurs, but only members of the W.I.A. are eligible for the awards.

3. The Contest is an open contest—c.w., phone or a combination of both may be used.

4. The Contest is an Interstate Contest, and Amateurs in each State will endeavour to contact Amateurs in all other States.

5. A station may be operated by more than one operator provided that a separate log is entered for each operator under his own call sign.

6. All present amateur bands may be used, and all transmissions must conform with the regulations as laid down in the P.M.G.'s. "Handbook for Operators of Amateur Wireless Stations," January, 1948. Any breaches of these regulations will lead to the disqualification of the station concerned.

7. The arranging of schedules for contacts on other bands will not be permitted.

8. All stations entering the Contest will call "CQ RD" if using c.w. and "CQ Remembrance Day" if using phone.

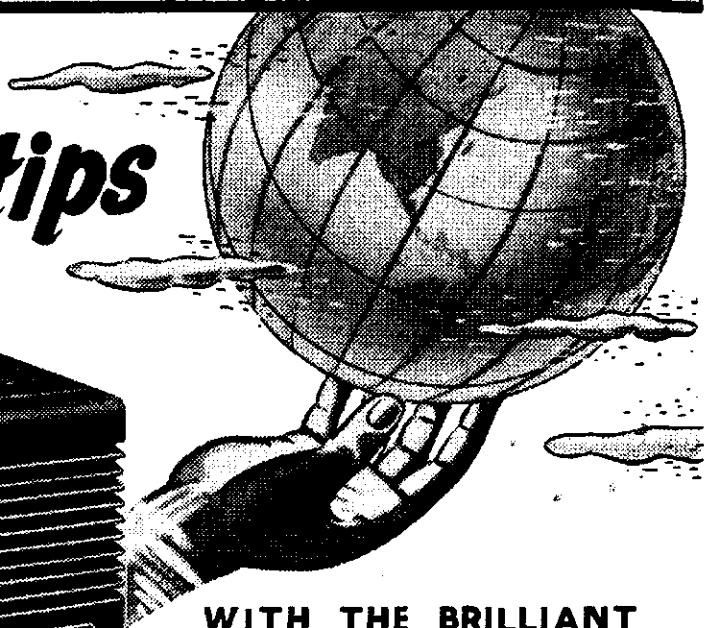
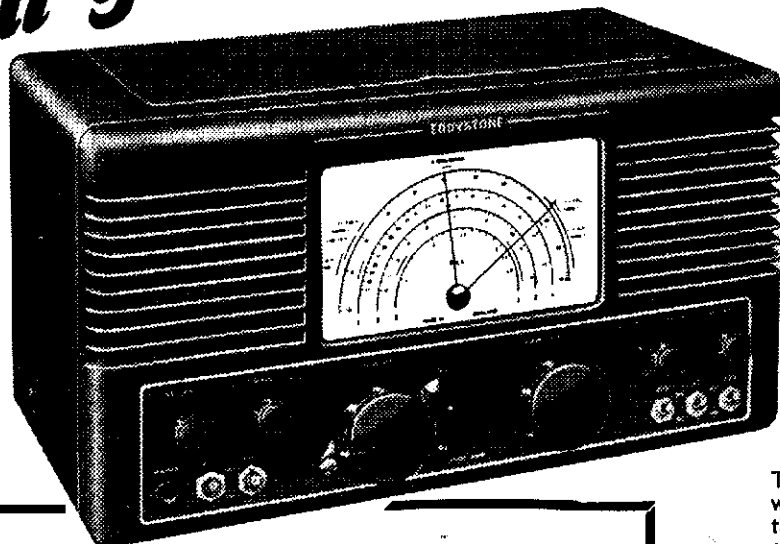
9. A State competing for the Trophy must submit a minimum of six (6) logs from members before becoming eligible for contesting the Trophy.

10. Only one contact per station per band is permitted.

11. Each participant shall assign himself a three figure number. When more than one operator operates the same station each must assign himself a separate three figure number.

12. The exchange of serial numbers shall be the same as for the last DX Contest. The first three figures are those chosen in Rule 11 above and will be retained by the station throughout the Contest; and the second three numbers will commence with 000 for the first contact and for subsequent con-

YOU'VE GOT
The DX World
 at your fingertips



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"640"

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AMATEUR BANDS COMMUNICATIONS
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BUILT LIKE A BATTLESHIP

Check these outstanding features:

1. Receiver has been designed primarily for Amateur Communication purposes, tuning range from 31 Mc/s to 1.7 Mc/s.
2. Designed to operate from Standard AC Mains with inputs of 210 volts, 200/240 volts, 40/60 cycles as well as from a 6 volt battery by the use of a separate vibrator unit.
3. Inclusive all valves, the "640" is a 9-valve job with one tuned RF stage, FC, two IF stages, detector-AVC-1st audio, 2nd audio output, noise limiter, BFO and rectifier. The valves used, in that order, are EF39, 6K8, EF39, EF39, 6Q7, 6V6, EB34, EF39, and 6X5. These are all international octal based on the Mullard or Brimar versions and are therefore easily replaceable.
4. TUNING RANGE—(1) 31 to 12.5 Mc/s. (2) 12.5 to 5 Mc/s. (3) 5 to 1.7 Mc/s.
5. TUNING. An electrical band-spread arrangement is used for this purpose. Fly-wheel control is utilised on the band-spread condenser drive. The scale is clearly marked with all amateur bands, and is so arranged to enable accurate re-setting to a spot frequency.
6. I.F. FREQUENCY—1600 Kc/s.
7. CRYSTAL FILTER is vacuum mounted to provide a high degree of stability. Phasing control and "in/out" switch are brought out to the front panel.
8. Sensitivity is better than 2 microvolts input, for 50 milliwatts output, at all frequencies.
9. OUTPUT. Audio frequency output exceeds 3.5 watts.
10. "S" METER. A socket is provided for an external "S" Meter.

The Eddystone 640 gives you everything you've ever wanted in a receiver. It gives it to you right from the start. It's performance, particularly on DX, is outstanding, and experienced DX men agree that the 640 has a signal to noise ratio superior to anything on the world's market to-day. This is proved by the large number of 640's now being sold in the U.S.A. to the complete satisfaction of their owners. And yet the 640 costs only £72 nett (also available on terms). You could work for ages on an inferior set, spend every bit of £72 and still not achieve the thrilling performance of the 640. It gives you value for every penny. There's only one way to prove it — and that's to try it. See your local distributor right away—he will be glad to arrange a demonstration.

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- **VICTORIA: J. H. MAGRATH & CO.,**
208 Little Lonsdale St., Melbourne.
- **WEST AUST.: CARLYLE & CO. LTD.,**
Hay Street, Perth and 397 Hannan St.,
Kalgoorlie.
- **N.S.W.: JOHN MARTIN PTY. LTD.,**
116-119 Clarence Street, Sydney.
- **S.A.: GERARD & GOODMAN LTD.,**
192-196 Rundle Street, Adelaide
- **Q'LAND.: CHANDLERS PTY. LTD.,**
Cnr. Albert & Charlotte Sts., Brisbane
- **TAS.: W. & G. GENDERS PTY. LTD.,**
53 Cameron Street, Launceston.



Australian Factory Representatives: KEITH HARRIS & CO. PTY. LTD., 51 William St., Melb. MB 2119

FEDERAL, QSL and DIVISIONAL NOTES



Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.
 Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.
 Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Cooee.
 Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, 116 Bogan St., Nyngan; South Coast and Tablelands: R. H. Rayner, VK2DO, 42 Pettit St., Yass; Southern: E. N. Arnpld, VK2OJ, 673 Forrest Hill Ave., Albury.

VICTORIA

Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.I.
 Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.
 Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: B. Seyrine, VK3BI, 17a Raglan Street North, Ballarat; North Eastern: D. Tacey, VK3DW, 18 Harold St., Shepparton; Far North-Western Zone: Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; Eastern Zone: J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun, 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 838J, G.P.O. Brisbane.
 Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.
 Divisional Sub-Editor: H. T. MacGregor, VK4ZU, "Moquet," Eildon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.
 Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.
 Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.
 Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.
 Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.
 Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.
 Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.
 Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL DX C.C.

Applicants for any one section of the DX C.C. need not again submit cards already submitted in respect of an application for another section. All applicants' cards submitted are recorded with the necessary details by the Awards Committee. Certificates for the undermentioned have been issued through Divisional Councils.

PHONE Nil C.W.

VK3ON (3)	120
VK3EK (10)	112
VK3VW (12)	111
VK3BZ (14)	110
VK2EO (7)	103
VK2QL (13)	101

OPEN

VK2DI (2)	135
VK3BZ (5)	127
VK3HG (4)	121
VK3KX (1)	108
VK3MC (6)	107
VK2YL (17)	106
VK4EL (16)	104
VK3JE (18)	104
VK4HR (9)	102
VK6RU (11)	102
VK2ACX (8)	100
VK2AHA (15)	100

Figures in parenthesis indicate membership number to DX C.C.

CERTIFICATES

We are pleased to announce at long last that outstanding Certificates for Contests, etc., have been issued by Federal Executive to Divisional Councils. Overseas certificates have also been forwarded. Membership certificates are now being prepared for issue to Divisions.

CONTESTS

Elsewhere in this issue will be found the Rules for the 1948 Remembrance Day Contest. We urge all Amateurs in all Divisions to give this Contest their support by entering and submitting their logs; as we feel that by so doing they will give this annual Contest the support it deserves. A handsome Perpetual Trophy is to be awarded annually to the winning State. We hope to be able to publish a photo at a later date of this Trophy which will perpetuate the names of those Amateurs who gave their lives for their country in the recent war. Give this Contest your support and help us to publicise it.

P.M.G. REGULATIONS

We have been notified by the P.M.G.'s Department that the first amendment to the "Handbook for Operators of Amateur Wireless Stations" January 1948 is now printed and may be obtained on application to the Department.

SILENT KEYS

WELL KNOWN DX MAN.

News has been received of the passing of XE1AN, ex-X9A, who operated mainly on c.w., was widely known.

Howard Love, VK3KU.—We regret to announce the sudden passing of H. K. Love, VK3KU, at his home, on July 29th.

When operating portable, telegraphy stations may use an oblique and the prefix number of the State in which they are operating, e.g. "/3." The Department have also agreed to issue temporary VK1 calls to special services including Amateur Stations attached to Expeditions of National interest, such as VK1AA of the Wyatt Earp.

AVOIDABLE INTERFERENCE

The Chief Inspector (Wireless) has expressed concern at the deplorable amount of avoidable "Between-Station" interference existing on some of the more popular Amateur bands. The interference is brought about by the failure of many licensees to observe the instructions contained in paragraphs 110, 123, 136, and 137 of the "Handbook for Operators of Amateur Wireless Stations" 1948. Unless appreciable improvement in this regard is noted in the near future, the Department may be forced to take appropriate action against offenders. To refresh the memory, these instructions read as follows:—

110. Except for brief tests or adjustments, or in the authorised bands from 144 Mc. upwards, an Amateur Station Licensee must not cause a carrier wave to be emitted from his transmitting equipment unless such wave is subjected to intelligible modulation. Prolonged tests or adjustments in the authorised frequency bands below 144 Mc. must be made on an artificial aerial.

133. The use of prolonged calls causes considerable interference with other Amateur Station Licensees working in the same frequency band and does not improve the caller's chances of establishing communication. Prolonged calls must, therefore, be avoided.

136. Before beginning a call, an operator must adjust his receiving apparatus to the highest degree of sensitivity and listen on the frequency he proposes to use to make sure that he will not interfere with other stations engaged in communication on or adjacent to that frequency. He must also ensure that his transmitted signals are well within the Amateur frequency band he is using, and shall

effectively monitor them for the purpose of eliminating spurious radiations.

137. The transmission of any signals, not necessary for the conduct of experiments or conversation is absolutely prohibited; trials and practices are forbidden except in such circumstances as will preclude the possibility of interference with other stations.

The Federal Executive earnestly requests all Amateurs to give careful attention to these various requirements and thereby avoid unpleasant consequences and, at the same time, improve conditions for both yourself and your fellow Amateurs.

AMATEUR CALL SIGNS

New Issues:

- VK2ABL—R. W. Thurley, Lovedale Cottage, Stewart Ave., Hornsby.
- 2ABW—K. W. Ford, 20 Augusta Rd., Manly.
- 2ABX—R. C. Gibson, 127 Maitland St., Gunnedah.
- 2AJP—J. Weaver, 17 Coromandel St., Goulburn.
- 2AL—E. J. Porritt, Box 29 P.O., West Maitland.
- 2AMW—Wollongong Amateur Radio Club, c/o Technical College, Wollongong.
- 2AJ—J. M. Roberts, 12 Nicholas Ave., Campsie.
- 2OX—J. Stewart, 398 Georges River Rd., Enfield.
- 2PT—A. Stephenson, 152 Fullerton St., Stockton.
- 2TB—H. C. Rudder, 8 Fitzroy St., Grafton.
- 2UC—A. T. Webb, 37 Parkes St., Lismore.
- 2UU—E. J. Morrison, 44 Olola Ave., Vaucluse.
- 2UY—S. J. Burke, 79 Hanburg St., Mayfield.
- 2XE—F. G. Melvan, 125 Cobra St., Dubbo.
- 2AX—E. C. Howard, 117 Oak Rd., Sutherland.
- 2YM—R. Hancock, 603 Blaxland Rd., Eastwood.
- 2YN—J. R. Watt-Bright, P.O. Box 60, Bourke.
- 2YQ—R. J. Milne, 116 Kendall St., Cowra.
- 2ZS—G. Challenger, 112 Tozer St., West Kempsey.
- 2ZT—T. Troughear, 129 Kings Rd., New Lambton.
- 2ZY—W. Campbell, Box 57, P.O., Murwillumbah.
- VK3ABF—A. Robinson, 143 Raymond St., Sale.
- 3ABX—V. D. Bond, Bogong, via Wodonga.
- 3AUG—N. H. Sallman, Box 98, Merbein, via Mildura.
- 3CM—H. G. Selman, 55 Bourke Cres., Geelong.
- 3IM—Q. W. Porter, 51 Pakington St., Kew.
- 3RM—R. W. Easterbrook, 37 Robert St., Bentleigh.
- 3UG—F. N. Culliver, Napier St., Rye.
- VK4AI—A. F. Kearney, Flat No. 1, Shorncliffe Flats, Shorncliffe Pde., Shorncliffe.
- 4AM—W. H. Kirk, 15 Brisbane St., Mackay.
- 4CE—C. D. Milne, 19 Dullest St., Kelvin Grove.
- 4CI—D. F. Forbes, "Hastings," Mallon St., Bowen Hills.
- 4DK—R. Kerr, Congress St., Tingalpa.
- 4XD—K. W. Nutt, 1 Fletcher St., Townsville (Box 486, Townsville).
- VK5JZ—J. Young, 1 Nalders St., Glandore.

VK6BA—W. S. Moore, 171 Thomas St., Sniabco.
 6BF—E. J. Thornton, Lot 92, Toorak Rd., South
 Belmont.
 6CD—W. F. Dawson, 124 Forrest St., East
 Fremantle.
 6CK—C. M. Hayes, 26 Kimberley St., West
 Leederville.
 6DW—A. W. Haworth, Lot 49, Butcher St.,
 Bruce Rocks.
 6HR—L. H. Roeger, 59 Landsdowne Rd., South
 Perth.
 VK7BM—W. S. Morrison, 20 Main Rd., Moonah.

FEDERAL QSL BUREAU

RAY JONES (VK3RJ), MANAGER

An interesting visitor to the July meeting of the Victorian Division was Lt. Terry Maddern, ex-VU2CC, who is being demobbed in Australia with a view to settling in this country. Terry, when called upon to relate some of his Ham experiences in India, modestly declared that apart from running a

15 watt transmitter with which he kept eked with "Burma and Tibet," he had little else to relate.

Another interesting visitor to the meeting and to as many Ham shacks as his stay in Melbourne permitted was David Mitchell, ex-GV6AA and G2II. David is on his way to New Zealand on the "Athenic" and intends settling in ZL and doubtless ere long we will have the pleasure of a contact with him under his ZL call sign. The writer got quite a thrill when David produced writer's QSL cards for contacts in 1932 and 1933. David was also able to give first hand and authentic information on the current food situation in Great Britain.

A card from a little known country recently came to hand. It was from PX1A in Andorra which the card describes as "almost a free republic between France and Spain." The card also states: "I am the sole Ham in Andorra. Any other PX stations heard are pirates" and solicits QSLs to go via Box 273, Chihuahua, Mexico.

John Gore (VK2PG), who is getting more than his share of current DX, had the misfortune to have his pole and antenna carried away by the gales that beset our oldest State during the end of June.

A card to hand from the expedition "Gon Waki" with the call sign shown as VP7NG, "In the beautiful Bahamas," bears the superscription "Now W4NNN" but does not state which of the three operators listed on the card now signs the latter call.

Another unusual card is that of HP2CA Portable Marine and bears the information that HP2CA is operated on board a former American freighter now registered under the flag of the Republic of Panama, but is not a licensed Panamanian amateur radio station. The card related to a contact when the ship was near Martinique and solicited a QSL care Radio CX1CX, Box 11, Montevideo, Uruguay.

July must have been the month of unusual QSLs as a further card came to hand from LZ1AA, Box 430, Sofia, Bulgaria, stating that the station is the first official LZ amateur station and this contact was his first DX QSO.

QSL traffic via the Federal Bureau for June registered an all time high totalling over 7,700 cards. This tally eclipsed the previous record by a couple of hundred cards.

For the benefit of new licensees the QSL set-up in Australia is recapitulated:—

Federal Bureau: Box 2611W, Melbourne, or 23 Landale Street, Box Hill, E.11, Victoria, distributes in bulk to the State Bureaux all overseas cards incoming to Australia and vets cards for W.A.C. and W.B.E. Certificates.

VK2 Bureau: 78 Maloney Street, Eastlakes, N.S.W., distributes for New South Wales.

VK4 Bureau: 33 Felix Street, Woolloowin, N.3, Brisbane, distributes for Queensland.

VK5 Bureau: 8 Brook Street, West Mitcham, S.A., distributes for South Australia.

VK6 Bureau: Box F319, G.P.O., Perth, distributes for Western Australia.

VK7 Bureau: 6 Thirza Street, New Town, Tasmania, distributes for Tasmania.

VK3 Bureau: 26 Lucas Street, Caulfield, S.E.8, Victoria, distributes for Victoria. Where applicable please see that your State Manager always has a stamped addressed envelope on hand for you. This will help him and you too. Outward bound cards from Victorian Stations should be sent to 190 Thomas Street, Hampton, Vic.

A note to hand from that old-timer Mart Chaffer, owner of many varied call signs and now signing VK3MH discloses that Mart is as keen as ever and is awaiting the completion of a new home in Ballarat. Until then his QTH is care 3BA, Ballarat, Victoria.

VK2YL informs us that in a recent QSO with VP1AA, British Honduras, he asked him to convey to other VKs that they would soon receive their outstanding cards from him.

NEW SOUTH WALES

About 100 members attended the general meeting on the 25th June. The chief attraction for the evening was a very instructive and interesting lecture by Mr. J. R. Reed (VK2JR), Chief Engineer of the Transmitter Department at A.W.A. He dealt mainly with methods of varying the frequency of crystal controlled transmitters. He then spoke on feeder lines to aerials, neon lamps as voltage regulators and a 100 watt modulator using 807s. Altogether it was a most illuminating evening. Full details are being prepared by Mr. Reed for publication.

During the evening the President announced the election of the Council for 48-49 as follows: President: Mr. M. Meyers (VK2VN); Vice-Presidents: Mr. J. Moyle (VK2JU) and Mr. H. F. Treharne (VK2BM); Councillors: Mr. J. Corbin (VK2YC), Mr. C. Hutchison (VK2YP), Mr. N. MacNaughton (VK2ZH) and Mr. A. Thurston (VK2AV); Secretary: Mr. W. L. Nye (VK2XU); Treasurer: Mr. B. Anderson (VK2AND).

After inactivity for about six months VK2ANN is building a house at Miranda and will soon be on the air again. 2JP, 2ALO and 2OQ have been very active in the DX field of late and have made some fine contacts on 14 Mc. 2FH recently visited North Coast Hams during his honeymoon. 2EV prefers 809 to beam tubes in his final. 2PX is finding conditions poor in early mornings on 14 Mc. 2AM using c.w. and phone on 7 and 14 Mc.; interested in 8JK rotary. 2PA and 2TA down in the City, visited quite a number of shacks. 2TF has new receiver complete with all mod. cons. 2AHB has nice signal on 7 Mc.; ask him about his DX on 7 Mc. 2BA after solving the receiver design, now has to construct same. 2VQ's new QTH is Manly and hopes to be on soon again. 2XJ has nice compact equipment; trying phone on 14 Mc. 2AGW is now at Lindfield and will be working G land on 14 Mc. again soon.

2ATH busy at University; folded dipole 90 feet high and 15 watts works the DX on 14 Mc. 2CM on all bands, good results from dipoles and Windom antenna. 2AM has over 100 countries post-war on

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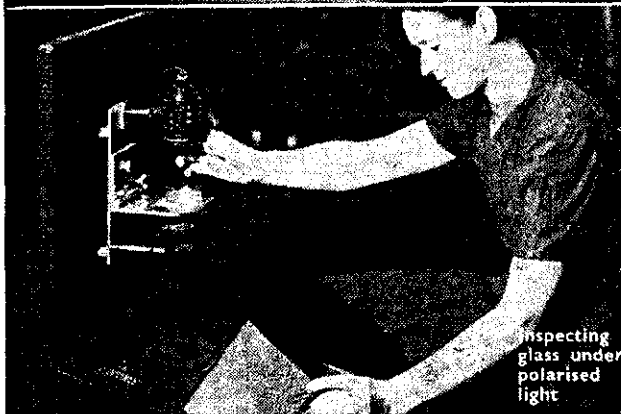


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c.w.; thought to be thinking of using phone. 2RP has completed re-build of modulator and clipper, now interested in building a new house. 2ACX has 150 countries post-war, now hopes to complete the glamour transmitter. 2HO is sold on v.h.f., gets out well from a poor location on 50 and 144 Mc. 2DI building new receiver; could only work 168 countries with old receiver. 2AGO has a really nice three element rotary on tower. 2ALG is not very active, QRL with exams. 2OY in city for holiday; satisfied with vertical on 14 Mc.

NORTH SHORE ZONE

2VN, N.S.W. Division "Prexy," in throes of re-building after trial run as Benedict. 2GQ seriously considering giving away the key in favour of phone. 2AND wants tunnel drilled through hill to allow sigs to get out. 2TL joins hi-power gang with HB9 worked on eight watts. 2PV trying to work Zone 35 by mental telepathy if no other means successful. 2NB lost his call to a Broadcast Station and has now been allotted 2AMB. 2JG re-building hi-power final to add to local QRM. 2GC, another of local hi-power gang, working XE with seven watts. 2ML, the Middle Head king, is active on phone and c.w. 2FM now located at Neutral Bay and hard on the heels of elusive DX. 2DI pushing hard for that 200th country. 2AM wants Zone 2 for W.A.Z., but figures Baffin Island must have sunk without trace. 2AIJ using cathode modulation, but hasn't been heard with his f.b. sig lately—where are you, Eric? 2ADV planning method to rotate house with beam mounted on roof. 2ZH demonstrating nice line of "flash-overs" in power supplies. Peter Adams, ex-Secretary of Division, now in super f.b. location at Avalon Beach. 201 heard snagging a few nice countries. Haven't heard 2DA in the dog-fights on 14 Mc. lately—given the game away, Harry? 2EO still getting among the good stuff. 2NI fairly active on 7 and 14 Mc. phone, with nice two element beam up on the roof.

This is the first burst of these notes since pre-war, fellows, and dope is wanted from the gang anywhere on the North Shore, which means from the Harbour Bridge to the Hawkesbury, and from Manly West to Parramatta. So if you've anything of interest to the gang, shoot it along to me—L. D. Cuffe, VK2AM, 775 Military Road, Mosman. But let's have it before the 12th of the month—thanks!

NORTH COAST AND TABLELANDS

Not too much activity on the air this month. Floods setting the majority back. 2GI, 2XO and 2LH all back on 3.5 Mc. 2MC on 7 Mc. phone. 2SH still very active on 7 Mc., was visited by Ray 2SB; they spent many hours forgetting radio and catching big ones. 2SB also visited 2PA who demonstrated his rig on 28 Mc. 2PA recently visited Sydney, met a lot of the gang and struck the usual Ham hospitality. 2JK getting ready to burst out on 28 Mc. and hopes to have a beam completed shortly. 2ADN putting out strong signals with only a few watts.

NEWCASTLE ZONE

2AHA makes the Australian DX C.C., not often heard on 7 Mc. these days. 2BZ still on the v.h.f.s., crystal on 144 Mc. 2PQ fairly active on 7 Mc. phone. 2CI permanent position on about 7000 Kc. each week-end. 2OW Secretary of the local radio club, and still finds time to make 7 Mc. for the week-end. 2ADX using filters to cut the side off his telephony signals. 2XQ still working phone, the big re-build is under way. 2CX left Sydney for his old haunts and now to be found at Nelson's Bay, not heard on as yet.

COALFIELDS AND LAKES

2KR heard on 7 Mc. with the usual good signals, talks of folded dipoles and new sticks. Nothing of 2AEZ since returning from holidays, suspect big re-building programme. 2RU still very active on 50 Mc. 2AMU only heard on 28 Mc. when skip permits, but plenty of DX heard calling him, so the beam is working. Nil to report of 2TX this month. 2OG mainly on 50 Mc. and 144 Mc., has been heard in Cessnock on the latter band. An ex-Wong Ham, formerly 2CK of QRP fame, now VK9GW, of Port Moresby, wishes to be remembered to all his old friends and is anxious to contact VKs. 2KZ has taken time off from W.A.S. patrol to get the two-tube blooper going on 50 Mc.; rig getting out around Newcastle district. 2KF also a keen 50 Mc. man, but keeps an ear on 28 Mc. 2YO still inactive. No report from 2TY, last news he was active on 144 Mc. 2XT believed to be building. 2MK puts a little time in on 28 Mc. phone. 2PZ admits a few more wires have gone into the new receiver; tower with motor at the top looks very impressive. Conditions must be poor in the zone as 2ADT was seen at the local picture show!! Still he managed to work a VK4 on 50 Mc. on 4th July; new receiver under way promises to be hot. 2YL also building new receiver and making alterations to shack.

WESTERN ZONE

2ACU has a new folded dipole on 7 Mc. using 300 ohm cable, results really f.b. 2WH has been really busy, chukkas and all that, what!! 2BT on 14 Mc. phone DX, recently had a contact with a

W6 re-broadcast over the N.B.C. Dubbo has another Ham, that makes six all active and as they are all using good gear the interference is not too bad. 2TG heard on 7 Mc. with low power and the quality was much better than usual. 2ALX working all bands with excellent phone. 2JW re-building for higher power. 2NS always on 7 Mc. phone or 14 Mc. c.w.; 115 countries up. 2IE has built a new two terminal v.f.o., hear it is very stable.

2AIK fairly active on 7 Mc. phone, AR8 giving some trouble. Expected more of the gang to make 3.5 Mc. this winter but 2JC the only consistent one. 2HC heard occasionally, lower power from batteries and genemotor. 2QA tries all bands and results indifferent, too much audio and not enough r.t., hopes to rectify the latter shortly. 2HZ quite pleased to hear someone did like his voice. 2LY still re-building, even resigned from 7 Mc. after having his only crystal frequency squatted on. 2FH made the news in the daily press (Sydney), got married; don't know when beam will get finished. 2LZ contemplating operation on 288 Mc. 2AFR possibly leaving Katoomba for Singleton.

SOUTH COAST AND TABLELANDS

Wollongong Club has set up a station at its own club rooms, news from 2WP who has gone QRO to 16 watts. Type A Mark III used as an exciter driving 807s. 2GG heard operating from 2WP's. 2VH also active, running 17 watts to final v.f.o. controlled and is on 7 Mc. phone.

Federal capital city news comes from 2JM who is active on 7 Mc. and 3.5 Mc. with 9 watts. 2TV been on 28 Mc. with 53, 307, 809 with 48 watts, 807s AB2 modulators, rotary beam under way. 2PI has been contacted from new QTH at Hall near A.C.T., a few gremlins loose in the r.f. section. 2DO had the pleasure of meeting up with an old timer Harry Hutton 2HV, who is now located at Duntroon Army School, was contacted through the club's transmitter VK2RM.

2PN heard briefly on 7 Mc. with 2GT, Ross uses 50 Mc. as the happy hunting ground. 2AIK with the usual solid signal contemplates a lot of changes when the warmer weather arrives. 2JQ on 7 Mc. with the usual good quality phone. 2ET, one of the first stations in A.C.T., has given game away. Activity in Yass restricted, too cold. 2ALS has been sick and 2AKE heard only once. 2DO's biggest effort each week is to get out of bed for Zone skeds at 0830 each Sunday—its cold!!

SOUTHERN ZONE

2VK expects to make tracks to the old country and will be on the lookout for VKs on 14 and 28 Mc. 2EU has rack and panel job nearly completed and building new modulator, 807s and all that. 2APW now pounding brass on S.S. "Lowana." 2OJ converting part of transmitter to band-switching and general revamping, also building c.r.o. and 50 Mc. transmitter, no time for sleep. Prospective Ham is Bob Want, of broadcast station 2AY. SARC spends week days in Army at Bandiana and week-ends with the rig in Brighton. 2QD doing civvy

job at Bandiana. 2JA, 2QE and 2ANQ are not active mainly owing to lack of time. Wagga is again behind the "iron curtain," how about some news.

VICTORIA

At the July general meeting the talk on Ionospheric Predictions could not be given due to unforeseen circumstances. Three sound films on radio and acoustics were screened as an alternative programme. The first film was entitled "Sound Waves and their Sources." Starting with the action of a tuning fork, animated diagrams showed the formation of alternate compressions and rarefactions (longitudinal waves) in air. The meaning of the terms frequency, wavelength, and amplitude were illustrated. The vibration of a stretched string was pictured with excitation in fundamental and harmonic modes. The effect of harmonics on wave-shape and the quality of the sound followed and oscillograph patterns illustrated the difference in quality of sounds of equal pitch emitted by different orchestral instruments. The film concluded with a description of the human vocal mechanism and illustrated the production of speech sounds.

The second film was on "Fundamental Acoustics." It dealt with the propagation of sound waves. The mechanism of refraction was shown and diagrams illustrated how this could produce long distance sound propagation on a warm summer's evening. The structure of the human ear was illustrated and its action under the influence of sound waves described. The frequency response of the average ear was shown. The effect of restricting the frequency range of reproduced sound was demonstrated and those present heard for themselves the necessity for a wider range of frequency response for the reproduction of music than for the reproduction of speech. It was shown that under certain conditions frequency discrimination could occur when band music was heard out-of-doors. Reflection of sound waves produces echos, and in a room repeated echos cause "reverberation." The effect of room construction on reverberation time and the nature of speech or music in the room was illustrated both pictorially and aurally. The film concluded with a brief description of methods of electrical sound recording.

The third film was entitled "Radio Receiver Principles and Design." Starting with a simple crystal receiver animated diagrams illustrated the principles of detection. The film dealt with coupled and resonant circuits in an elementary manner and then with electron tube principles. After describing the action of a triode amplifier the circuit of a t.r.f. receiver was described.

The sympathy of members of the Victorian Division is extended to Bob Stevens (VK3OJ) and Herb Stevens (VK3JO) upon the recent loss of their father.

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 The final lecture of the series, on high quality reproduction in broadcasting, will appeal to all those concerned with the production side of radio, as well as technicians, and is open to other than class members on payment of the usual fee of 1/.

Synopsis:
 August 8—General Survey of Frequency Modulation, Basic Principles, by A. H. Kaye, B.Sc., A.M.I.E. (Aust.).
 August 17—Wave Propagation and Aerials by O. M. Moriarty, B.A., A.M.I.E.E., A.M.I.E. (Aust.).
 August 31—Frequency Modulation in Broadcasting—Transmitters and Receivers.
 September 14—Pulse and other methods in Radio Communication by J. D. Campbell.
 September 28—High Quality Reproduction in Broadcasting by F. O. Viol.

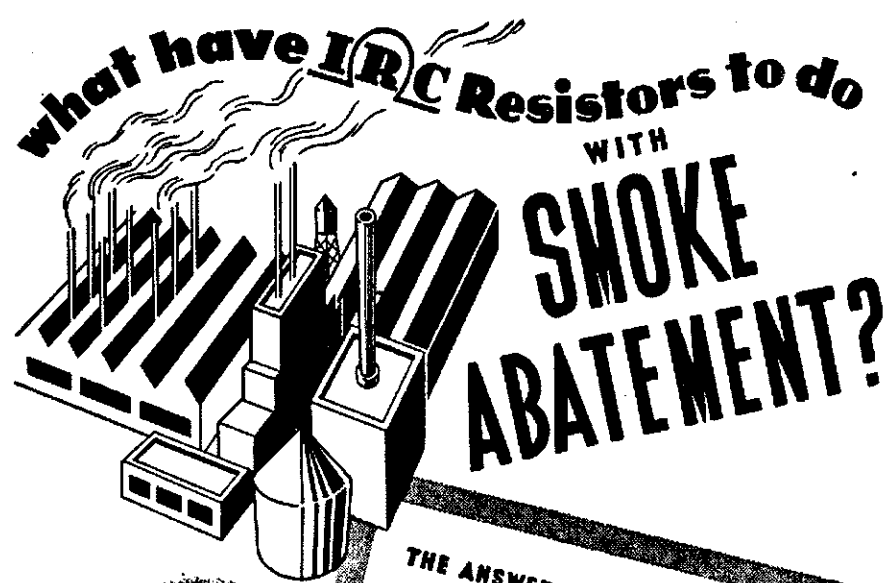
Enquiries at 191 Queen Street (FJ 6997), or at Adult Education Centre, 2nd Floor, 114 Flinders Street (Central 2421) or at the first lecture.
T.A.C. ACTIVITIES
Executive Group.—At the June meeting of the group office-bearers for the ensuing fiscal year were elected. These are—Chairman: Mr. A. J. G. Glover, VK3AG; Vice-Chairmen: Messrs. H. N. Stevens, VK3JO, and C. C. Quinn, VK3WQ; Secretary: Mr. D. A. Gray, VK3ADG; Council Representative: Mr. D. A. Gray, VK3ADG; Assistant Secretary: Mr. K. C. Seddon, VK3ACS. Ken Seddon, Assistant Secretary, is a newcomer to this group and his assistance will be greatly appreciated. The group, in re-electing George Glover as chairman of T.A.C., expressed sincere appreciation of the work he has been doing for the Division. The work of organising lecturers and films at the general and group meetings has been almost entirely carried out by the chairman in his own time.
 After a recent stocktaking of the Instrument Library, the following instrument was found to be missing: W.I.A. No. 9, Weston 0-150 Ma, d.c. meter, serial No. 711274. Any member who can supply information as to the whereabouts of this meter, please inform the Administrative Secretary or T.A.C. as soon as possible.
 During the year, four direct reading absorption wavemeters covering the frequency range 55 to 400 Mc. were obtained and are available for loan. An "all wave" modulated oscillator, presented to the Institute some time ago by Mr. H. Kinnear, VK3KN, is now in service and is available for loan to members requiring it.
 Country members requiring loans of books, magazines (QST, etc.) or instruments should contact the Administrative Secretary by telephone or write to T.A.C. and the material will be despatched by post or rail, as appropriate.
 A lecture and demonstration on v.h.f. and u.h.f. aerial design by Mr. C. Rollan, of P.M.G.'s Research Laboratories, scheduled for the last meeting of the V.H.F. Group, unfortunately had to be postponed to a latter date at the last minute owing to the illness of the lecturer. In its place a demonstration of P.M.G.'s F.M. Receiver was given by Mr. C. Brown, of the P.M.G.'s Research Laboratories, who answered many questions and cleared up many misconceptions of the reasons for and advantages of F.M. The meeting greatly appreciated Mr. Brown's action in giving this lecture at such short notice.

FOOD FOR BRITAIN

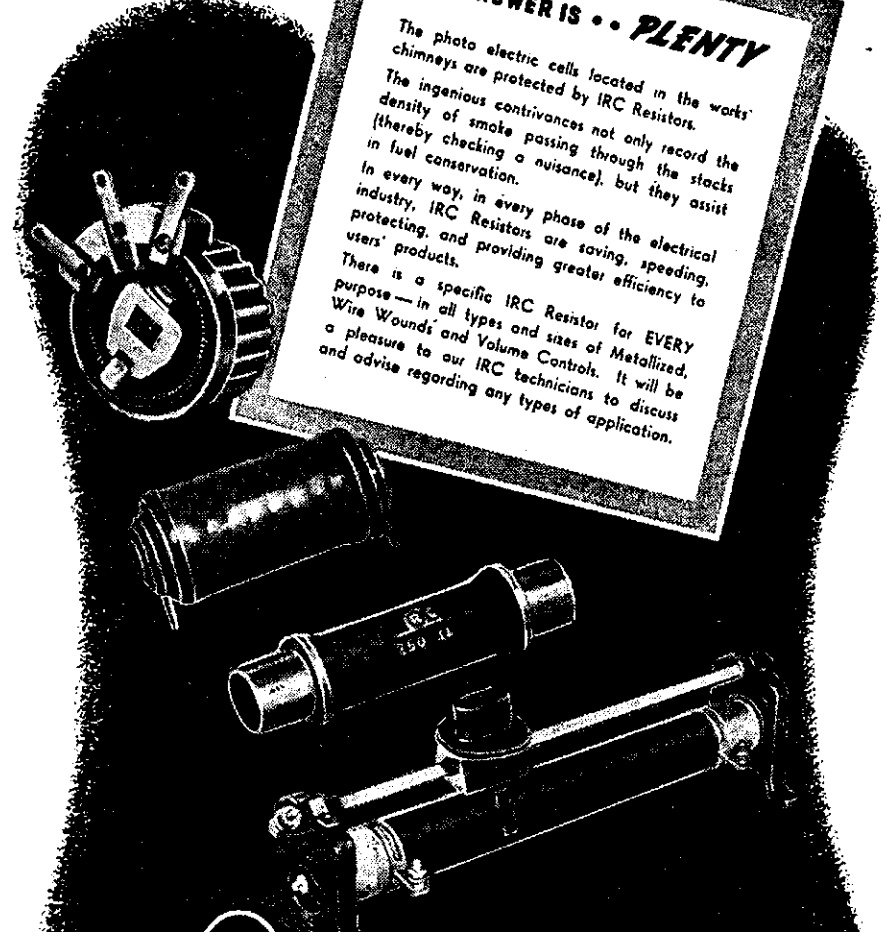
The Victorian Division "Food for Britain Patriotic Fund" has completed its 15th month of operations, and has consigned in that time a total of 293 food parcels, which represents over a ton of food, and still has a goodly financial position. The balance sheet as at the 10th July, 1948, is as follows:—

Receipts	
Donations, General Meetings	£137 14 8
.. Zones	52 1 8
.. Victorian Council	25 0 0
Raffles	96 0 0
Bank Interest	19 2
	£311 16 6

Expenditure	
Food Parcels	£208 4 9
Petty Cash	1 5 0
Cash, in Bank	90 1 4
.. in Hand	17 4 6
	£311 16 6



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The recent raffle for the Mantel Model Radio Receiver realised the sum of £24/15/-, and was won by Miss M. Campbell, c/o. T. & G. Building, Mildura, with ticket No. 27. Congratulations, Miss Campbell. The Committee wish to thank all those who so ably helped with the sale of tickets, and to those who bought so many tickets! We have no immediate raffle plans for the future, but in the meantime, keep those donations coming in. Please send any donations through your Zone Organisers or direct to "Food for Britain Fund," Box 2611W, G.P.O., Melbourne.

SUGGESTIONS OFFERED

1290 Malvern Rd., Malvern, Vic.

Editor, "A.R."

I am, in the interest of the W.I.A., suggesting that a position be established for the organisation to have an organiser or a recruiting officer, all for the purpose of rounding up outsiders and "hangers-on." I do not know if you are aware of the position or not but there is quite a number of non-members who apparently are not giving any thought to the fact that they should become members. During the past year as a result of my enquiries in attending the General, V.H.F., T.A.C. and Receiver Group meetings plus the Hamfest and disposals I have noticed the same persons always in attendance for which they have no right and they have even obtained disposal gear via members.

The W.I.A. is undoubtedly a union for the Amateurs, therefore being as such we should have an official created just like one as of a tradesman union, a person who could canvas these people with the object of selling W.I.A. membership. A good move could also be made this way, why not to all A.O.C.P. students include the W.I.A. membership in the course. This would be a sure way of getting members as up to now, not all such students have joined up. At present, it is flinging dirt at the W.I.A. by just making use of it, by the A.O.C.P., whereas by increasing the fees slightly, all intending students would automatically become members (student members) then on gaining their ticket would be granted full membership with the necessary adjustment as to their fees. It is no joke, but we have in our midst men who are not members and they have been on the air for the last twenty years!!

If such a position was brought about, I would consider it even though I am acting as monitor for the V.H.F. 144 Mc. band for 36 hours each week plus the notes in the magazine as well as compiler of notes at the meetings, and not for

getting the sorting out work for the disposal section or acting as doorman for our new social nights. In my position if I can find time to do all these jobs then I consider that the other members should fall into line and put their shoulder to the wheel as it seems a shame that your circular should have to appeal for volunteers from so many members. In conclusion I do wish you every success in your efforts for a 1948-49 team.

—W. J. HARTLEY.

NORTH WESTERN ZONE

Members are reminded that the Zone Convention will take place during the last week-end of August, Saturday and Sunday, 28th and 29th August.

The Convention will be held at the home of Bruce Mann (VK3BM), Quambatook. Bruce's home is about two miles from the town, and those attending the Convention should have no trouble in finding it. (His mast can just about be seen from the town—Editor.) Bruce has suggested that in view of the very large crowd expected, that it might be wise to bring along some bedding with you for although there appears to be sufficient on hand to cover the multitude, a little extra would not go astray.

Would those who have not yet signified their intention of attending this Convention, and intend to do so, please notify VK3BM as soon as possible so that he can make suitable arrangements.

CENTRAL WESTERN ZONE

The Central Western Zone Convention will be held at Horsham on Sunday, 12th September, afternoon and evening. It will take the form of a 50 Mc. Field Day during the afternoon, a dinner at night, followed by annual meeting, a technical talk and (we hope) some technical films. The Zone will be pleased to welcome any members of Council who could make the trip or any other Hams who may be interested; 50 Mc. experts would be particularly welcome as v.h.f. has not had enough practical application in the Zone as yet although there is plenty of interest. Any visitors requiring accommodation at Horsham should contact VK3TA who will be only too happy to arrange same.

3TY is still enjoying the undoubted benefits of the local d.e. supply. The other night the powers that be reversed the polarity of the mains for half the night. All of Bill's electrolytics violently objected and went up. However he has a free 50 volts between the negative and earth for battery charging so why worry?

3ARM (way out in the west) has a new transmitter just waiting for his new generator, so he will soon be able to give the QRM a real run for

its money. 3AKP is lightly tinkering with phone, but has not got very far as yet. 3TQ is busy with Test broadcasts so is not on much, however he had a 50 Mc. wavemeter calibrated so should be OK by the time cricket finishes. Remember next Zone hook-up will be on Sunday 8th August, at 10 a.m. on 7120 Kc.

GEELONG BOYS FORM A RADIO CLUB

The Geelong Amateurs decided to form a Radio Club and have named it "The Geelong Amateur Radio Club." A meeting was called and office-bearers elected. Alex Bell (VK3ABE) was elected President; Jack Mathews (VK3SSY) and Ed Kossek (VK3AKE), Vice-Presidents; Bob Wooley (VK3IC), Secretary; Alf Foster (VK3AJF), Treasurer. The Committee are Bill Brownbill (VK3BU), Archie Woolnough (VK3BW), Bruce McKenzie (VK3VF), and Phil Greig (VK3APG). Fred Freeman (VK3ALG) was elected QSL Manager and Press Correspondent.

The first general meeting was held on 15th June, and was well attended by short wave listeners and Hams. A Type 3 Mark 2 transmitter and a Type A were demonstrated by 3ABC and 3APG. The club has planned to conduct field days, have lectures and demonstrate equipment, etc., also to meet for a chin wag and to help budding Hams.

EASTERN ZONE

The W.I.A. Emergency Network was brought to front page news, when 3LS with three Eastern Zone stations, 3SS, 3AHK and 3AJL, all operating on 6994 Kc., played a big part in the locating of a boy who had strayed while his father was cutting wood in the heavy timbered country near Tinamba. 3SS and 3AJL with portables went with the searchers and kept in communication with 3AHK, who was operating his home station and relaying messages to 3LS who was in turn in touch with Russell Street.

3WE has become the proud father of a brand new junior op., congrats Bill. 3QW's business carries him far and wide, but Graham usually manages to return home on the week-ends. 3PR has just finished building a communication receiver and by reports is working extra well. Ron is anxiously awaiting the a.c. which he hopes to have soon. 3CI has been doing quite a lot of experimenting with beams, and has managed to put out a S8 signal on 50 Mc. from his home location. 3VL and 3US have been doing quite a lot of re-building, the last job being a complete new 50 Mc. transmitter and reports are very encouraging, both stations were operating on the 50 Mc. field day, one portable and the other from the home location.

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High Frequency Thermionic Tubes, by Harvey. Cost 37/6. Our Price, 8/6.
Micro Wave Transmission, by Slater. Cost 18/6. Our Price, 8/6.
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An Amateur Radio Club, with its own transmitting licence VK3ASS, has now been formed by members of the Army School of Signals at Balcombe. The club already has a membership of 20. The President is Lt.-Col. G. E. Every VK3GE with Major Moon, Lt. Wright and Sgt. Heinrichs VK3KT active members of the Committee. Cpl. Beckett is Treasurer.

A meeting convened by the President of the Victorian Branch of the Wireless Institute of Australia was held at the Army School of Signals with a view to forming a sub-branch of the Eastern Zone. As a result of the meeting a sub-branch was formed with VK3RR as President and VK3FH as Secretary.

The zone is sorry to hear that it will be losing SHZ. Murray has been very active in the zone's activities and especially on the v.h.f. His new QTH will be Shepparton. SDZ will be taking his place with 3AKM; both stations are active on 50 Mc., so it is up to you Mac and Ron. 3LV has put in a power driven battery charger so Len's battery worries are at an end. 3BB has put in an appearance again with a 39 signal on 7 and 3.5 Mc. Other active stations in the zone are 3ANC, 3APP, 3TH and 3DI, but no news of the Sale boys, what say chaps.

SOUTH AUSTRALIA

Well, here we are again, full to the brim with city and country notes, and when I say country notes, that is what I mean. Just when we were starting to lose our faith in country ham's enthusiasm, up pops 5UX, unheralded and unsung, with a big batch of dolings concerning the Northern gang. Thanks Les it was much appreciated. Anyway, more of that later, now for the general meeting. The meeting was held on the 13th of the month, which by the way is also the deadline for copy to the magazine, therefore just a brief reference to the meeting can be made. It consisted of a practical demonstration of a wire recorder by Mr. S. Keats, and opportunity was taken to record earlier in the week, several of the boys on the air with c.w. and phone, and these recordings, together with a few pertinent remarks on correct operating principles, were played back to the assembled meeting. The whole thing was a great success, and was much enjoyed by the large gathering present. 5XU was in charge of the technical side of the demonstration (personally I think it was a good idea to keep him out in front of everybody after the Philoscope incident; it would have been hard to try and shove the recorder up his jumper in full view of everybody) and 5FL handled the lecture side of the correct operating principles. 5BZ, 5XX, 5LW, 5BY, 5FL and 6NL, yes I mean 6NL, acted as guinea pigs for the demonstration, some knowingly, and some unknowingly. Some faces were red, and some were not, but everybody enjoyed it, and that is the main thing. Jim Paris proposed the vote of thanks very ably, and judging by the applause a good time was had by all.

Several Hams have asked as to the whereabouts of "Gremlin" these days. I am not in a position to give any information on this delicate subject, one reason being that immediately I approach a gathering of Hams at a meeting or anywhere else for that matter, they all start talking in whispers and make objectionable noises with their mouths toward me. I suppose one must be prepared to pay the price of fame, and possibly Walter Winchell has the same trouble, but I would like to let them know the "gen" on "Gremlin," so possibly my charming and esteemed "palsy walsy," the Editor could oblige. What say Tom.

Had to smile the other day when I heard 5XJ in contact with 5MD. It appears that Doc was explaining that 5GD had chipped him for not giving his call sign every five minutes, and 5XJ said "these young and cocky new Hams always like to chip the old ones." Doc sounded as if he did not know whether to feel insulted or complimented.

5PS was heard telling 5LR that the QSO would have to be a short one as he (5PS) was going to have a bath. This innocent remark has caused quite a lot of excitement among the boys, and judging by the large number of remarks, both complimentary and otherwise, a large number of sticky beaks were listening in. Knowing 5PS as I do, I can quite realise that once the year was up, not all the contacts in the world could keep him from his bath.

I wish to thank the Ham who sent me the somewhat scandalous reports on the doings of city Hams. I appreciate the thought behind it, but was it necessary to type them on toilet paper? Also thank you "Friend and Colleague" for the contributions, but why the signature "73's."

Regarding the paragraph last month about 5IT and his new "secret" weapon, I heard Tom working KHOF on 28 Mc. and "Ella" asked him when he would be using his Starba curtain. When he said that he was using it at the moment, she remarked that she had heard him louder on his beam. Well, well, so much for the secret weapon. 5AJ heard

telling 5QM that his (Ross') wife had had a birthday, and he had given her a new pressure cooker, and now he has not so many pots and pans to wash up. You've got something there Ross, what one would call a scientific approach to house-keeping. 5GD heard working a VE named "Gertie." When he finished the QSO, 5MD called her but she turned a deaf ear to his seductive voice. Try a little whistle next time. Doc when trying to put your frame in on George's girl-friend. 5LR has been working quite a few ZS stations on 28 Mc. lately, and fairly chortles with glee if he succeeds in pinching one of them from 5GD.

5ZR, who for some unexplainable reason calls himself "Zombie Radio," is still snaring any DX that pops up. Believe me, when it comes to working DX he is far from being a Zombie. 5FM is right amongst the DX with c.w., seems to have the secret of snapping up that elusive station that we all hear, but seldom contact. 5FL is getting his fair share of Yanks using very, very correct procedure on very, very precise c.w. 5XO is breaking even with 5ZR on the W signals as usual; can't make out what these two have that I haven't. Perhaps they have had it less than I have. I will let you into a secret. 5GD has been blistered with a Pro Forma B. Reason? Rule 184. What's that? Well, well, you're as guilty as he for not knowing that rule, only he was the unlucky one. Don't let it happen to you.

Mr. Sheard, the Morse instructor of the A.O.C.P. Classes, knocked the boys for a loop when he sent them antidisestablishmentarianistically. This he claimed to be the longest word in the English language, but Jim Paris pointed out that the word "smiles" was longer, because there is a mile between the first and last letters. Murray Foot was seen to be just managing to copy a 15 minute burst of code, and appeared to be very relieved when told that it was definitely over 14 w.p.m. Another member of the class, Ron Brown, is a chemist when not studying the "handbook." I'll bet he has the prescription for a pass when he sits for the exam. 5XY is in hospital at the time of writing and has doctor's orders to lay off radio for six months. 5JT is making good progress in hospital also, and my informant also said that Joe intends taking a nurse home with him for the final stage of his convalescence. (You see how I protect myself, my informant told me.)

I made up my mind to lay off Doc 5MD, but a correspondent has sent in news to the effect that bed-time stories as told by Doc are becoming very popular, now what could that mean? News has reached here that 5KL is expecting to come back to Adelaide around next April. We will welcome you Clarrie, and all the boys send their 73. At the time of writing the 5XG is in hospital, and we all hope down here that she is now fit and strong again, at least fit and strong enough to detach the OM from the shack to help with the washing up, etc. 5CD, whilst awaiting the results of a recent exam for a commercial ticket, met with a slight accident, the details of which are not disclosed. Trust all is OK by now OM.

5RJ is using an AT5 whilst thinking about proposed alterations to the rack transmitter. Is still making alterations and improvements to the "scooper-doooper" receiver. Has just tossed out the crystal filter with much better results; my my. 5UX is changing over the final of his AT5 to push pull, but a spot of welding is said to be holding up the change over. (Get, it, a spot of welding, wit is coming fast and furious now.) Been pounding the brass a bit Les? 5AP is putting up a new shack down in the cellar (get it, putting up, down in the cellar, oh dear, pass me my hysterics tablets). The date of the official opening and visiting hours have not been announced as yet.

5JY is a welcome newcomer to the Northern Net, and the modulation was much improved on your second appearance OM (I should talk). 5AX is still a bit up in the air with the 50 Mc. "DX." Has the thrill worn off yet Les? 5VM has been heard on schedule with his brother 3LU, on both phone and c.w. 5PH is being heard f.b. around Kadina way, in fact several Hams are thinking of installing fuses in their receiving aerial for safety. 5CS is also rattling the speakers in the same direction. Quite the best signal from you Phil, for some time. 5XR has been heard testing, but so far has not joined the network. Jump in OM, the water's fine, or should I say the air is fine. Once again I thank 5UX, and don't forget Les, no news is good news, to all but 5PS ("Pansy" to you).

Well, just as I was putting the copy into the envelope to post away, along comes a batch of notes from the South East from a new and welcome friend 5GJ, and I hasten to include them, although the Editor has been holding his blue pencil in his hand for the last ten paragraphs. 5TW has recently had 480 volts d.c. installed, and has been chasing the c.w. on 14 Mc. 5OH is a very busy man these days, has had a.c. installed; the only Ham in Mt. Gambier to enjoy that privilege. He works at the

power station, but says that this had nothing to do with him getting the a.c.; oh yeah.

5JA is trying to stretch his backyard to take a half wave 7 Mc. aerial. Everybody is expecting to hear that all the boundary fences have mysteriously shifted overnight. He has a rotary beam on 144 Mc. and has a daily sited with 5MS. 5CJ is still out in the country on batteries and is thinking of claiming the title for the longest time spent on re-building. As I write this Col. 5MW is telling me that you passed the same broadcast exam that he did. Congratulations OM, and keep the notes coming in. 5MS is building a new transmitter using an 815 in the final. Has high hopes for a.c. soon, and is also keen on 144 Mc.

It has always been said that "the bigger they come, the heavier they fall." It's been told of a well known VK5 who has been holding forth on the subject of v.f.o.'s., so much so that he had convinced everyone that of all the things he wouldn't do was to use a v.f.o. Well seems as though someone has convinced him, for we understand he obtained sundry pieces of aluminium, condensers and odds and ends, with the result that he is now using a v.f.o. on 14 Mc. Seems as though he has some more explaining to do to convince everyone that a PANSY has a sweet perfume.

WESTERN AUSTRALIA

The general meeting was held on 12th July. There were 53 members present and VK3APW (a visitor for 14 days). E. J. Thornton (8BF) was welcomed as a new member. Correspondence from 6WZ, 6MU and 2AWW was read. Owing to the dollar situation a discussion was held as to the possibility of the W.I.A. to obtain from U.S.A. certain radio publications. Enquiries will be made and the outcome announced at the August meeting.

6FL donated to the Division a series of very fine text books to form the nucleus of a library. The organisation of the library has been left to the Council.

After the chin-wag session 6RIJ commented on the fact that certain VK6s had been heard working in the American phone band on 14 Mc. The contacts being of a local and very unimportant nature, much unnecessary QRM was being caused to other stations trying to work the Ws. A discussion followed and 6DD pointed out that this only occurred occasionally and that generally the divisions of the band were respected.

A series of lectures headed as "My Amateur Station" was commenced. 6WT gave a brief description of his equipment. It is hoped to have one of these talks each meeting night. 6MY gave an f.b. lecture and demonstration on "Band-width of an I.F. Channel." Equipment was set up to check a commercial receiver. Using a frequency wobblers and signal generator the effects of frequency deviation were clearly observed on the c.r.o. Mal then explained with a mathematical approach how the i.f. channel was practically flat for plus or minus 4 Kc. 6GB followed up with an impromptu lecture on a piece of I.F.F. equipment. This was particularly interesting as its principles of operation were considered. Another f.b. meeting, well attended, closed at 10.30 p.m.

PERSONALITIES

6HW knows his way around Jandakot, ask 6AP! 6WS has just had his 74th birthday. He is still an active Amateur and claims that this hobby keeps him young. We all hope Skipper will reach the "Century Club!" 6AP had a sad loss when he wired up his 813. Not enough vacuum! But you should see Alf's new QSL card! Who's the bloke in the top right-hand corner? 6FR has bought himself one of those shiny new coil units. When are you going to listen to us again Fred?

6OP was heard talking about 14 Mc. beams and wind mill towers at the last W.I.A. meeting. How is it getting out now Clarrie? 6PC hasn't been heard recently. How about some dope from down Wagin way Eric? We hear 6JN is having a spell in hospital. Hope everything is OK again now John and that we will hear the old rig on the air soon. Very pleased to see 6MW at the last W.I.A. meeting. He had a stack of DX cards to send too. How many times W.A.S. OM? 6CK is probably W.A.'s youngest Amateur on the air and puts out a really f.b. c.w. and phone signal on 7 Mc. Keep it up Col. Since 6RF has gone v.f.o. he can be heard chasing the DX c.c. How many countries did you say—was it 95 or 99? Haven't heard 6TW for some time now. What's cooking on the rig Bill?

6WD is at Northam. We expect to hear his phone signals any day from now. 6CD heard with a nice c.w. signal on 7 Mc. Good show Don and hope you can dodge the electrical interference out your way. 6OR has been heard testing again. We thought his rig was all ready to go. How about it Jack? 6AW was crawling into the mike the other evening on 14 Mc. What did you find there Dennis—was it a VK2 or a VK6? 6AY is keeping Merredin on the

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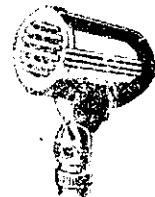
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map lately. What's happened to 6MU and 6DG Arthur?

6GD is getting through to some nice 28 Mc. DX of a morning. Horrie works shift work and has the band clear of all local QRM. You lucky so-and-so! 6MH made a flying visit to Perth from Wiluna. She made herself known to some of the local lads and we hope she will be able to attend a W.I.A. meeting next trip. 6JW is going on a trip to VK3 shortly and we expect to hear him on 14 and 28 Mc. from several VK3 stations; guess who, John? 6GA has four weeks' leave and will be chasing the DX during week days. Got that PY yet Bill? 6BB also on holidays, hopes to have the rig on 50 Mc. band.

None of the Geraldton men very active just now. 6CN gets on 7 Mc. now and then as does 6EL, but neither are as active as a month or two ago, mainly due to constructional work in progress. Same here at 6WZ. Bunny (6BJ) has at last made an appearance from a fixed abode! He must be the first Ham in history to make his debut mobile! But he's now operating the same portable from his shack and getting some good reports with a 300 ft. skywire whose real owner may (or may not) be a personality by name of George Rex! Bunny's also hard at it on the soldering-iron-and-pliers racket, getting the big band-switched, gang-tuned rig together. 7 Mc. seems to close up early these evenings so this, plus building work, plus the call of open fires makes 7 Mc. operating almost a has-been except during daylight week-end hours. A recent visitor to the town was "Skipper" GWS on business.

TASMANIA

The monthly general meeting of the W.I.A. (Tasmanian Division) was held on the first Wednesday in July and was well attended. After the business was concluded a discussion on modulation systems was started. TXA gave his views and described his modulation system, namely grid bias method. This was followed by 7AL with a description and account of the "bugs" he encountered in his attempt to use cathode modulation. In all, a pleasant evening was had and much was learned by junior, and possibly senior, members of the Institute.

Personally I haven't had very much time to listen or get around the boys during the last month or so. Heard 7OL and 7EJ battling the breeze on the subject of antennae a couple of nights ago. 7OL is a flat dweller and has no room for a decent skywire. That makes two of us Lyn. 7MY is to be heard now and again. How is the blackwood receiver case going Allen?

Heard the axis partners 7 Germany Japan a day or two ago; Jack has been off the air for a couple of years, building himself a house. Try a bit more carrier power under that modulation Jack. One loses track of the VK7s these days. The number of Ham stations in this fair State seems to have almost doubled over the past couple of years. Now what about some of you chaps who have call signs and whom one never hears. What about it fellows?

7NC is wrestling with a new receiver, going to be something hot so I hear. 7CT not very active, junior wrecks the gear during the week and Pop spends the week-end making it work again. Has to share the kitchen table with the XYL during re-building programmes. 7EJ has re-built and has some good phone. 7AF experimenting with grid modulation. 7BJ built and tamed a nice looking v.f.o.

NORTHERN ZONE

Had everything gone according to plan it would have been possible in these notes to have announced the formation of the Northern Zone, however the influenza epidemic laid low some of our members and it was decided to postpone our meeting for one week.

At a recent meeting it was considered that we had sufficient members to form this zone and a proposed set of rules, which had been drafted by the Tasmanian Council, were discussed and accepted except for one small amendment. Proposals were then made as to our zone boundaries, also the method of finance and these proposals were then forwarded to Hobart for ratification. Advice has since been received that these proposals were accepted by the last general meeting. Meetings will be held in Launceston on the second Friday night of each month at 8 p.m.

Reception on all bands during June reached a new low and most of our members gave up in disgust after the first week. Early in July, as these notes are being compiled, the bands appear to be returning to normal. 7RK got disgusted with conditions and gave up looking for new countries, however Ray's time off the air was well spent checking over and improving his receiver. 3ANL has now received the call sign 7DB and is being heard consistently on 7 and 14 Mc. 7DS is now using a v.f.o. and seems well satisfied with it. 7LZ is busy catching up on lost time and as yet hasn't given the new 28 Mc. beam a good try out.

The 144 Mc. gang are still active, however just what gear is being used I cannot say because every time I try to find out, something is either being built or dismantled.

Although the Nor-West Coast Hams do not actually come under this heading we like to record their doings whenever possible and it gives me great pleasure to welcome back 7OK to our ranks. "Pokey" is one of the old-timers who did some excellent work under extreme difficulties pre-war. (His method of generating his own power by a water-wheel was described in "Amateur Radio," December, 1936.) By the number of DX stations heard calling 7OK it appears as though "Pokey" is making up his lost time fast.

The next zone meeting will be held at Wills & Co's, Quadrant, on Friday, 13th August.

FIFTY AND UP

Noel 4BT paid us a visit (via 50 Mc.) on Friday midday, 9/7/48. Ye scribe switched on just before lunch and there was Noel S7 with QSB; he built up to S9 plus. Come noon, 3RR called test and CQ. Noel answered and same time 3BQ called CQ. Dicky hooked with Max and as it looked like Noel would be "in cold," so ye scribe busted in on Max via land line. Rag-chewing stopped pronto and Max had at least one contact with Noel, but the door shut before Richard could finish his QSO.

VK3 FIELD DAY

3DI at Mt. Eccles, 70 miles S.E. of Melbourne, used a 522, both transmitter and receiver. Power was from two vibrators which had a bad habit of not starting when wanted. Batteries also gave some trouble. Jim worked 3RR at Macrae, 3HZ at Warragul, 3VL at Red Hill, 3PG and 3HK near Melbourne. Jim's receiver was a bit new to him and this cost him a few contacts.

3VL was on portable rig and had some contacts. Not very strong in Melbourne but he worked 3HZ, 3DI, 3RR, 3BD, 3US (his XYL using home rig). Later Gwen operated portable and Rex worked from home rig. 3RR had his "portable" at Macrae, copied a lot on 50 Mc., but only 50 nails in his new house! 3VM and 3YJ had a couple of contacts mobile. Also much activity between fixed Ham stations on the band.

144 Mc. DIGEST

The highlight of the operations for June, was the setting up of a new one-way phone record for a long haul of 450 miles. This interesting work was performed by VK2VW while having a rag chew literally over the back fence to 2WJ, while up in VK4 this phone of Vaughan Wilson's was received by VK4FN for a couple of overs covering 16 minutes period. Report on conversation and times checked OK despite the swinging, surge and flutter on the signals and the bad fading. At peaks the strength was given up to S6 with good readability and the weather as mild, no cloud or wind.

The most interesting aspect of this set up was that 2VW, using a horizontal, was received on a vertical folded dipole and by cross polarisation points out the odd things that can be expected, for in this case it was a matter for the signals to travel along a water route and as we are given to understand, atmospheric ducts or funnels are responsible and are a common occurrence on any coastline.

Transmitter for 144 Mc. at 2VW was a SCR522 with a power of 20 watts input to the four element beam, while 4FN used a 522 receiver hitched to a ribbon fed 34 foot folded dipole.

To hand from Bruce Mann, comes news that 3OA, SCE and 3TL are interested in the band, while Bruce himself won't get a move on until the local products are in the clear. Around the city, the locals are still missing out on each other's calls and the trouble, apart from not having the beam in the right place at the right time, is receiver and converter trouble and this could be easily overcome by including in their equipment a super-regen as a stand-by.

There is the usual routine activity on 144 Mc. in VK4, with 4HR and 4RY perhaps doing the most towards keeping the band "hot." New arrival is 4KH, old King Henry down in Wynnum. The locals noticed a whale of a difference when Bill hoisted his antenna up from 20 to 40 feet in height. (Wynnum is some 10 or 12 miles from the City.)

Business in VK5 is slack and reports say that conditions are not up to the 166 Mc. standard. However 5JD, 5GF, 5NG and 5GA are keeping the ball rolling; the latter is raising the herbs to 100 watts.

VK6 activity on 144 Mc. included successful re-broadcasts of the ZS 7 Mc. news following the earlier attempt reported last month. We believe that any day now the air will be filled with signals on the 576 Mc. band. Go to it fellows, but make sure you are in the band and let 6LW have all the dope.

THE FRANKLIN SERIES PHASED ARRAY

Since the publication of the article on this array in the May, 1948, issue of the Magazine, many requests have been received for additional data on the best type of terminating resistor to use.

VK3KU makes the following suggestions, each of which will be quite satisfactory.

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2. A bank of carbon resistors in parallel, which are capable of dissipating 25% of the transmitter power.

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Owing to the reduced number of pages in the Magazine, it is regretted that some features have been condensed or omitted.—Editor.

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WANTED.—Loan of copy of "Amateur Radio" featuring 50 watt transmitter 6V6, 6P6, 809; published during 1938. Will return promptly. R. H. Hilder, Hunthawang Station, via Hillston, N.S.W.

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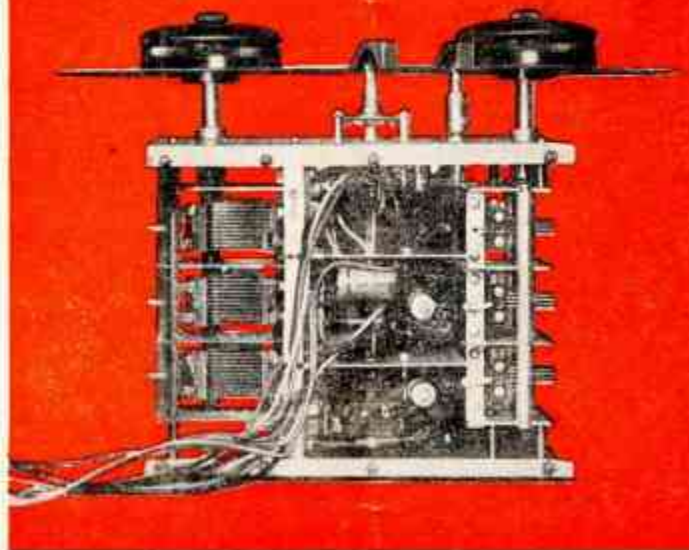
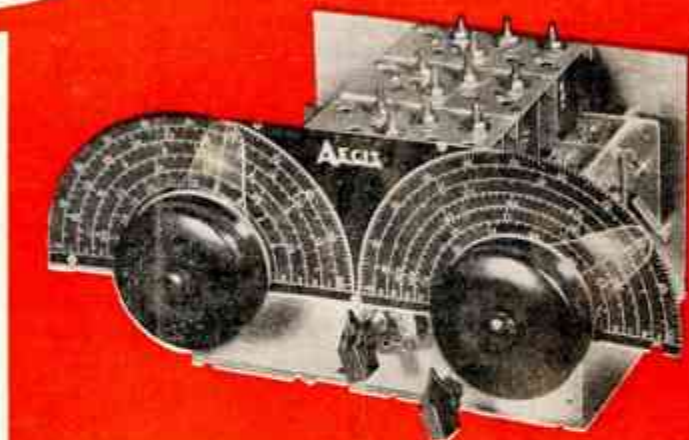
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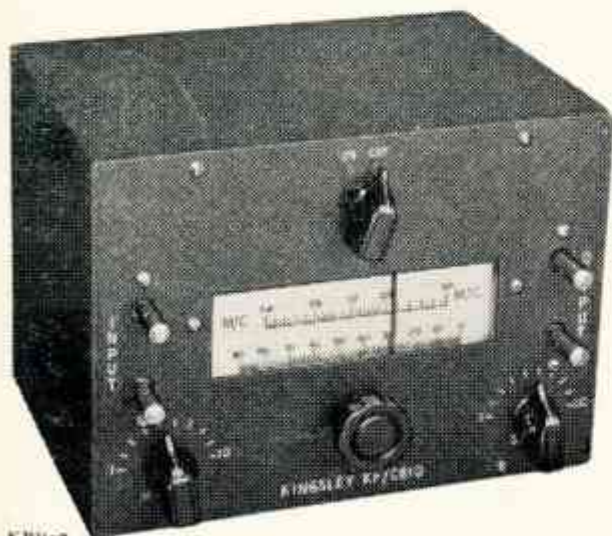
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SEPTEMBER 1948

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AMATEUR RADIO

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EDITORIAL



For centuries men have shown their appreciation for the pioneers of science and the arts, by honouring those who have advanced the world in which they lived.

In the sphere of radio, it is comparatively simple to look back over the past forty years, during which time the growth of this branch of science has been so rapid that its development has occurred within the memory of one generation.

Apart from the pioneers we rightly honour as the inventors of specific radio devices, there are those real experimenters who have contributed in no small measure to the development and application of radio in the life of the ordinary citizen.

Many experimenters have used their knowledge in the commercial world, and have, by their organizing genius and technical ability, done much to advance the radio industry in times of war and peace.

Among such illustrious names are those of the late H. K. LOVE, VK3KU, and F. W. MEDHURST, VK7AH, who have shown, by their practical interest in the radio world, the true qualities of pioneers; and, as active amateurs, have contributed much to the fraternal atmosphere of the amateur movement.

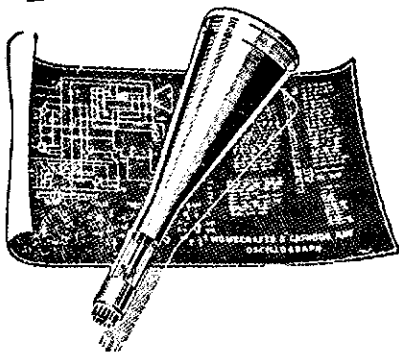
By their deaths amateur radio has lost two of the finest amateurs, whose kindly natures and cheerful personalities will never be forgotten by their fellow amateurs.

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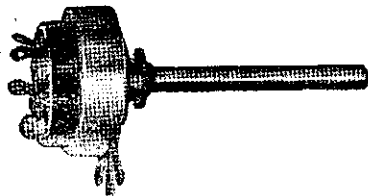
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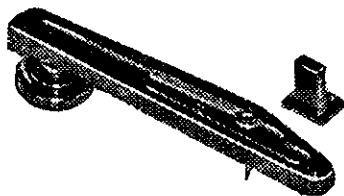
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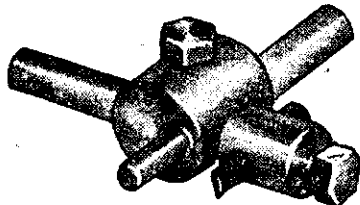
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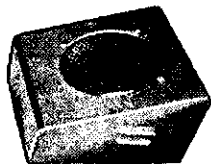
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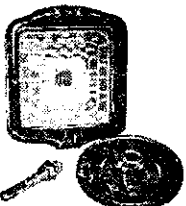
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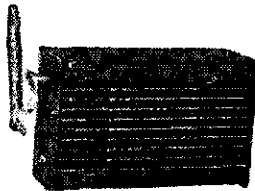
Chassis Hole Cutters. Adjustable Hole Cutters. Will cut Holes from 1 in. to 3 1/2 in. As illustrated, 16/7.



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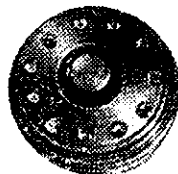
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Dials as illustrated for Portable or Small Mantel receivers, cut to 5/11



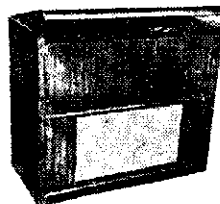
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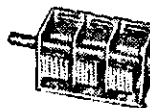
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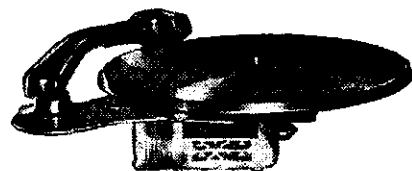
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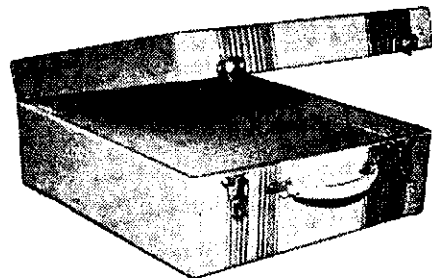
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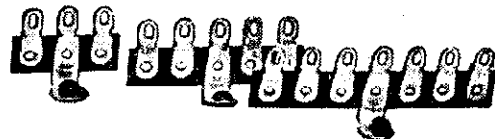
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Converting the TA12D for Amateur Use

BY J. C. DUNCAN*, VK3VZ

Are you one of those Hams who spend hours out in a cold shack, when you could be sitting alongside a warm fire, remote controlling the rig? If so the TA12D may be the answer to your problem, because this Transmitter can be band-switched and keyed from a remote position, and with the aid of a pre-amplifier, plate modulated to 100 watts input.

DESCRIPTION The Bendix TA12D is an aircraft transmitter built for low and medium frequencies, being the American counterpart of the English T1154/R1155.

The r.f. line-up consists of four separate v.f.o.'s., using 12SK7s, feeding an 807, which is a straight amplifier on the low frequency range (1200-1540 Kc.) and a doubler on three higher ranges. The v.f.o.'s. and doubler tank condensers are ganged on Channels 2, 3 and 4. The doubler feeds two parallel 807s in the final, running at 525 volts, 210 Ma.

A motor-tuned bandswitch of seven sections selects the required v.f.o., doubler tank, and p.a. tank circuits; these circuits being pre-tuned to the required frequency. Parallel feed is used to the plates of both the doubler and final stages as can be seen from the simplified circuit diagram, Fig. 1.

The combined p.a. tank circuit and antenna tuning network is one not often met with in Amateur equipment, and will be recognised as a pie-network. A three position switch, located on the rear of each variable inductance, enables a fixed capacity to be switched in parallel with the variable capacity, or across the output of the network (the position shown in Fig. 1). In addition series capacitors, shunted by resistances, can be placed in series with the aerial if desired. The latter condensers and switches are located under the horizontal insulated panel alongside the antenna relay. As the whole antenna network was designed to match a wide range of antenna lengths, the output circuit can be considerably simplified where we are feeding resonant antennae.

The modulator unit used with these transmitters is particularly interesting to the Amateur, as it contains quite a few components of value even if the unit is scrapped for the parts.

The modulator is mounted with the motor-generator unit, and consists of an output stage of two tetrodes (807s) in push pull, driven by a penthode amplifier (6F6). The latter stage is preceded by an a.f. oscillator (6N7), for m.c.w. when required. A separate three-stage intercom. amplifier is used to drive the 6F6 for phone.

No alterations have been made to the modulator unit yet, but it seems that the 6N7 stage could be rewired into a

two-stage amplifier without much difficulty. The motor generator requires an input of 24 volts at 14.8 amps., the output being 540 volts at 450 Ma. Starting solenoid, fuses and filter circuits are also incorporated in this unit. The negative 540 volt pole is earthed via a 60 ohm tapped resistance to provide bias for the p.a. and modulators. The latter section will be replaced by a suitable a.c. supply in the writer's case.

The outlet connections for the modulator-power supply unit, and r.f. section are as follows:—

Power Supply and Modulator.—

(1) +24 v., (2) -24 v., (3) Fil. out, (4) B+ in, (5) Fil. in, (6) Dyn. Relay, (7) B+ out, (8) Side Tone, (9) Audio to P.A. [Nos. 7 and 9 are secondary of Mod. Trans.], (10) M.C.W., (11) Bias to P.A. -24 v., (12) Microphone, (13) Emergency Microphone, (14) Mod. Relay, in Cathodes of 807s, (15) Blank, (16) Microphone, other end of primary winding to pin 12.

R.F. Unit Connections.—(1) Fil., (2) Ground, (3) Channel 1, (4) Channel 2, (5) Channel 3, (6) Channel 4, (7) Motor, (8) Audio Modulation, (9) Antenna Loading Relay on Channel 1 only, (10) B+ in, (11) B+ out, (12) Dyn. Start, (13) Antenna Relay, (14) -24 volts bias to P.A., (15) and (16) no connection.

Connection between pin 7 and any one of pins 3, 4, 5 and 6 will cause the band-switching motor to rotate to the Channel selected. A separate bank on the bandswitch is used to accomplish this. D.C. for the motor and clutch

relay is obtained from the 24 volt Fil. (pin 1). The motor and clutch relay are connected in series across the 24 volts, and are each of 12 volt rating.

The Antenna Relay carries out a number of functions, which are as follows:—

- (1) Keys the plate voltage of the transmitter on c.w. and m.c.w.
- (2) Switches the antenna from transmitter to receiver antenna post, and grounds the receiver connection when the transmitter is on.
- (3) Pair of contacts energises the dynamotor starting relay.

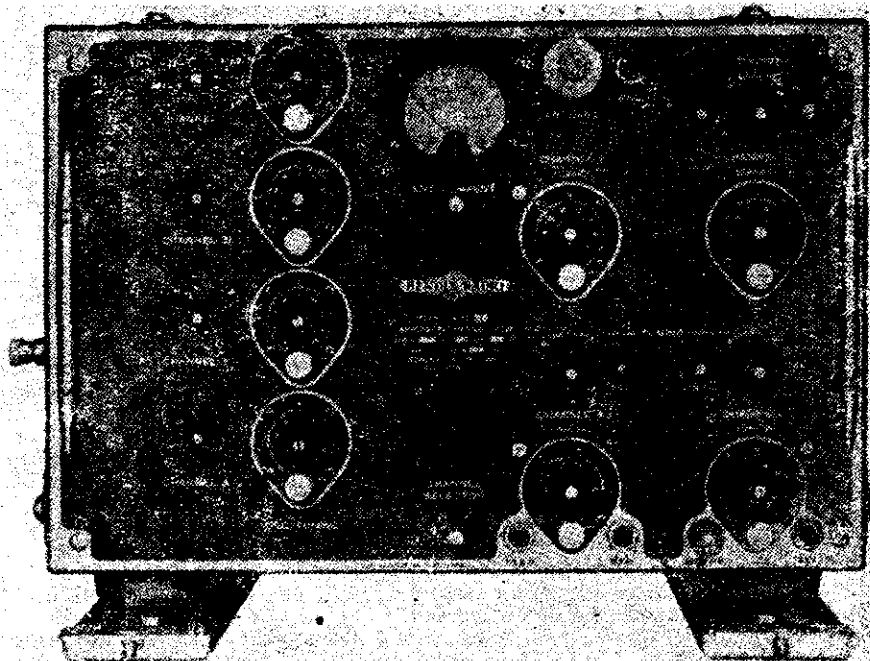
The antenna relay coil can be operated from the front panel of the transmitter by pressing button marked "Key." The bandswitching motor can be controlled from the transmitter by releasing the push button under the screwed cover, marked "Local."

The ranges of the TA12D are as follows:—

Channel 1—1200-1540 Kc.
2—2000-3400 Kc.
3—3,000-4,800 Kc.
4—4,300-7,000 Kc.

In the TA12C model, channel 3 covers 4,800-7,600 Kc., and channel 4 from 7,680 to 12,000 Kc.

The construction of the transmitter is exceedingly good, and very compact. The four v.f.o.'s. are located in a cast aluminium box, and are arranged vertically down the left hand side of the front panel, the box being divided into four sections by aluminium partitions. The shafts ganging the oscillator and doubler condensers project from the side



*Technical Editor; 23 Parkside Avenue, Balwyn, Victoria.

of the box, with the doubler condensers and associated coils, mounted on the outside.

The remainder of the front panel is taken up by the r.f. meter, p.a. variable inductance, and loading condensers. A small sub-chassis running across the rear of the unit carries the 807 doubler and pair of 807s in the p.a., from left to right respectively, followed by the antenna relay, and loading panel at the extreme right.

The motor and bandswitch are located under this sub-chassis, and can be hand controlled by a right angle drive from the front panel.

MODIFICATIONS The first step is to make the necessary alterations to the v.f.o.'s., and it is quite obvious that Channels 1 and 2 cannot be used, whilst Channel 3 will suit 3.5 to 3.8 Mc. without alteration. Channel 4 will only partly cover the 7 Mc. band, and to extend the range slightly, brass slugs were inserted in the v.f.o. and doubler coils, as will be described later.

The inspection cover is removed from the v.f.o.'s., and also the main end plate of the chassis. The power inlet plug which is secured to this plate is not removed, as it will be found that there is sufficient slack in the wiring to enable the plate to be swung around out of the way. Next the aluminium divisions between the v.f.o.'s. are removed. Some of the screws may be hard to get at, but a pair of pliers will remove the few hard ones by the brute force method.

Referring to Fig. 1, all wiring in heavy black lines is new, and it can be seen that all wiring except the filaments of Channel 1 must be removed. The variometer was left in position, but could be removed if desired. Put the octagonal brass pillar aside, which supports the condenser strip, as this is required later for the slug of Channel 4.

Filaments.—Channels 1, 2, 3 and 4 are now rewired for 12 volt operation. In Channels 1 and 2 the 12SK7s are in series, as are also the tubes in Channels 3 and 4. The filament wires can be traced easily, as they run through the rubber grummets located under each partition, and connect to the 24 volt feed-thru insulator in Channel 4. Small insulated anchor lugs are placed under the screws holding the valve sockets on Channels 2 and 4, and the active 24 volt leads tied to these lugs on their way to the valve sockets. The common lead between the filaments of Channels 3 and 4 is now cut sufficiently far from Channel 4 valve socket, so that the wire coming from Channel 4 can be earthed to a convenient point, and the remaining wire from Channel 3 socket can be connected to the anchor point on Channel 4 socket. Channels 1 and 2 are then treated similarly.

The procedure may sound complicated, but is simpler to have the one side of the filament on each valve grounded and the other side connected to the 24 volt inlet on Channel 4 (which will now be supplied with 12 volts a.c.), and to alter the wiring without disturb-

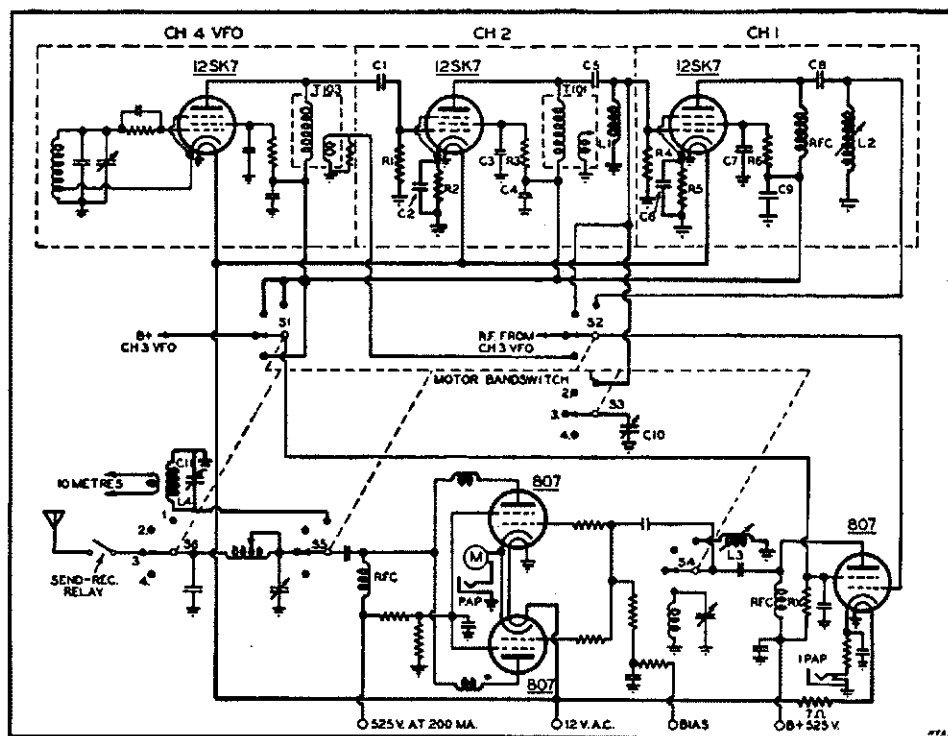


FIG 1

- Rx—12,000 ohms, changed to 2,500 ohms 20 watt.
- R1, R4—10,000 ohms, ½ watt.
- R2, R5—200 ohms, 1 watt.
- R3, R6—50,000 ohms, ½ watt.
- C1, C5, C8—100 pF. mica.
- C2, C3, C4, C6, C7, C9—0.01 uF. mica.
- C10—3-30 pF. air trimmer.
- C11—60 pF. double spaced variable.

- R.F.C.—R.F. Choke reused from Channel 1.
- L1— $\frac{5}{8}$ " diam. former, 30 turns, 26 s.w.g.
- L2— $\frac{7}{8}$ " diam. former, 11½ turns at 24 turns per inch.
- L3— $\frac{7}{8}$ " diam. former, 4½ turns, 22 s.w.g. at 14 turns per inch.
- L4 (28 Mc. p.a.)—2 turns $1\frac{1}{4}$ " diam., 14 s.w.g., 1" long.

ing the whole of the v.f.o. wiring in Channels 3 and 4, as would be necessary, if the existing wires were not reused.

The slug is now made for Channel 4 v.f.o., and the piece of brass rod, mentioned previously, is cut off $1\frac{1}{4}$ " from the screwed end. The corners are now rounded, until the slug will slip easily into the v.f.o. coil. The screw holding down the coil is removed and the brass slug is inserted in its place, the top of the slug being slotted to take a screwdriver. A similar length of rod, also rounded is slipped into the appropriate doubler coil on the outside of the box, and should be adjusted to give maximum drive to the p.a. When the correct point is found, the wax on the coil former is melted on the coil with a soldering iron, and when set will hold the slug securely in place. The reduction in the inductances by the addition of the brass slugs, is sufficient to reach 7.4 Mc. on Channel 4 v.f.o., thereby giving full coverage of the 40 metre band.

Channel 3 v.f.o. is unaltered, apart from the filaments as mentioned previously, so attention is now turned to Channel 2. This channel has to be altered from a v.f.o. to a doubler, and will be required to double from Channel 4 on 80 metres, to 40 metres. Remember that the 807 stage doubles to 40 metres from Channel 4 v.f.o. which is on 80 metres, when 40 metre

output is required. To make this clearer the table below is appended.

Channel	V.F.O. (Output)	807 Doubler	P.A. Output
3	160*	80*	80*
4	80	40	40
2	Doubler from Channel 4	40	20
1	Doubler from Channel 2	20	10

* Metres.

It can be seen from the table that when the bandswitch is in position 1, Channel 1 will be delivering 20 metres r.f. to the 807 doubler, which doubles to 10 metres.

Reverting to Channel 2. As can be seen from Fig. 1, a doubler circuit is used which requires the minimum of alterations in this stage, as the circuits of Channels 4, 3 and 2 are similar. The primary of T101 is used as an r.f. choke, and the secondary is unused. The v.f.o. inductance L1 is removed and rewound with 26 s.w.g., 30 turns, close wound. If it is desired to tune the doubler stage, the condenser which originally tuned the v.f.o. could be used. The turns on the coil would have to be reduced however. The doubler tank for the 807 stage, located on the outside of the box, must now be altered. To do this the aluminium cover enclosing the 807

tanks is removed, and the inductance on the back of Channel 2 removed and rewound with 15 turns of 20 s.w.g., close wound. The tank condenser being disconnected from this inductance. The object is to make the doubler tanks broadly resonant, and avoid additional tuning controls.

Channel 1 is now wired and in this case it is practically a rewire job, as this stage was variometer tuned previously, and not much can be reused, except one of the r.f. chokes. The inductance L2 was wound on a 3/4" polystyrene former and tuned with a brass slug, the turns and spacing being given in the coil table. There is no inductance for the 807 doubler on Channel 1, so it will be necessary to make one. This coil L3 in Fig. 1, is fixed under the rear sub-chassis of the transmitter, and connected to the vacant contact on the bandswitch bank, which switches the 807 doubler plate tanks. The coil data is given in the table to tune to 10 metres.

This completes the work to the v.f.o. section, but before replacing the end panel on the transmitter, some work has to be done to the 807 doubler socket. The first step is to change the 807s over to 12 volt operation. As originally wired the 24 volts comes from Pin 1 on the power socket, through the 7 ohm resistor nearby, thence through the 807 doubler, and two p.a. filaments in series. The wire running between the 807 doubler socket and one of the p.a. 807s is removed from the doubler socket and resoldered to the top end of the 7 ohm resistor. The filament pin on the 807

doubler socket, now vacated is connected to chassis. H.T. is now supplied to the two doublers when on Channels 4, 2 and 1 by connecting the appropriate contacts on the No. 2 bank of the bandswitch. To complete the alteration to the 24 volt d.c. circuit, it is necessary to remove the relay and motor wires which are connected to this circuit, and provide a separate inlet for their energisation.

With the aid of a continuity meter it will be found that a wire which is connected to the top of the 7 ohm resistor, connects to Channel 1 pin on the third bank of the bandswitch (reading from left to right, with the chassis inverted, rear view). The leads which connect to the antenna relay and motor also connect to this point. When the bandswitch is in Channel 1 position, the wiper on this bank supplies d.c. to pin No. 9 on the power inlet plug. This is to close a relay in the antenna unit loading coil, and remove a short on the coil when operation on the low frequency band is required.

The lead running from the 7 ohm resistor to the third bank of the switch, is disconnected at both ends, and the wires cut off short where they enter the wiring loom. The remaining wires on the bandswitch are removed, including the wiping contact going to Pin 9, and joined together and taped. This will have cleared the bank of the bandswitch, and made Pin 9 the d.c. inlet for the relay and motor.

A small 3-30 pF. air trimmer is now connected between Channel 1 position

on the bandswitch, bank 3 and ground, and Channel 2 position, on bank 1 connects to the wiper contact on bank 3. Reference to Fig. 1 will show the reason for this condenser, C10. When the 807 doubler grid is switched from Channel 2 to Channel 1, the capacity of the tube is removed from across L1, and to restore resonance C10 is inserted.

The last alterations necessary are the power amplifier, output circuits.

The loading coil, switches, and fixed condensers, located on and under the insulated panel, alongside the antenna relay, are now removed and any connections from the variable inductances which are disturbed, are connected to their appropriate feed-thru insulators, connecting them with the antenna output bank on the bandswitch. This small area of the sub-chassis can now be used for battery bias for the p.a. if it is not desired to use an external supply, or the area could be used to house the 10 metre antenna change over relay for a rotary beam.

The variometer in the p.a. output circuit is now removed, and the two pillars which supported it from the front panel are used to take a small metal panel, drilled to fit the one hole mounting of the new 10 metre tank condenser. The inductance for this tank L4 is wound of heavy gauge wire, or copper tubing, and is supported from the terminals of the condenser. A single turn link is coupled to the inductance, and taken to a co-axial outlet in any convenient position. The two parasitic chokes in the plate circuit of the 807s

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were found to be resonant on 10 metres, so were replaced with 9 turns of wire, $\frac{1}{4}$ " diameter. The wire was taken from the loading coil removed previously. With these chokes in position the p.a. was perfectly stable, and without any vices whatsoever, on all bands covered.

To supply correct operating voltages to the 12SK7 doublers, and 807 screen, the screen resistor to the 807 doubler had to be reduced to 2,500 ohms, due to the heavier current flowing.

To prevent excessive voltage being applied to the v.f.o. when operating on Channel 3, it is advisable to insert the 12,000 ohm resistor, removed from the 807 doubler screen, in the h.t. lead to the Channel 3 v.f.o. This resistance is not shown in the schematic drawing.

The final alteration is to replace the r.f. ammeter with a 250 Ma. meter, and connect in the cathode circuit of the p.a. The r.f. meter has too high a range for the normal 300 to 600 ohm lines and it was found much easier to tune and load the transmitter with the plate current meter. In the aircraft installation all tuning is done by plugging an external milliammeter into the p.a.p. and i.p.a.p. jacks on the front panel, which read power amplifier and doubler cathode currents, respectively.

These jacks are handy in our case as they can be used to key the transmitter, if preferred to the relay method.

POWER SUPPLIES Two power supplies are required for the r.f. section. A minor h.t. supply of 450 volts at 150 Ma., connected between Pin 11 and earth or Pin 10 through antenna relay, to supply the v.f.o.'s, and 807 doubler, and a main h.t. supply of 500 volts at 200 Ma. for the power amplifier stage, connected through the modulator transformer to Pin 8. A source of bias is required of about 25-30 volts, which is most easily obtained from a battery. 12 volts a.c. is required for the filaments.

ADJUSTMENT AND TUNING It is essential in adjusting a transmitter of this type to have a sensitive indicating wavemeter. A tuned circuit with a germanium or diode rectifier, and 0-500 microammeter is satisfactory. This must be calibrated, so that the right harmonic of the doubler tanks can be selected, and tuned for maximum output. A 10 Ma. meter is connected between Pin 14 and chassis, to indicate grid current to the p.a. during the first adjustments. Set the bandswitch to Channel 3, and apply minor h.t. The p.a. meter will indicate grid current when the antenna relay is held in the closed position. This relay should now be held closed with a piece of matchstick for all subsequent tests. The v.f.o. is now set to the centre of the 80 metre band, and main h.t. applied with no antenna connected. The final plate current should be about 240 Ma. Set the p.a. loading condenser to about 30 on the dial, and adjust the variable inductance until the plate current dips. The antenna can now be connected, and the inductance varied for dip. Increasing the capacity of the

loading condenser and restoring the p.a. to resonance dip at each step will increase the loading to the antenna. The correct operating current should be about 200 Ma. for Channels 4, 3 and 2, and about 180 Ma. for the 10 metre band. The 10 metre band being loaded by the link in the conventional manner, by adjusting the coupling of the link to its tank coil.

When Channel 3 is operating correctly, main h.t. is removed and the bandswitch set to Channel 4. Minor h.t. is applied and the p.a. grid meter checked for a reading. Adjust the slug, mentioned previously, in the 807 doubler plate tank for maximum p.a. drive. The Channel 4 v.f.o. being set to the middle of the band, the tuning procedure which applied to Channel 3 is carried out. It is important in both cases that the small switches located on the rear of the variable inductances of the appropriate p.a. tanks, be set to the position where the fixed condensers, also located on the inductances, are connected as shown in Fig. 1. Bands 3 and 4 are finally checked with the wavemeter to make sure they are on 80 and 40 metres respectively.

Turn the bandswitch to Channel 2 and apply minor h.t. Couple the wavemeter to L1, and insert a piece of brass rod in the coil, if the indication of resonance on the sensitive wavemeter shows an increase on 40 metres, as the rod is inserted, the inductance is too large, and the turns of the coil must be spread slightly. By this method the doubler is tuned, but it must be stressed that a calibrated wavemeter must be used because it is quite easy to tune the doubler to 10.5 Mc. by getting the wrong harmonic. The spacing of the turns on the 807 tank at the rear of Channel 2 can now be varied for maximum grid drive, which should be about 8 Ma. when properly adjusted. The p.a. plate circuits can now be adjusted as previously described, the output being on the 20 metre band.

With the minor h.t. applied and the bandswitch on Channel 1, the doubler in this compartment should now be adjusted. It will be necessary to insert a meter in the grid circuit of this 12SK7 and adjust C10 for maximum drive. The meter is now removed, the wavemeter tuned to 20 metres and coupled to L2. The slug is adjusted for resonance on 20 metres, and if the peak is not obtainable within the range of the slug, the turns on the coil are altered accordingly. Couple the wavemeter to the new inductance (L3) in the 807 doubler plate circuit, located under the chassis, and adjust the slug for resonance on 10 metres, the grid drive to the p.a. should be 5-6 Ma. Main h.t. can now be applied and the p.a. tank condenser tuned to resonance. Swinging the bandswitch through positions 1, 2, 3 and 4 should give outputs on 10, 20, 80 and 40 metres respectively, as indicated on the wavemeter when held near the antenna terminal and the 10 metre coil.

RELAY SUPPLIES The 24 volts required for the motor tuning and antenna relay can be obtained by means of a suitable metal rectifier and step down transformer. 12 volt operation could be obtained for the relays, if the clutch relay and motor connections were re-arranged for parallel operation on the terminal board of the clutch relay coil. The antenna change-over relay would have to be rewound however. Pin 9 on the power inlet plug is now d.c. input for relays and motor, and antenna relay is keyed between Pin 13 and chassis.

It is hoped to described the conversion of the modulator unit in a later article.

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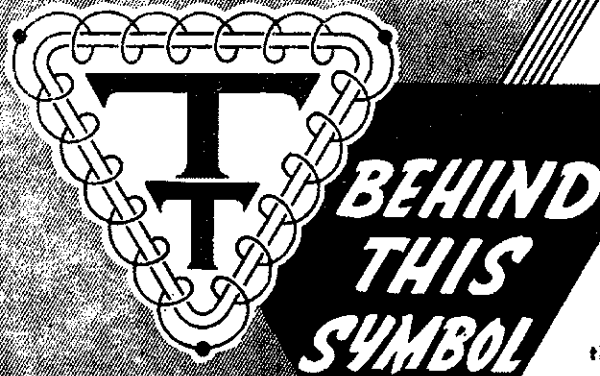
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VK/ZL INTERNATIONAL DX CONTEST

RECEIVING CONTEST

The New Zealand Association of Radio Transmitters, in conjunction with the Wireless Institute of Australia, has much pleasure in announcing another post-war "first"—the 1948 VK/ZL International DX Contest.

OBJECTS.—For the world to contact all VK and ZL call areas and vice versa.

WHEN.—1201 G.M.T. 1st October to 1159 G.M.T. 3rd October—C.W. operation.

1201 G.M.T. 8th October to 1159 G.M.T. 10th October—Phone operation.

1201 G.M.T. 15th October to 1159 G.M.T. 17th October—C.W. operation.

1201 G.M.T. 22nd October to 1159 G.M.T. 24th October—Phone operation.

DURATION.—(a) For contest purposes, ZL and VK stations will limit their period of operation to any consecutive 24 hours' period on each week-end—i.e. within the times given above.

(b) Stations in other countries may contact ZL and VK stations for contest purposes at any time during the operating periods as defined above.

RULES

1. There shall be three main sections to the contest.

(a) Transmitting C.W.

(b) Transmitting Phone.

(c) Receiving (Phone and C.W.).

2. Contestants may compete in the "open" events (i.e. all band) or on one or more individual bands by submitting a log for each individual band.

3. The contest is open to all licensed transmitting Amateurs and receiving stations in any part of the world. No prior entry need be made. Marine, mobile and expedition stations are not permitted to enter for the contest.

4. C.W. will be used for the first and third week-ends and phone for the second and fourth week-ends. Stations entering for both c.w. and phone sections must submit separate logs for both phone and c.w. (see rule 12).

5. All amateur frequency bands may be used.

6. Only one contact per band per week-end with any one station for committed to operate any one station under test purposes is permitted.

7. Only one licensed Amateur is per the owner's call sign. Should two or more operators operate any particular station, each will be considered a competitor and must submit a separate log under his own call sign.

8. Each participant will assign himself a serial number of three figures. When two or more operators work from the one station (rule 7), each will assign himself a different serial number. This serial number must remain unaltered for phone and c.w. contacts.

9. Serial numbers to be exchanged during contest QSOs will be as for the A.R.R.L. DX Contest, i.e. the personal three figure cypher will be preceded by the signal report, making a six figure serial for c.w. and a five figure serial for phone.

10. **SCORING.**—Both the VK/ZL station and the station in the remote locality receive ONE point when a serial number is acknowledged by the station in the remote locality. Each operator adds TWO points more when a serial number to the VK/ZL station is acknowledged.

11. **MULTIPLIERS.**—(a) VK/ZL stations. For each band the multiplier will be the number of countries worked on that band except that for the U.S.A. each call area will be a multiplier. A.R.R.L. countries list will be used.

(b) Other Stations. For each band the multiplier will be the number of VK/ZL districts worked on that band. These are VK2, 3, 4, 5, 6, 7, 9; ZL1, 2, 3, 4.

12. **LOGS.**—(a) Logs must show (in this order) Date, Time (G.M.T.), Band of Operation, Call of Station Worked, Serial Number Sent, Serial Number Received, Points Claimed.

(b) Each new country (or VK/ZL call area) contacted must be underlined in RED ink or pencil.

(c) A separate log must be submitted for each band. For each band a summary must be given showing (a) list of countries (VK/ZL call areas) worked; (b) total number of contacts made on that band; (c) Points claimed for that band.

(d) Summary sheet to show: Call Sign of Station, Name and Address of Operator, Whether Entry is for C.W. or Phone and whether for a single band or all band operation, Total Points Claimed, and finally a declaration that all the contest rules and regulations for Amateur Radio in your particular country have been observed and that the log is correct and true to the best of your belief.

13. The judges reserve the right to disqualify any station for:—

(a) Consistent tone reports under T8;

(b) Continuing key-clicks;

(c) Phone splatter or excessive modulation;

(d) Off frequency operation.

14. The Executive Council of the N.Z.A.R.T. shall be the sole adjudicators and their ruling will be binding in the case of any dispute.

15. Overseas stations should call CQ VK/ZL, and VK/ZL stations should call CQ DX Test.

16. **AWARDS.**—Certificates will be awarded to the station returning the highest score from each participating country (each call area in the U.S.A.). There will be no world winner, VK and ZL awards, etc., will be announced by the W.I.A. and N.Z.A.R.T. respectively.

17. Entries from VK and ZL stations must reach N.Z.A.R.T., P.O. Box 489, Wellington, New Zealand, by 26th November, 1948. Overseas logs should reach that address by 14th January, 1949. Envelopes must be clearly marked "VK/ZL Contest."

1. The rules for the receiving contest are the same as for the transmitting contest, but is open to members of any Short Wave Listeners' Society in the world. No transmitting station is permitted to compete in the receiving contest too.

2. The contest times and logging of stations once in each band per week-end are subject to the same rules as for the transmitting contest.

3. To count for points, the call sign of the station being called, and the strength and tone of the calling station, together with the serial number sent by the calling station, must be entered in the log. Three points will be claimed for each such entry in the log.

4. It is not sufficient to log a station calling CQ Contest.

5. VK receiving stations cannot log any VK stations and ZL receiving stations cannot log any ZL station—only overseas stations but VKs may log ZLs and vice versa. Overseas stations will enter only VK and ZL stations heard operating in the Contest.

6. The awards for the receiving contest will be similar to those in the transmitting contest.

7. Receiving logs are to be similar to transmitting logs.

QUESTIONS AND ANSWERS

A.5.—From VK3NB:—

P Band 225-390 Mc.

L Band 390-1,550 Mc.

S Band 1,550-5,200 Mc.

X Band 5,200-11,000 Mc.

K Band 11,000-33,000 Mc.

but no information on G or I Band. Can anyone help?

NEW QUESTIONS

Q.6.—VK3PW would like to know how and why the constant voltage transformers, advertised on p. 112 of the 1947 A.R.R.L. Handbook, work? In particular he is interested in the 500 v.a. size.

Q.7.—What is the best way to control the gain of an r.f. sharp cut-off tube such as a 6AG5 or 6AK5? Is varying the grid bias satisfactory?

PARASITIC

We regret that an error appeared in the article "BC696 and BC457 Transmitters as v.f.o." in the May issue.

The removal of R70 as instructed will result in no indication from the magic eye at crystal resonance. Correct operation can be restored by substituting for R70, a resistance between the oscillator supply and cathode of the magic eye tube, of suitable value to restore the correct bias to that tube. For m.o. h.t. supply of 105 volts, this resistor can be 25,000 to 30,000 ohms, or proportionately higher, for higher oscillator plate voltages.

FEDERAL, QSL and DIVISIONAL NOTES



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FEDERAL

DX C.C. LISTING

PHONE	NIJ	O.W.
VK3CN (8)	125	
VK3BZ (14)	113	
VK3EK (10)	112	
VK3VW (12)	111	
VK2EO (7)	103	
VK2QL (18)	101	
OPEN		
VK2DI (2)	135	
VE3BZ (5)	133	
VY3HG (4)	121	
VE3MC (8)	117	
VK6RU (11)	112	
VK3JE (18)	110	
VK3KX (1)	108	
VY2YL (17)	106	
VK4EL (16)	104	
VK4HR (9)	102	
VK2AOX (8)	100	
VK2AHA (15)	100	

Figures in parenthesis indicate the membership number to DX C.C.

COMMERCIAL STATIONS

An increasing number of commercial telegraphy stations are appearing on our Amateur frequency bands. As previously pointed out in these notes, it behoves every amateur hearing one of these pirates to log the transmission with any details such as time, frequency, signal report, etc., and for those using beams the approximate direction of the offending signal. Send these details along to the Federal Secretary as soon as possible, and help us to help you rid the bands of these "pirates."

MORSE CODE PRACTICE TRANSMISSIONS

We are pleased to announce that permission has been granted to all WI stations to conduct weekly Morse code practices over the air on the 3.5 Mc. band. Each transmission will be for a duration of 30 minutes once a week from each WI station. A roster of transmissions is being arranged so that no two transmissions are on at the same time, and all transmissions will take place on the same frequency. We feel that these transmissions will fill a long-needed want especially among our country members and particularly for those many potential amateurs we are so anxious to foster. All speeds will be catered for so that even some of our best c.w. and phone men may also derive some benefit from the practices. As soon as details are finalised, the station rosters will appear in these notes.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

PHONETIC ALPHABET

As a result of a motion at the last Federal Convention, it was recommended that all Australian Amateurs adopt the standard phonetic alphabet as shown in the P.M.G.'s Handbook. Judging by some of the queer phonetics used by some stations it is indeed appropriate that this matter receive the earnest attention and adoption by all Amateurs using phone.

AUSTRALIAN AMATEUR CALL SIGNS

NOTE.—VK9 calls are being issued to Norfolk Island from now on.

- New Issues:
- VK2AD—D. G. Rogers, 28 Ireland Ave., Mayfield, West Newcastle.
 - 2AKG—P. H. Foxcroft, 23 Lansdowne St., Armcliffe.
 - 2AKY—S. J. K. Adhead, 63 Thorne St., Wagga.
 - 2AWA—N. Smith, 29 Vine St., Mayfield, Newcastle.
 - EQK—R. B. McPhee, Lord Howe Island.
 - 2RJ—J. C. Bray, 1 Wyalong St., Willoughby.
 - 2XH—H. A. Perkins, 21 Stratford St., Cammeroy.
 - VK3AJD—A. J. Egan, 54 Windella Ave., East Kew.
 - 3ARE—W. J. Hehir, Kent Road, Hamilton (mobile).
 - 3ASW—J. S. Walker, 21 Nelson St., Coburg.
 - 3ATM—A. T. Morton, 1 Smith St., St. Kilda.
 - 3AUT—W. H. Ross, portable of VK3UT.
 - 3AWM—W. R. Moffatt, 187 Stewart St., East Brunswick.
 - 3TK—J. F. McCrohan, 15 Rockbeare Gve., Ivanhoe.
 - VK4KD—V. R. Berks, Blackall St., Thursday Island.
 - 4KR—C. C. E. Christensen, 71 Malcolmson St., North Mackay.
 - VK5JW—J. B. Watson, 32 Glenhuntly St., Woodville.
 - VK6GK—D. R. Annealey, 22 Teague St., Victoria Park.
 - 6GR—D. A. Miles, 109 Mathieson Rd., Belmont.
 - 6ZX—E. E. Grey, 74 Thomas St., West Perth.
 - VK7FM—T. F. Moore, 62 Auguston Rd., Lenah Valley, Tasmania.
- Alterations:
- VK2ADF—J. T. Greenhalgh, Flat 95, No. 1 Hostel, St. Marys.
 - 2AET—A. Hayvatt, 23 Archbold Rd., Rosehill.
 - 2AJE—B. L. Mills, 60 Albert St., Leichhardt.
 - 2AJJ—V. T. Egan, 345 Bourke St., Darlinghurst.
 - 2AMB (formerly 2NB)—L. Baxter, 31, Murdoch St., Cremorne.
 - 2AVT (formerly 2AIT)—V. E. Tierney, Miller Rd., Guildford.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 838J, G.P.O., Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor: F. H. Shannon, VK4SN, Minden, via Rosewood.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth. Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

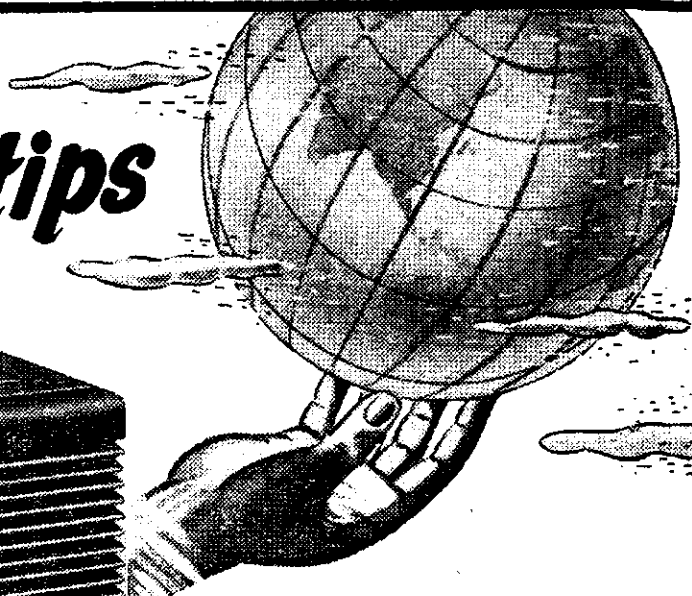
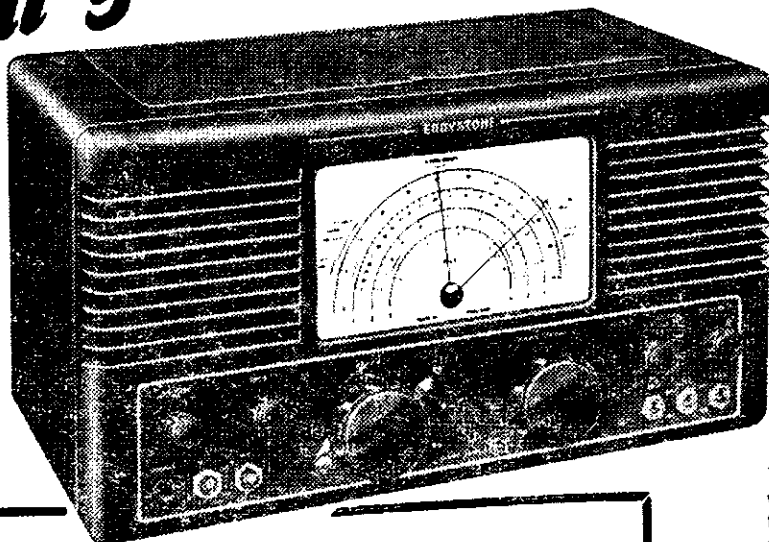
Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

- 2AWY (formerly 2OX)—J. J. Mount, 50 Potts St., Ryde.
- 2CX—J. T. Evans, Nelsons Bay, via Newcastle.
- 2EH—E. P. Hodgkins, Coast Rd., Avoca Beach via Gosford.
- 2FK—T. W. Kinsella, 115 Alice St., Sans Souci.
- 2FN—F. G. Noble, Hood St., Coles Harbour Jetty.
- 2FW—J. N. Teehan, c/o. 66 Manning Rd., Double Bay.
- 2GD—K. H. Hatton, 21 Bulkira Rd., Epping.
- 2MB—H. J. Banks, 111 Hewlett St., Waverley.
- 2MJ—A. J. T. Crisp, 558 Homer St., Earlwood.
- 2MR (formerly 2ANN)—L. H. Vale, 12 Quest Ave., Miranda.
- 2OX—J. Stewart, 53 Burwood Rd., Balmore.
- 2UL—R. W. Synner-Lyons, c/o. P.O., Tabulam.
- 2UR—C. J. Henry, 45 Military Rd., Neutral Bay.
- 2VN—V. L. Shillecock, c/o. Canberra Broadcasters, Civic Centre, A.C.T.
- 2XC—L. W. Cranch, 47 Russell St., Vaucluse.
- 2XO—J. M. Retallick, Clarence River Council, Sub-Station, Raleigh.
- 2XW—A. J. Voysey, 23 Victoria St., Burwood.
- 2YT—G. R. Woodward, Box 20 R.M.B., Kirkconnell, via Rydal.
- VK3ACU (formerly 5CU)—C. G. Gurr, 40 Mathoura Rd., Toorak.
- 3AJJ (formerly 2AJJ)—V. T. Egan, 345 Bourke St., Melbourne.
- 3AJN—J. Hill, 5 Morris St., North Balwyn.
- 3APW (formerly 2APW)—R. M. E. Rees, 10 Craigmore St., Darling.
- 3AYV—H. G. Wohlers, portable and mobile of 3YV.
- 3ET—H. J. Asmus, Telegraphist, C.T.O., Melbourne.
- 3FE—H. S. Constable, 19 Parkers Rd., Parkdale.
- 3GT—G. A. Scott, 72 Carlisle St., St. Kilda.
- 3IU—T. J. Coakley, Sandilands Lodge, 71 Queens Rd., Melbourne.
- 3JO—R. W. Amos, 23 Bealiba Rd., Caulfield.
- 3JQ—T. L. Lang, 270 Canterbury Rd., Surrey Hills.
- 3NI—N. R. Boase, 7 Park Ave., Glenhuntly.
- 3QK—E. H. Jenkins, 415 St. Kilda St., Elwood.
- 3QY—C. W. Richardson, 298 Charman Rd., Cheltenham.
- 3UN—J. H. Evans, 30 Clarence St., Elsternwick.
- 3YV—P. E. Egan, 1 Boola Cres., Yallourn.
- 3XO—L. A. Paul, 340 Rathmings St., Fairfield.
- 3ZK—J. T. Stevens, Beverford (Box 263, Swan Hill).
- VK4AD—E. P. Black, c/o 24 Princess St., East Bundaberg.

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 3CX—C. Quin, 67 Holland St., Wembley, W.A.
 VK7EB (formerly 3ANL)—E. L. Blackmore, 17 Oswald St., Invermay.
 7JB (formerly 3AJB)—J. C. Batchler, 12 Beechworth Rd., Lower Sandy Bay.
 VK9HI—L. C. Raebel, Murray Barracks, Port Moresby, Papua, T.P.N.G.
 9QK (formerly 2QK)—E. C. Roberts, c/o. Government Aerodrome, Lae.

SILENT KEY

"POP" MEDHURST VK7AH

At "Cranleigh," Beach Road, Sandy Bay, about noon on 4th August, 1948, there ended a life that had had a meritorious innings when Mr. F. W. Medhurst, VK7AH, Tasmania's Grand Old Man of Radio and "Pop" to the gang, passed on. In his 81st year he died, as he had lived, very peacefully after a short illness of less than a week. Regret was felt in all quarters as the news spread and at the Divisional meeting on the same night much was said and more thought given than could be expressed here. He was honoured by all standing in a two minutes' silence.

Much of the following was written some ten years ago but we feel it will stand repeating. VK7AH was English by birth, being born in Cobham, Surrey, England, in 1867. He was educated at Nelson College, Lea, Kent, and at Surrey County School, Cranleigh, then at the Electrical Engineering School, London Bridge. He entered the Cobham Post Office which consisted also of printing works, chemist and drug-gist and stationery business, at the age of 14 years as a telegraphist and general postal assistant under his father, where he worked for eight years. During this period many leisure hours were spent with the Telegraph Battalion, Royal Engineers, where he gained a lot of his early experience, in addition he had two years with the Second Royal West Surrey Regiment, Volunteer Battery Signallers.

In 1889 he left England for Australia and arriving in Melbourne he joined the temporary staff of the G.P.O. Later he transferred to Flinders Street and Prince's Bridge railway stations as operator and telegraphist, thus he spent his first two years in Australia. Coming to Tasmania in 1891 he joined the Telegraph Department of the P.M.G.'s Department as operator and the same year transferred to the electrical fitting staff of the Department for telephone and telegraph work.



During 1900-1901, in conjunction with Mr. Hallam, then W/T Engineer for the Department, he carried out experiments and in 1901, as Mr. Hallam's assistant, obtained success by contacting and maintaining telegraphic communication with H.M.S. St. George which, with H.M.S. Juno, accompanied the Ophir in which the Duke of York visited Tasmania. They constructed the land station personally at the then defence battery on One Tree Point at the Long Beach Light, known as "Blinking Billy," where operating was continuous and very highly commended by the officers concerned.

The equipment consisted of two spark coil transmitters 12 and 14 inches respectively with adjustable brass balls spark gaps and tuned with a tapped inductance, power being derived from Plante accumulators. The receiver was a meagre, coherer detector made with nickel and iron filings in a glass tube with two silver disc electrodes, one in either end. These detectors were also duplicated so that the filings could be replaced as required, for in use oxidation was rapid necessitating frequent changing. For de-cohering an electric bell was used as a rapper in one case while the other was mounted on the armature of a sounder relay which operated a Siemen's morse recorder.

Testing coherers for activity was done with a miniature Whimshurst Machine whose spark discharge was registered on an active coherer by placing its spark gap close to receiver aerial. This Whimshurst Machine was also used as a gas lighter. The aerial was vertical end-fed, using a plate immersed in the river as an earth. 90 feet of scaffold poles lashed together

was erected as a support pole. A photograph of this equipment remains as a cherished treasure. The set-up was operated from a low roofed room normally used for oil storage and much concern was felt about making it presentable when the visitors expressed a desire to see this "so wonderful" land station.

An extensive military career that commenced in England was continued in Tasmania as follows: After two years with Submarine Mining Co. of the Engineers, he transferred to Mounted Infantry here to be known as "Tommy Atkins" to his intimate associates. After eight years he became Officer in Command of Signallers in Tasmania, an office which he held until he reached the retiring age after World War I.

Entering the business field in 1912 he originated the firm of Medhurst and Sons, radio and electrical, and took an active part in its conduct until recent years when indifferent health caused an easing up. Even then he had his own office at which he attended whenever possible. When originated the business specialised in radio, also one of its earlier ventures was the installation of the first electric lighting equipment in Hobart.

Radio, apart from all other interests, was his foremost hobby and to those who expressed interest he could reminisce for hours on how many ingenious ideas were thought out and how they were made to work and a variety of expedients used to do the job of the now easy to get parts. Such enthusiasm is fast waning. His reflections went back to the days when "Watty"—7DX (Trevor Watkins, originally 7AA)—and he spent their endless hours closely associated with experimenting, back when such things as licences were non-existent, how they mapped out circuits and built them up to see them work and how they tested this equipment one with the other always looking for something better.

He was a member of the W.I.A. from its very early days in VK7; was elected a Life Member in 1925. He was one who hated to see discord and always to the fore, in case anything might upset the serenity, as peace maker. For years he was President of the Tasmanian Division until his health, about 1935, forced a steady up. He was Patron for many years prior to his death. He was an active member of the Hobart Radio Research Club in the earlier days of radio.

Prominent amongst "Pop's" activities was the Medhurst patent field telephone which found a very wide use in military activities.

A peep into his once-time shack makes one's eyes open, for there, as an accumulation of the years, is revealed a collection that almost constitutes a museum in itself. Just to enumerate a few items: an original Western Electric valve receiver, beautifully built in stage units, each with a polished wood cabinet and "breadboard" mounted; purchase price \$150. Another, an original De Forest of about the same era. (Crystal sets in those days cost about \$13 each.) There is one of Edison's original talking machines, built up on a lyre shaped base with record drum mounted across its extremities and a horn magnifier set up on the opposite end of base, reproduction apparently was by vibrations set up in the base and transferred via the horn. Then another Edison machine of the electric variety with automatic record changing, five drums being mounted around a common centre, each drum coming up into playing position as other finished. The drive was from a 2 volt motor with ring type armature and designed to operate from a Bichromate Cell.

Galvanometers, microphones of various shapes and sizes, early day electric lamps, a French Barthon Ader field exchange, a two station heliograph complete, to say nothing of a couple of transmitters from the days of activity, etc., etc.! To one whose life was devoted so much to radio he found much pleasure in being able to converse with his then ageing mother in England via the Radio Phone some ten years ago on her 91st birthday, she died at the age of 92.

To all this we must add that, with Mrs. Medhurst, who had by some years predeceased him, he had conducted a happy home life and reared a most creditable family. One can be forgiven for wondering just how, after reading so far, but the fact remains.

He leaves behind him a daughter, Miss Edith, and four sons, Messrs. Rowland, Harry, Phillip and Edney, to whom we offer our deepest sympathy with a special thought for Miss Medhurst who stood by our Grand Old Man so valiantly and untiringly to the end.

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FEDERAL QSL BUREAU

RAY JONES (VK3RJ), MANAGER

PLEASE DO NOT ATTEMPT TO QSL TA3FAS OF ANKARA, TURKEY, DIRECT. BY DOING SO you will endanger his livelihood and most certainly close down the only Amateur Station in that country. No Amateurs are as yet licensed by the Turkish authorities but TA3FAS believes that later on the position may be altered and he hopes to be the first licence issued. Until then any cards or letters addressed to Amateur Radio TA3FAS will cause him trouble and may ultimately mean the withholding of amateur licences in Turkey. We don't wish to endanger our only contact with that country do we? A few facts about the station and the man behind it may be of interest. TA3FAS was in Australia for a period during the last war and can only manage to squeeze in a few contacts with Amateurs between his normal army traffic schedules so he is therefore unable to make schedules either phone or c.w., but when idle and conditions permit he is pleased to make all Amateur contacts possible, and the best time for VK contacts is between 0430/0530 G.M.T., especially when W conditions are poor for him. He is running 1 k.w. to p.p. 250THs modulated class B with 810s. VK contacts are only possible the long way round owing to his beam being unidirectional and normally in a direction other than VK. Owing to cost considerations he is unable to QSL direct but will definitely QSL all contacts. SEND YOUR CARD TO VK2AHA, HAROLD WHYTE, 82 WARATAH ST. MAXFIELD, NEWCASTLE, N.S.W. with whom TA3FAS runs regular schedules and who will QSP all cards promptly. Many thanks for the dope Harold.

Alec Goldie (VK2TG) passes on the information that the working of ten (10) W5 stations located in Corpus Christi entitles any VK station to a special certificate, but no information is given whether pre-war contacts are eligible or to whom application is made for the award.

Speaking of certificates, another one that may be earned is that of the KHS Rag-Chewers Club who make an award for five (5) contacts with its club members.

VR2AZ/VR1 is now VR1B with QTH on Canton Island, Phoenix Group.

A letter is to hand from Major Chakravarti (VU2BU), dated 14th July, advising of the formation of a new Radio Club for India, with official call sign of VU2MU. The QTH of the club, which will handle QSLs for the All India, is: The Amateur Radio Club, P.O. Mhow, Central India.

Geo Chiffey (M13ZL, ex-1624, ex-M162J) writes, under date of 7th June, advising that M13ZL has closed down as he expected to sail for England on 27th June. He desires all QSL managers to send any cards for him either via R.S.G.B. or to his home QTH which is: 29 Elm Park, Stanmore, Middlesex, England. His home call sign is G3ZL. Happy landing George, and all B.E.T.U. and VK DX contest participants will miss that good signal and easy contact in Eritrea.

The A.R.I. advises of a change of QTH for their QSL Bureau. The new address as deciphered from a weak rubber stamp impression is: A.R.I. QSL Bureau, Box 80, Roma, Italy.

Bert Knowles (VE3QB), the QSL manager for VE3, writes as follows: "The Ontario phone net have sent some 68 food parcels to Great Britain and other clubs and groups are doing the same. I use the outgoing QSL despatches to members to seek donations for this object and got this idea from reading the VK report in 'Amateur Radio,' and with the help of Ham Whyte (VE3BWY, ex-G6WY) we started the idea in Canada of 'Ham from Hams to Hams.'"

QSL Bureau additions: VQ2DH, QSL Officer, P.O. Box 119, Livingstone, Northern Rhodesia; and VQ4HRP, Radio Club of East Africa, Box 1313, Nairobi, Kenya Colony.

NEW SOUTH WALES

On Friday, 23rd July, with an attendance of about 100 members the monthly meeting was held at Science House, Sydney. After routine matters, Mr. Ross Treharne (VK2IQ), the lecturer for the evening, gave an interesting and instructive talk on "Calculation of Ionospheric Conditions" and showed three films. Two illustrated the operation of the cathode ray tubes and their relation to ionospheric recordings and the other on atomic energy. Owing to the great interest aroused and the number of questions asked, the members unanimously agreed to ask Mr. Treharne to devote another lecture on the subject in the near future. It reflects credit on Ross that such an enjoyable lecture could be given at such short notice. Bill Hicks (VK2ANH) was to have given a lecture on "Industrial Electronics" but two days prior to the meeting he became ill and Ross was asked to fill the breach. Bill is now to give his lecture at the September meeting. The metropolitan area has been divided into zones on the lines of the country zones, so ably managed by 2HZ.

2AEB will report doings in the Western Suburbs, 2AM the North Shore, 2AIG St. George area, 2AX the Eastern Suburbs, and 2YW South Sydney. In addition 2AOX has been given the job of looking after the DX hounds both metropolitan and country.

DX SECTION

As this is my first effort I appeal to the "VK2 DX gang" to make suggestions and forward any information of value and interest to the DX fraternity to No. 12 Schakel Ave., Kingsgrove, to reach me not later than the 5th of each month. Such items as stations heard or worked with time, frequency, QTH, QRI, etc., will make this section of interest to all. Country members are included so how about it you fellows "out back"? Let's hear from you.

2S Mc. has been poor this month so 14 Mc. will receive the most attention. One of the more elusive, much sort after stations, AC4YN, put in an appearance at approx. 2200 hours on 26th July, calling a couple of Ws on sked. As no American stations were heard replying to him, I gave him a call or two and was fortunate enough to work him at 2310 hours. AC4YN has since been worked by 2DI, 2QL and 2HZ, giving the latter two W.A.Z. post-war.

W60DD who was signing W60DD/FIS and W60DD/VU2 in the Andaman Islands is now W60DD/CRS in GOA. Every time he is on he is attacked by a terrific "dog pile"—mostly Ws, and does not seem to want any VK contacts. As yet, we do not know whether he is on land or sea. Of course, if he is on a ship, he is n.g. From 2DI (W.A.Z. and 170 countries) we learn that F8NE is definitely on Corsica, but is not signing F8NE/FG. He would be a rare catch should you get hold of him. LA2AA (T9) in Albania was heard and worked here on 27th July at 1650 hours. He is looking for VK contacts. Owing to heavy W QRM his QTH was missed and would be appreciated if anyone could supply this information. French Indo China (FIS) has at last been represented post-war by F18ZZ at TB, usually around the low end of 14 Mc. QSL via the R.E.F.

I propose a DX Honour Roll in these notes so that we can see how the fellows progress each month. All zone and country lists must be post-war contacts. I suggest two sections similar to that in CQ magazine, i.e. a phone-c.w. section and a phone only section. Please let me have your scores for this roll. In conclusion I know you are all with me in conveying to Gordon Cole (VK2DI) our congratulations on being the first VK to W.A.Z. He has received advice from W6QD and is now awaiting his certificate. 2DI also has DX C.C. post-war. Don't forget those notes and scores covering your DX on 7-14-28 Mc. phone and c.w., they will help to make these notes. 73 and good hunting—2AOX.

WESTERN SUBURBS

Most prominent feature of activities in the Western Suburbs is the amount of enthusiasm displayed for 144 Mc. On this band 2ND operating portable from Bankstown has been heard with a most con-

sistent signal working 2ABZ on Saturdays. Another consistent one is 2AGL.

2NM was overheard discussing 10,000 Mc. with 2ND and we wonder whether they may have been referring to motor-cycles? Time will tell. Harry uses a co-ax dipole vertically polarised. 2ABZ plans attacking 144 Mc. with an 8CR522 "hotted up" and coupled to a stupendous beam. If pressed he will most modestly tell you of the VOs, ZSs, CB7s and KP6s etc. worked recently on 7 Mc. c.w. 2JT, a diachard who after many years of c.w. seems to have given it away, now spends Sunday mornings on 14 Mc. phone.

2GR, a real old-timer and the first Ham to organise a chess contest between VK and ZL, is now in hospital at 118th A.G.H. Concord. We wish him a speedy recovery. Alec is well remembered for his work on 218 metres. Those were the days! 2TD hits the jackpot on 7 Mc. c.w. and worked a VE1 in North Scotia plus other DX. 2AER is heard mattering on 7 Mc. phone between spells of shiftwork. Max is a "key" man at his work and believes in relaxing on phone. 2AGU, the DX king of Abbotsford, is carefully pruning his 14 Mc. rotary beam with all the love and devotion a horticulturist would display for his prize rosebush. 2DW lands a few good ones on 14 Mc. phone with his co-ax fed full wave. It looks as though 2VP is about to motorise his beam for 14 and 23 Mc.

2CL has been heard chasing DX on 7 Mc. c.w. 2LN, formerly of Annandale and now on Lord Howe Island, puts a colossal c.w. signal into Sydney on 1 Mc. How are those South Sea Island belles Art? 2WB is rumoured to be on 28 Mc. with a handsome beam antenna. 2MD is heard on 14 Mc. phone.

NORTH SHORE ZONE

2TL has his 813 final perking now, and is getting his tonsils sprayed ready to modulate it. 2PV would sell his soul for a rotary rhombic designed to fit into a small backyard—who wouldn't? 2AND is building a front end to his receiver to end all front ends. 2FM, now at Neutral Bay, is bashing the air on 14 Mc. with a hefty signal. 2CM, the "ole-timer" hasn't been heard on lately, but might have snuck off to have a look at the v.h.f.s. or sumpin'. 2AIJ QRT with work, but manages to pop up on Sunday mornings for a sked or two. 2JX's location still makes me droop at the lips every time I play golf down his way. 2GQ now galloping up and down the band with his 26 watts "governed" by a new v.f.o.

2AMB is working DX merrily again after his call sign change. 2RA and 2DA are pouncing on the rare stuff. 2NI seems to be getting out consistently with his high quality phone. An NC109XA receiver is helping to snag the good ones for him. 3AGJ does very little radio—building a ketch to get away from QRM. 2HG has a nice signal and list on 14 Mc. c.w. 2GW has a new 20 rotary, thoughts are towards a new receiver. 2IN will soon be on 28 Mc. phone, has a nice signal on 7 and 14 Mc. c.w. 2ARO is off the air. He needs an 812 urgently, who can help? 2GW listens a lot—how about a signal!

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2HK works the DX. Has nice phone. 2LQ and his XYL 2MI are on 7 Mc. phone Sunday afternoons with solid signals. 2ARR has 7 Mc. phone. He surprises the boys with his recordings of their signals. 2RA is now fully automatic. He has high speed break-in working. 2SV is reported to be on 28 Mc. phone. 2EM is more interested in high quality amplifiers; he has a good signal on 50 Mc. 2AIE has a solid signal on 7 Mc. phone. He gets out well. 2DR is busy keeping the high speed c.w. boys supplied with an extra supply of dots.

ST. GEORGE ZONE

2MH is still getting an occasional new country on 28 Mc. 2GS was heard lately with 2 watts from a No. 11 on 7 Mc., while building the new rig between hopes to J land. 2DI is still chasing the elusive DX, how many countries now? 2YK, a new-comer! Charlie is on 7 Mc. with a No. 11, re-vamping AT5 for a.c. 2FTJs using a Franklin osc. on 7 Mc. c.w., with 1 1/2 watts. Frank works interstate for good reports, has under construction three separate finals using 832s. 2ASK has a new rack that would shame a few commercials; has phone, but works only 14 Mc. c.w. 2SW has 70 watts phone and c.w. on 7 and 14 Mc. and is at present building a portable 144 Mc. equipment to work from car.

2AGA is at present building new shack, but finds time for rag chews on 3.5 and 7 Mc. 2AGH is at present on a visit to the UK, and will return home via W land. 2BN seems to be active on all bands; Reg helps out with frequency and modulation checks. 2AHX is building a new super super; on 14 Mc. c.w., but has phone. 2JJ is also building portable 144 Mc. gear, and now has remote control; works 7 and 14 Mc. 2ADC is happy, having moved to his new home, but is at present inactive. I wonder if 2AV is happy, as 2ADC is now opposite him. Heard at times on 7 and 14 Mc. 2ALT is now on 14 Mc. and has b.c.l. on 7 Mc. 2AJ is still going strong on 14 Mc.

2VV is inactive at moment—new beam under way. 2RE a new Ham, getting out on 14 Mc. phone. 2AIM is on c.w. and alternates 7 and 14 Mc. 2UP and 2AEF operate on 7 and 14 Mc., the latter has a new beam with 16 position selector.

NORTH COAST AND TABLELANDS

2JK using a new mike a J7, been active on 20 with a new antenna and has a c.r.o. and Class C Wavemeter in action. 2SH erecting an 8JK for 20 and hopes for better results, getting his share of DX. 2TB has been on two months and has a fair signal, uses a ZC1 (N.Z. Disposals) v.f.o., 6V6, 807 and 45 watts, mods. 807s AB1; missed any jamage during the floods but plenty of water under the house. 2GI and 2XO still working on 80 but expect static will drive them back to 40 soon. 2NY getting things shipshape in the shack after the clean out by the water. 2WC a proud father for the third time, a boy; still working plenty of DX. 2AEY has also to be congratulated, a father once again. (Off the record the scribe 2PA is also a proud father, must be something in this North Coast air!)

2ASF can be heard on 40 active from (not in) a hotel, only c.w. as yet. 2DS kept busy getting a mast ready for some brass pounding. Warwick is an old M.N. operator. 2LH did some good work during the flood.

NEWCASTLE

2BZ and 2AGD, using transceivers on 144 Mc., heard 2FI at Wentworth Falls on 8th August, but couldn't make it two-way. The following are on 144 Mc.: 2BZ, 2AGD, 2UF, 2FP, and 2AMM, 2PQ, 2AFS and 2TE are building. 2AHA has the distinction of being the first VK to QSO TASFAS on 20 phone. The gang would like him on 10. 2CW heard on 20 with new beam, busy keeping notes for local radio club. 2PQ has shack nearly completed and will be free of family QRM, or the family will be free of him, depending on the point of view. 2AFS, Newcastle's most energetic Ham, has stacked 28 and 50 Mc. beams but claims he is always on the wrong band at the right time or vice-versa. Please contact 2FP before the 12th of each month with news.

COALFIELDS AND LAKES ZONE

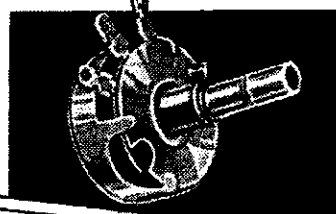
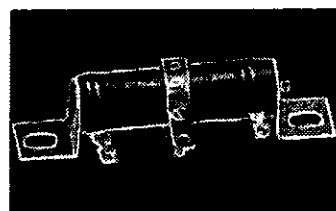
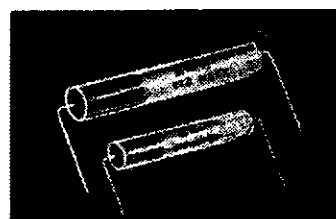
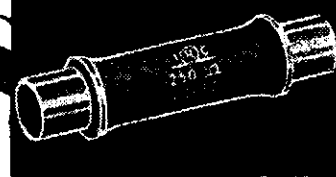
Little to report from the Lakes and Gosford area. The regulars 2OC and 2RU seem as keen on 50 Mc. as ever. 2AMU heard on 10. 2KR with his usual punch on 40 phone, no others heard. 2TY on 10 with a rotary, works 144 with 2ADX and trying to contact the Newcastle gang; has been heard at 98 by 2ADT. 2JZ has 10 and 20 beams and full gear on 144 Mc. 2KQ with a good sig on 50, a new receiver under way. 2KZ supplies the news from Kurri—2YO not active, has been in hospital, hope you are OK now George. 2KF is active on 14, 28 and 50 Mc., beam going up on the latter band. No activity from 2XT or 2KK. 2KF working at one of the local collieries, no Ham activity as yet. 2KZ only needs New Hampshire for his 28 Mc. W.A.S. that is on phone too, going on 50 Mc. using the famous "blooper" working Newcastle, Toronto and Cessnock and VK5!! All on two tubes.



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2KZ making headway with v.h.f. gear, transceiver on 144 Mc. and new receiver under way. 2MK heard on 10 occasionally. 2ADT hearing Blue Mts. (81 miles) consistently on 144 Mc., also Newcastle.

WESTERN ZONE

2HC has increased power to 20 watts and has a new junior op—nice work Ray. 2JC is on 80 every evening, the most consistent phone in the zone. 2ACU started things going with a transmitter, decided to go on a holiday, now heard from Sydney. 2YN new comer to Bourke power-house, has an AT5-AR8 working. 2AWR the only Broken Hill station heard on 40. 2QA had a visitor, 2XE the first Ham post-war—things took on an amber hue! 2XE is a new Ham in Dubbo using ex-Disposals gear on 40 with a brush sound cell microphone, nice quality. 2ACT abandoned rabbits and now training his bees to collect super grade honey. 2VZ when not operating on his patients operates on 20 DX. 2OK still using ATR2B, has secured some nice gear from a recent Disposals sale. 2AMR has things working on all bands now. 2II has almost completed the remote control gear—not quite perfect, still has to press buttons. 2WH has 95 countries, also finds time for rag-chewing on 80. 2BT also heard on 80 but works sometimes on his 7 Mc. folded dipole. 2JW nearly completed his re-building. 2NS had a contact with three original members of the big four. 2EX in between fixing clocks tries out Vee beams on 10, 20, 40 and 80. 2AIK has a new mike and will take time off from barracking for Meagher Cup to try it. 2LY now works in Katoomba and will have more time for building.

SOUTH COAST AND TABLELANDS ZONE

We extend a welcome to 2ON and 2VT who are new arrivals in the zone. 2VT hails from the West and was previously 6AY and now at Young. We hate to think of it, but fear the local 50 Mc. gang 2TC and 2TA will drive him to the v.h.f.'s, and still no decent signals will emanate from that area on a respective band. 2AGZ and 2AMV briefly on 40 and a hurried call brought no results, so no news from that area. Pre-war 2HV, now of Canberra, on 40 phone using AT5-AR8, Harry tells some amusing stories and referred to as the "Rascal." 2OY on 40 c.w. but signals are hollow here due to skip, sounds like good DX. 2JQ makes time to get on sometimes, has made alterations to audio gear with an improved frequency response. 2AIK, with winter going off, gets on more often; believe a v.f.o. is under way, and working British stations on 20; how about some information? 2OW QRL but makes the bands on occasions. Please call 2DO on 40 on Sunday mornings and pass on information on your doings.

SOUTHERN ZONE

The Ham ranks at Albury have thinned recently but there are prospects of some newcomers shortly. 2APW now 3APW last heard of in Perth, had unenviable experience of fire aboard ship, fortunately the "fire" was dumped overboard. 2VK gone to Sydney hopes to get passage to G land and his TL soon. 2QD has finance problems, now in the pay office at "Bandy," says hotel life not the best for Ham work, wire and parts on the dressing table and chassis under the bed. 2ANQ still ski-ing (spelt ski) around the hill-tops. 2OJ went tropical (not "trotppo" we hope) for a few weeks, relished the Queensland's beaches when 26 to 30 degrees at home. The Aurora on the 8th washed out signals on 14, 7 and 3.6 Mc. Our sympathy to 3ARC whose father passed away suddenly. 2ST of Corowa is in Albury for six months with the P.M.G. Notes to 2OJ would be welcomed.

VICTORIA

The sympathies of members of the Victorian Division are extended to George Glover VK3AG on the recent loss of his mother.

OFFICE-BEARERS FOR 1948-49

President: R. H. Cunningham; Vice-Presidents: W. Matters, M. Howden, M. Hooper, C. Quin, W. Magee, W. Tregear, H. Webber, H. Stevens; Councilors: C. Quin, H. Stevens, H. Webber, M. Hooper, H. Chapman, J. Rogers, D. J. Anderson, D. Gray; Country Councilors: J. Speer, J. G. Colley; Chairman of Council: R. H. Cunningham; Vice-Chairmen: M. Hooper, H. Webber; Secretary, C. Quin; Treasurer, N. Smith; Assistant Secretary, J. Groves; Assistant Treasurer, R. J. Bell; Federal Councilor, C. Quin; Publicity Officer, C. Irvine; Magazine Editor, T. D. Hogan; Membership Secretary, G. Manning; Communications Manager, H. Chapman; Class Manager, G. Manning; House Manager, H. Webber.

Committees.—T.A.C.—Chairman, G. Glover; Vice-Chairmen, H. Stevens and C. Quin; Secretary and Council Representative, D. Gray; Assistant Secretary, R. Seddon.

Disposals.—J. Groves, C. Quin and W. Tregear. QSL Bureau.—G. Roper and F. O'Dwyer. Emergency Network.—R. Busch and M. Crompton. Qualifications Committee.—M. Hooper and H. Webber.

"SHOW HAM-FEST"

The Victorian Division will hold a "Show Ham-Fest" at the Rooms, 191 Queen Street, Melbourne, on Friday evening, 24th September, at 8 p.m.

Country members visiting Melbourne for the Show are especially invited to attend. Tickets are obtainable at the Rooms or at the September general meeting.

CENTRAL WESTERN ZONE

Arrangements are proceeding for the Central Western Zone Convention to be held on 12th September at Horsham. Starting at 2.30 p.m. an interesting day is promised for all those who attend, so roll up chaps and make it a successful 50 Mc. field day. A base station will be on the air in Horsham so if nothing comes through from the outside world there will be at least one station to work with; prizes will be given for the best results.

3ARW is well into some v.h.f. work, Bill now has an oscillator going from 144 to 50 Mc., also a converter for the home receiver. 3ARM has got a new power supply but it's a little large for his primary source so it is going on ice for a while. Much the same applies at 3DP, the generator just stalls the one-lunger so QRO at 3DP is not possible yet. Jim now has his second pole up for a new antenna, but is busy solving the feeder problem.

3YW delved into the realms of heterodyne v.f.o.'s, and got so dizzy sorting out the various beats with WWV that he gave it up. The output drift on 3BM's v.f.o. gave him a high temperature. 3TY is still having mains fun, this time terrific noises on 50 Mc. so it looks as if that band will not be of much use to Bill for some time. 3EP is a good one to work in the cold weather, you can almost get warm from the heater noise in his shack.

Next hook-up gang should be on Convention day, but we can't have that, so we will make it a personal one at Horsham.

NORTH EAST ZONE

The third Convention was held at Shepparton on 25th July. Present were VK3s: DG, YV, KR, DW, HP, AHG, UI, APF, AT, FD, TS, WR, WZ, HZ, XZ, ADB, CN and Hams-to-be A. Dickson, M. Kennedy and M. Finlay. Business came first, and was like a mixture of parliament, a circus, and a soap show with 3DW, 3KR and 3YV stars.

In the elections, the posts were changed somewhat but the same men will be running the zone. Your writer's log shows the same five call signs for our last hook-up as the first hook-up in June, 1947, held to form the zone. It is a very poor show that only 6 out of 30 members can spare an hour a month to speak to their neighbouring Hams, and help those who are giving their time for the benefit of all.

Your new officers are: 3DW President, 3KR Secretary, 3YV and 3UI Vice-Presidents. Please give these chaps more encouragement and help than in the past. Come on the hook-ups, say what you want, whether it be conventions, field days, picnics, or disposals, and help make arrangements. Your subs cover postage, but your Secretary has other things to do than always chasing members by mail and telephone. If you don't show any interest in the zone, we can only conclude that you are ill, or don't wish to associate with fellow Hams. Even the XYL cannot stop you sending suggestions and notes by letter.

New hook-up times are 9 a.m. on 7 Mc. under 3DW, and 9 p.m. on 3.5 Mc. under 3UI, on the first Sunday of each month.

Following are our impressions of the shacks the gang visited after the Convention. 3APF looks like a QSY ad. The new tower, with motor-driven six-over-ten plumber's delight beams, makes a very pleasant skyline. The shack is conveniently located on the bank of the Goulburn River. Even considering this, we think Peter is optimistic putting a 300 amp. meter in the new final.

3AT has station in cupboard. Rig is a 5 stage bandswitched 30 watt and looks very flexible and easy to operate. Alec likes 7 Mc. c.w. for DX and has 19 countries so far. Receiver is a top-notch American job. A crystal mike would complete the show Alec.

3CN has worked 151 countries post-war, with 125 confirmed. Rig is behind neat grey panels, with 70 watts to 809 in final. Antenna is 66 foot zepp. The shack seemed incomplete to us, no mike or modulator, but contained some relics of the telegraphy era. 3DW, "the original voice of Shepparton," and still the biggest one. Rig is 6 ft. square frame and panels and looks like b.c. station. Power is 18 watts on 7 Mc. phone mostly.

Thanks are extended to 3DW for organising the Convention, and 3WQ for W.I.A. dope. We welcome 3HZ to the Zone and hope you have a shack and house by now Murray. Friends of the late Howard Love were shocked and upset to hear of his passing.

EASTERN ZONE

The Eastern Zone hook-up on Sunday nights at 2000 hours on 3650 Kc. is still proving very popular with members, but there are still quite a few

who have, as yet, not put in an appearance. This hook-up is very useful to members as quite a number of interesting discussions take place. We have altered the order of procedure somewhat and at 2100 hours the Zone President, followed by the Secretary, come on and give members whatever zone business there is. 2100 hours was decided upon for zone business as it is not always possible for all members to be on hand at 2000 hours.

Now for the doings of the members. 3AHR is still keen on 14 Mc. DX and gets some very good reports. 3AEP is another who likes his DX. Your phone is very much better now o.m. 3VL-3US, Rex and Gwen, are very active on all bands especially 50 Mc. 3DI is still very active on 50 Mc. and has his converter working f.b. now. Is experimenting with S. meters. 3CI has a re-vamped SCR522 working on 50 and 144 Mc. and is doing very well indeed. 3IHZ has transferred to Shepparton and he is going to be missed by all zone members, especially the 50 and 144 Mc. gang as he has been very active on both these bands.

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SAKM is now reported to be on 50 Mc. He puts out a very nice sig on 3.5 Mc. **3LV** has invested in a 12 v. petrol-driven generator to keep the batteries charged. It certainly makes a difference to your signals o.m. **3WE** is not heard very often except for the zone hook-ups. The new Junior op. must be keeping you busy! **3TH** and **3BB** are both putting out very solid sigs on 3.5 and 7 Mc. with comparatively low power. **3SS** has rebuilt his shack and now has everything working f.b. **3RH** is a new Ham at Traralgon and is now on phone, and putting out quite a nice sig too.

3ASS, the Ham station of the Army School of Signals at Balcombe, is active on 3.5, 7 and 14 Mc. The newly formed sub-section of the Eastern Zone meets at **3ASS** each month and they report that they will have six associate members sitting for their tickets in October. Best of luck chaps and hope to welcome you all to the Ham ranks. **3QZ**, our very active Secretary, is not so active on the air as he spends most of his spare time building a new house. Reports that the garage is completed. Better get the shack finished next o.m. **3PR** is re-building all his gear including the b.c.l. receiver. As acting notes correspondent of this Zone for the next few months he would like those members who do not come into the zone hook-up to drop him a line and let him know what they are doing. Remember, we want to keep the Eastern Zone on the map.

GEELONG AMATEUR RADIO CLUB

A visitor to the Club was Mr. Oliver Harrison of Edinburgh (Scotland) who is a radio operator on the motor vessel "Ardington Court." Mr. Harrison has the call of **ZLJGE** while the vessel is operating between New Zealand and Australia. He was very warmly welcomed by thirty club members. **3ALG** gave a talk on his shortwave listening days and **3AJF** gave us an interesting description of the high frequency aircraft transceiver, the **SCR522**, which was on view.

At another meeting **3PD** gave an interesting address on Direction Finding and the location of a hidden transmitter. He also outlined the construction of the necessary apparatus used and outlined the experience of Tasmanian Amateurs on field days. At a later meeting **3SY** gave an address on Microphones and illustrated the construction of various types of microphones by diagrams and demonstrated their use and quality by means of an amplifier.

Arrangements were made to start a Morse class, and this class is now under way and ten members are making good use of the class and are now having three lessons a week under the instruction of **3IC** at present. At the last meeting of the club an interesting night was spent.

FAR NORTH WESTERN ZONE

This zone has been rather inactive over the past month. **3MF**, busy with work and rehearsing with the District Orchestra, has been missing from Ham Radio. **3PX** still in the process of cleaning up his rig. **3NG** still awaiting power connection. **3TI** at present on holidays and spending some re-building rig; he has been on 7 Mc. with nice c.w. sig. **3ARG** and **3BX**, at local branch of University, heard working portables. **3AUG** is rounding up parts for his 50 Mc. rig. **3FO** is getting along fine in Ouyen and gets a good sig into Mildura and most parts of Ausaje, last week he managed to raise some DX on 7 Mc. and still wishes he could use his Type 3 which at present reposes on the bench in the shack.

SAGE, one of our new members, has been doing great work on 7 and 14 Mc. c.w. with 20 odd watts on an 807; he has also tried some phone using Telefunken modulation but so far not so good. **3GZ** spends most of the time on 14 Mc. with an occasional burst on 7 Mc., understand some phone will be heard from there soon. In Mildura we have two prospective Hams in **KEI** Stansfield and **HERB** Walker. **KEI** has to do regs. and code, whilst **HERB** hopes to sit for his ticket before the end of the year. At Ouyen **Fred Chissold** sat for the July exam and is now awaiting results. A meeting of the zone will be held early in September and notices will be sent out to all members and associates, advising them of the date and place.

QUEENSLAND

At the general meeting held on 30th July, there was a very large attendance of members. The President (**4AW**) welcomed country member **4CW**. We would be pleased to see more country members at our general meetings. What about it Ipswich and near-Brisbane members?

The Treasurer pointed out the very unsatisfactory state of **VK4** finance. A motion that an increase of membership to £1/10/-; student and associate members £1/5/-; and junior members 15/- per annum, with all members receiving "Amateur Radio" was put to the meeting. After some very lively discussion, Council was instructed to present, at the next general meeting, a full balance sheet. Motion would then be discussed again. At present the number of unfinancial members in **VK4** is forty-four.

The passing of **VK3KU** and **VK2HM** was sad news to Queenslanders and a one-minute silence was observed, by **4WI**.

4ZU, having resigned the position of sub-editor at the June meeting, the appointment of **4SN** as the new sub-editor was confirmed.

General business at future monthly meetings will close at 9.30 p.m. and an endeavour will be made to arrange lectures on topics of interest to Hams. Last lecture was delivered by **Morgan Gabriel**, the subject being "The Decibel."

Of great interest to budding Hams is the news that permission has been granted for half hour periods, of Morse practice over **4WI**, on the 3.5 Mc. band. Further details will be announced over **4WI**.

HEARD AROUND THE BANDS

A few **VK4s** are still active on the 3.5 Mc. band—**4CH**, **4FD**, **4GG**, **4MM**, **4HA**, **4HZ** and **4ST**. **4HZ** has taken a very active part in the Trans-Tasman network. **Jim** is looking for more recruits. Congratulations go to **4BA** on working W phone on this band. A word of warning to other **VK4s** who wish to emulate **Harry**—get a **ZL** pilot!

Conditions on 7 Mc. band have been very cranky of late. Locals drop out at night and **VK6** and **VK5** stations take charge. Have heard **VK6** on phone as late as 10 a.m. Sunday morning seems to be the most popular time for **VK4** on this band. The **W.I.A.** round table is still as popular as ever—thanks to very f.b. work by **4WI**. Regulars in this hook-up being **4GG**, **4GH**, **4FR**, **4ID**, **4HZ**, **4HD**, **4CU**, **4UX**, **4CH** and **4SN**. Got quite a surprise recently to hear two old-timers operating on this band, hope to hear more of you **Clif** (**4CG**) and **Fred** (**4RF**).

4LK puts out a nice phone signal from **Cloncurry** and often has a rag-chew with brother **Roy** (**4DK**). **4HD** helps to while away the long hours with a daily rag-chew with **4UK**. **Frank** runs a **3BZ** rig from his bed-side in the **Bundaberg Hospital**. How much longer **Frank**? Hope you are soon able to get about again. **4IM** re-building new shack, new vertical antenna, and new rig. **Les** says all visitors welcome provided you take your own bottle of lunch. **4UX** recently visited old friends in **Bundy**. **Claude** arrived complete with **Command Set** and found the clothes line f.b. for antenna. **4XP** heard with terrific c.w. signal. What are you using o.m.? Would be pleased to get some dope on your rig, etc. **4FL** up to his neck re-building but puts out nice quality phone. **4AZ** operates portable from the "S.S. Carlisle."

4CG reports that 14 Mc. is dead as he has worked only the following in the past week: **VV5**, **G**, **VE**, **W**, **VS2**, **GM**, **F**, **FA**, **VS9**, **ON4**, **KL**, **UG**, **UA**, **CP**, **ZS**, **OZ**, **D**, **VP**, **LU**, **CR** and **VQ**. This bears out a contention that the **Darling Downs** is a Ham's paradise. Incidentally **4CG** was the first **VK4** to **W.A.S.** As we write these notes **Costa Rican** phone is romping in together with **VK4** short-skip stations from the **Brisbane** area (40 miles away).

CENTRAL ZONE

Manager **4HZ** reports as follows: **4GH** had the pleasure of a chat with **2ARC** and **3ACG** who were passing through **Maryborough** recently. **4HE** is

working on 28 Mc. and has receiver for 50 Mc. **4BJ** mixing 14 Mc. activity with rag-chews on 7 Mc. **4CX** doing likewise. **4XJ** operating on all bands from 3.5 to 28 Mc., but very busy with exams. and **Vee beams**. **4AD** getting new rig and receiver. **4ZP** chasing 14 Mc. **DX**. **4CR**, ex-**2ACD**, has temporary rig on 7 Mc. and a receiver for 50 Mc. **4RA** a new comer to **VK4** was **3ZU** pre-war. **4HD** keeping regular skeds at 0700 and 1900 with **4LN** on 50 Mc. **4XR** running 100 watts to a couple of **809s**. **4HZ** got disgusted with 14 Mc. and decided to build crystal rig for 50 Mc. and made contact with **4LN** and **4CR** and is now building a 50 Mc. converter.

SOUTH WEST ZONE

Manager **4ER**. New member in this zone is **4TY**. **Believe Norm** has all the necessary batteries, etc., for the country rig. Reports from this zone show that **4HR** will soon have some mates in the **DX C.C.** for **4UX** has now worked 97 countries, **4ER** 93 countries, and **4CG** 117 countries.

IPSWICH ZONE

Manager **4WS**. **Believe 4MW** gets so many **DX QSL** cards these days that **Merv**. is thinking of building a new shack. **4GG** (the old iron horse) has solved the problem of how to get **S9** reports when the meter says input to the final is zero. Must be the antenna, **George**.

TOWNSVILLE ZONE

Manager **4EE**. Active in this zone are **4EJ**, **4GE**, **4GD**, **4XD**, **4FE**, **4GF**, **4VII**, **4RU**, **4WH** and **4RW**. The **Townsville Radio Club** meets on the last Friday of the month and, we are told, is preparing a few more candidates for their tickets. The Secretary is **4GE** and the President **4GF**. **4EJ** is leading the boys in this zone in the **DX** field, whilst **4GD** is going to town on 28 Mc. An old-timer **4VH** is staging a come-back.

Well chaps, that's all for this month. If you have any news, technical articles, etc., shoot them along to the sub-editor. All correspondence will be acknowledged and all information suitable for these notes gratefully received. Address is **VK4SN**, **Minden**, via **Rosewood**.

SOUTH AUSTRALIA

The notes this month do not amount to much, as your correspondent has been confined to his bed with a severe attack of "Flu," in company with most other **VK5** chappies apparently. What took place at the general monthly meeting I haven't the foggiest idea because I was tucked under the blankets and the meeting was the least of my worries. Naturally, I have had no listening on the bands and all and all as a correspondent this month I am a washout. A couple of stalwarts, one from **Kadina** and the other from **Mt. Gambier** have come to my rescue with their usual budget of notes and on these I rest my laurels. Many thanks **Les** and **Col**.

All the boys around **Kadina** have been on fairly regularly, their new starting time is 9.15 a.m. so that they can get round twice, though it looks as if they will have to remind some of the boys about the "one-minute" overs. The new frequency is 7115 Kc.

5VM has found another shower-rose in his junk box. It is rumoured that he's going to put it in push-pull with the one he's got over the rig already. **5AX** has put up a three element beam for six. **5CD** on his feet again. Was successful in recent b.c. operator's ticket recently. **5VM** trying zepp out with doubtful results.

5XR and **5CS** went to a ball the other night and got modulated! All they could see the next morning were sinusoidal oscillographs! **5XL** going to build a v.f.o. (calibrated, mind you!) and set an example to all of us. (Yep, they're his own words! We're waiting.) **5MA** has got lots of bits and hopes to make all sorts of interesting little gadgets with 'em.

5GS had **2QI** as a visitor again. Also had a visit from **5GP** who is connected with the **Flying Doctor Service**. He has a utility fixed up that covers **Ham** and the **Flying Doctor** frequencies with 14 crystals. Receiver is an **AR7**, and the aerial is a 25 ft. collapsible mast. **5PH** has had the flu too, but is well on the road to recovery. **5RJ** hopes to get his **733D** working on 50 Mc. **5AP** still re-building—can't make up his mind.

5CH is having an enforced rest, stepped in front of a moving car—probably thinking of some elusive **DX**. Pleased to report that he is well on the way to recovery. **5TW** still manages to work a few Yanks on 20 c.w. in spite of late shifts due to test cricket. Also does a spot of 40 phone. **5JA** has his 7 Mc. centre-fed aerial erected after all, without shifting the neighbour's fence any noticeable amount. Reports since indicate that the effort was worthwhile. Still has his daily sked across town on 144 Mc. with **5MS**. The latter has modified his receiver, an **AR8**, to use an **ECH85** and is very pleased with the results. **5GJ** has completed the power supply and modulator of the new rig.

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WESTERN AUSTRALIA

The August meeting was held on the 9th of the month, there being 46 members present. Our Secretary—GAG—was away, up in the North-West at the time, so 6KW took his position as acting Secretary.

It was with deep regret that 6WH told the meeting of the passing of Howard Love (VK3EU). Expressions of sympathy have been sent to his family on behalf of the VK6 Division of the W.I.A.

Rules of the forthcoming VK/ZL Contest were read. 6RU commented on the Remembrance Day Contest and called for an organised effort on the part of entrants, so that VK6 could win the trophy. Support was readily given and we should know the result by the time we read this in print.

The Council, at 6JW's suggestion, will discuss a motion that N.B.F.M. be made available on all bands—particularly 3.5 Mc. in an endeavour to popularise this band again and eliminate b.c.l. interference. A report will be sent to Federal Executive to show approval and is expected to conform with reports from other Divisions.

6GM made known to the meeting that Bill Bolton (6MB) was being married in a couple of weeks. Bill was given a good hand and helpful advice was readily spoken to wish him and his XYL every happiness in their future life.

Presentation of W.A.C. and W.I.A. Contest Certificates was made by 6WH to 6WS, 6PJ, 6RF, 6RU and 6KW.

After the rag-chew session—which is a feature of every meeting—6KW gave a lecture "My Amateur Station." This was the second of the series. Ron went to considerable trouble to produce diagrams and showed interesting photos of his equipment, which would probably be the most expansive amateur station in VK6.

6MY followed up with a very interesting lecture and demonstration of a companion unit he made for his Command Transmitter. The unit contained modulator and power supplies, so making up a complete transmitter on the 7 Mc. band. Circuit modifications were explained in Mal's f.b. style, so when we saw the set-up work we believed all he said! The lecture was most appropriate because a large percentage of the lads present are expecting to have their own Command Transmitters in the very near future. Appreciation was shown in the usual way for a most informative lecture. The meeting closed on sked—10.30 p.m.!

PERSONALITIES

Congratulations this month go to 6DJ on the arrival of a second harmonic. This should get you out of washing the dishes now! 6MG likes the fire-side these evenings and Mac is devising a means of remote control, using his 108 set. He can receive the cricket broadcasts on it anyway. 6JB says he has put up a 14 Mc. fixed beam on Europe. In any case it skips Waterman's Bay. How's DX Alan? 6DG with 3½ wats input has worked ZL with a good report. We worked this ZL later and learned that he was using a two-tube receiver! Extra f.b. Bob. 6BK had a very unfortunate accident, but has made the most of convalescing by putting up some long wire antennae, and almost pulled the house over. Thanks for the newsw letter Bob.

6MU goes mobile with a 20 foot vertical antenna on his car. Mal drives along with his head in the air—watching for power and telegraph lines which may cross over the road! 6RS is formulating ideas to put a signal out on 144 Mc., also a v.f.o. for other bands. F.b. Ron and hope you will be in on the summer DX season 1949! 6FB is designing a portable rig to keep him on the air so that he can build up a new receiver. Frank's rig will then be on all bands—one at a time! 6GA is having a spell in hospital. Hope you are out of it by the time you read this Bill. Did you do any good on 28 Mc.? 6RU is talking a lot about the Remembrance Day Contest. What's the betting that Jim is one of the top scorers?

6GD took a nasty "kick" from the rig when he caught the lot via a grub screw which holds the insulation sleeve on a meter plug. Glad it was not any worse than that sore finger Horrie, and we are sure you will give that idea away now! 6DW at Bruce Rock is putting out a nice signal on 7 Mc. phone. Very f.b. for the d.c. mains Don. You may work some DX early in the morning on c.w. o.m. 6AG is at present operating portable in the wild North-West. Hope you can bring back some dope on 6FH and a few of the other lads up that way, Wal. 6ES is another one having a spell in hospital. Hope it won't be long Harry, or else that new receiver will be getting dusty! We haven't heard 6DX for ages on 7 Mc., but we hear some f.b. DX calling him on 28 Mc. Also notice he collects a lot of QSL cards these days.

6MY is kept busy these days preparing demonstrative lectures for the W.I.A. and another Radio Society. These lectures are most informative and

appreciated Mal—there should be more of it. 6FC is trying hard to put out a signal on 144 Mc. Drive is Frank's problem and he is also talking about v.h.f. reflections from the moon! 6ZZ often heard on 7 Mc. Harry is gradually getting things sorted out. 6XG, at Katanning, used to hear him on 7 Mc. regularly. What's all the news from down there Clarrie? What about 6XF also? 6MB is doing the right thing and taking up himself a XYL. Nice work Bill, and very 7S from all VK6.

TASMANIA

NORTHERN ZONE

At long last it can be announced that we now have an active Northern Zone. Mr. Len Crooks (7BQ) was unanimously voted into the chair as President. Len has been actively associated with Amateur Radio longer than I can remember, however some idea of the time can be gauged by the fact that recently whilst I was QSO ZL1CI he commented on the fact that he had a photo of 7BQ with his receiver, built on glass plate, that Len had won a prize with in 1927. Len is also a Vice-President of the W.I.A. Tasmanian Division and has been associated with every amateur organisation formed in Launceston in the past. With this experience Len was certainly the ideal choice for this position. Mr. Noel Lipcombe (7NL) offered to act as our Honorary Secretary and was also unanimously voted into office. It is now up to the zone members to make a success of the zone.

We are very fortunate here in Tasmania to have such an excellent President, Secretary and Council in this Division and with these all working in harmony it is no wonder that practically all the Amateurs on the Island are members of the W.I.A. This month we welcome Mr. Bill Tanner (7TE) to the Institute and in the Launceston district we now require only one more member to attain the possible.

Although we are few in number, Amateurs in the Zone can be easily divided into three divisions. First are the high frequency gang consisting of 7DB, 7BQ and 7TE. The activity of these men I cannot find out as I am not in the iron ring, nor have I the necessary gear to find out for myself. Next are the DX men namely 7RE, 7DS and 7LZ. The doings of these three for the last couple of months could be written on a mustard seed and all three are wearing faces as long as the "new look." Last, but not least, are the phone men 7BQ, 7GD, 7RB, 7NL and 7EB; of these 7EB appears to be the most active and can be heard nightly describing the vigours of the Tasmanian winter to all and sundry.

Although a little out of this zone they are nevertheless VK7s so it would not be out of order to say that we would like to hear from the Macquarie Island gang. Who wouldn't anyway?

FIFTY AND UP

4ED and 4LN were heard testing with 4HZ the other night. Has the v.h.f. bug bitten you too, Jim? Believe 4LN has converted his DR106 to the 7 Mc. band; what a man! 4CU has his DR106 on a.c. Charlie's new beam is an f.b. job as is his new super receiver for this band. 4XD and 4GD of Townsville working cross town and latest advice is that 4RW and a few more are warming up for 50 Mc. Nice work fellows and hope to hear you down here this summer.

144 Mc. DIGEST by W. J. Hartley

Ideal conditions prevailed for the second 144 Mc. field day held on Sunday, 8th August, in VK3, but due to the fact that there were only two mobile units on the road, activity was mostly confined to local city contacts. Unfortunately several other portable stations were not available, due to petrol restrictions and to re-building. No new records were established, however SABA-SYS made most use by having six contacts by phone from a 700 foot hill located north of Diamond Creek, there 3MD, 3ACM, 3ED, 3AJ, 3HE and 3VF of Drysdale were contacted, while 3XM operating from Oliver's Hill at Frankston worked through to 3ED, 3AJ and 3ACM. Nothing was heard of 3CI at Foster or of 3BW or the Mt. Gambier boys 6JA and 6MS.

It is hoped that for the next 144 Mc. field day, to be held on October 10, that there will be at least six portable units out together with country links.

Information is to hand from the N.S.W. V.H.F. Officer (VK2NP) that the 288 Mc. band is very busy with the calls of 2ABZ, 2LZ, 2AGL, 2NO, 2HL, 2NP, 2KI and 2YE, the last two Hams set up a 70 mile record by working each other from Mt. Gibraltar, near Bowral, to French's Forest

with strength 6 signals both ways. Gear used on this band are super-regen receivers and mod. o.c. 2ABZ and 2NO are sporting VT90 micro-pups with high power, 2NP has in use p.p. 6J6s followed by a 6S7 and a 6V6, hitched to a five element quarter wave spaced and a 955 super-regen. The Gladstone Radio Club is listing 288 Mc. for its future field days apart from 144 and 50 Mc.

For the last month the following stations were active in VK3 on 144 Mc. band: 3ACM, 3ABA, 3AJ, 3AGG, 3TO, 3JO, 3HE, 3HK, 3LH, 3NB, 3XM, 3LS, 3MD, 3VF, 3ED, 3EH, 3EL, 3EM, 3EW, 3ES, 3CI and 3BW. In the process of coming on are 3EA, 3EE, 3AN, 3OX and 3ACU (ex-5CU). 3YJ has only to get the 522 power pack to work before being heard. The most outstanding of the month is the work of 3VF of Drysdale, who has made contact with 3ABA, 3ACM, 3EH, 3ED, 3LE and 3AJ; in this case daylight transmissions appear to be superior. 3TO with par excellence "new look" modulation is back again with a much improved m.c.w.

3EW had his 12 watt swinger reported down at Drysdale by 3VF, 3MD, one of the old 166 gang, put in a surprised appearance by being first contact to the field station 3ABA with the aid of transceiver of 2 watts using a 7193, 6F6, etc., with a half-wave dipole. Another 166 veteran in 3LS made a welcome return on 144.6 with a 522 of 14 watts, 10 tube A.S.V. receiver and a 30 foot dipole. 3CI, at Foster, was again faithfully on the job, but what hope was there for a city contact with the low end of the band clogged with stations.

The August v.h.f. group meeting of the Victorian Division provided discussion once again on the matter of the use of vertical polarisation for local work, and in view of the good coverage attained during the 166 days it seems a foregone conclusion that this method will be in use again.

A few nights after the field day 3BW made his debut with 60 watts to a 829A with a 16 element array for vertical transmission. The effect on the city was nothing short of pure magic for bringing stations on the air. The first to contact 3BW was 3AJ who was the winner by reason of having a sked!! A wide range of signal strengths up to S8 were reported and the same effect of beaming away from the objective was noted as in the case of 3VF, apparently the high hills on the east side of Port Phillip Bay are acting as the reflecting medium.

Conditions on 144 Mc. in VK4 must have been somewhat bad during early part of August as, according to the grape-vine, regulars like 4HR, 4ZU, 4XG, and 4HK migrated to 14 Mc. 4FJ was heard arranging sked with 4FN for Sunday night after the local rag-chews had finished.

At last things have asserted themselves in VK5 where the 144 Mc. band is concerned for the following are permanent occupiers: 6JD, 6RV, 6QR, 6GB, 6EC, 6LO, 6AF, 6OB, 6GF and 6GA, while 6KZ is dabbling with 288 Mc. 6RV is using a three stage m.o.p.a., while 6QR on crystal control is tripling to a 832. 6JD finds time for a busman's holiday using m.c.w. into p.p. 7193s and an unmodulated crystal sig. 6JD, never out of it, kept a lookout for the VK3 field day signals with a B0639 receiver hitched to 50-foot-high ground plane. In co-operation for the VK3 field day, 6JA and 6MS toiled on foot to the top of Mt. Gambier with the "portable" gear, contact was made with R5 S9 plus signals to 6NV located at the Aerodrome, 7 miles away, no signals were heard from VK3.

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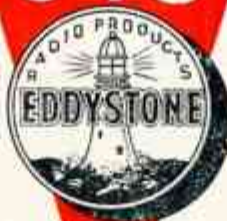
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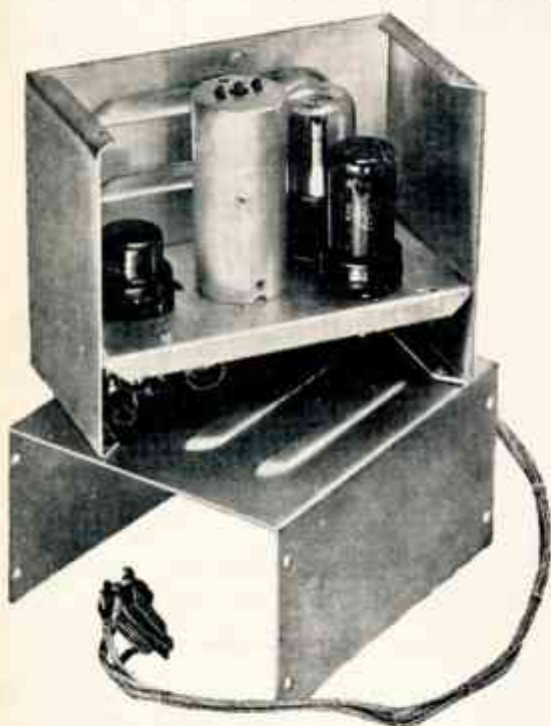
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OCTOBER 1948

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AMATEUR RADIO

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EDITORIAL



On Thursday, 2nd September, there passed away suddenly one of the best-known figures in the Amateur Radio world—Kenneth B. Warner, W1EH, victim of a heart attack.

As Managing Secretary of the A.R.R.L. and Editor of QST, K. B. Warner was known and respected by Amateurs the world over. It was his genius for organisation that brought the A.R.R.L. to the forefront of Amateur Radio societies, his capable management which made QST and the Radio Amateur's Handbook the Amateurs' Bibles. His guiding hand will be sorely missed by the A.R.R.L.

K.B.W. was but 53, young as old-timers go, but he had been the keystone of the A.R.R.L. and QST for more than 29 years, surely a life dedicated to the service of the Ham fraternity.

So passes Kenneth Warner, in company with two of our own most loved brothers, Howard Love and "Pop" Medhurst. What tales of brass-pounding and W.A.Cs. there must be in that Other World today, of DX long forgotten, and of Ham brotherhood and kinship.

No doubt the memory of these, our fellows, will be kept alive in Contests and the like, but always the individual Amateur can do his bit in fostering the spirit they so nobly and well helped to bring into being.

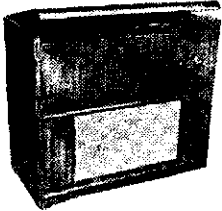
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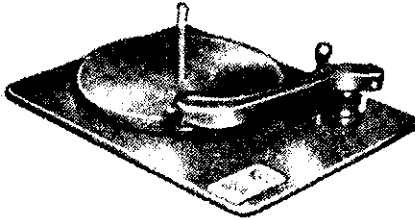
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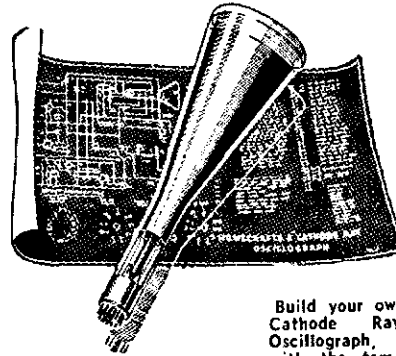


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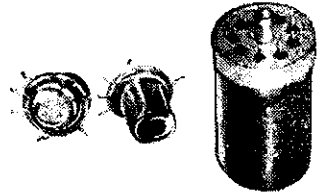


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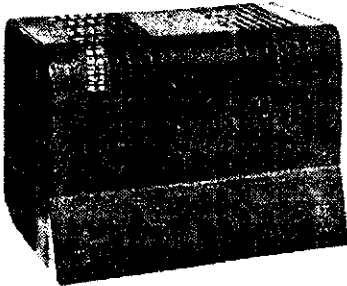
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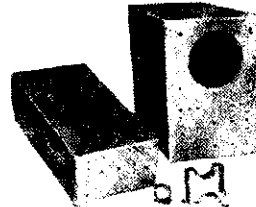
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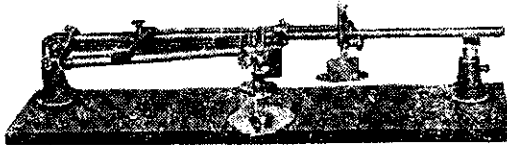


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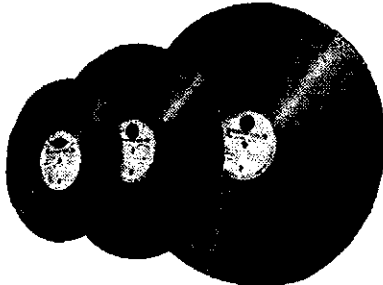
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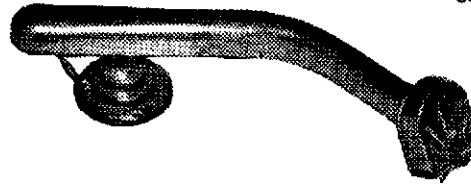
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A Receiver, a Trapezoidal Pattern—So What?

BY R. S. EDGAR*, VK5RS

It is well known that the c.r.o. may be employed for the purpose of delineating that distortion which may obtain in the modulated r.f. stage of an a.m. transmitter.

If the vertical excursion of the spot be proportional to the instantaneous r.f. amplitude, and the horizontal travel be proportional to the instantaneous voltage output of the modulator, the production of a trapezoidal pattern denotes freedom from distortion. At 100% modulation the pattern becomes triangular, while overmodulation is accompanied by the formation of a horizontal line extending outwards from the central vertex. Should harmonic distortion be present in the absence of overmodulation the slant sides of the figure will be curved, while phase distortion only produces elliptical sides when the carrier is sinusoidally modulated.

These facts have apparently given rise to the impression that transmissions may be monitored at a distance by employing a c.r.o. in conjunction with a receiver, the vertical plates of the c.r.o. being actuated by the i.f. output, and the horizontal plates being driven directly, or after amplification, by the product of demodulation. The quasi-trapezoidal patterns thus obtained are supposed to be read in precisely the same way as those discussed above.

Unhappily, such a conception is entirely erroneous.

In virtue of their selectivity requirements, the final i.f. stages of standard communication receivers are normally designed to handle only a limited range of frequencies. For a.m. reception their band-pass characteristics are such that the maximum frequency-difference between components transmitted without extreme attenuation lies in the lower

audio range, whence the periods of these components bear a ratio of approximately unity.

The summation of a series of sine waves of different frequencies gives rise to a complex wave whose peak amplitude is a function of time. If the difference of component frequencies be small compared with their absolute values, the upper and lower envelopes of such an a.m. wave must represent the mirror images of each other in the axis of time when the instantaneous amplitude is plotted against time on rectangular Cartesian coordinates. This follows directly from the fact that, over an interval of time somewhat larger than the period of the lowest-frequency component present, each will have undergone a complete cycle. Since their phase relationships change negligibly in this interval the peak positive and negative values of their sum must be equal.

Thus the output from the secondary winding of the final i.f. transformer of any normal receiver comprises a symmetrically-modulated wave, irrespective of the nature of the signal received and/or distortion and spurious frequencies generated in preceding stages (assuming negligible stray coupling).

The upper and lower envelopes of such a wave are, of course, defined by a series of discrete points, but for the present purpose may be taken as continuous and therefore representable by the function—

$$y = \pm f(t)$$

where $f(t)$ contains audio components only.

If the wave be demodulated without distortion the detector output is necessarily of the form—

$$a f(t) + b$$

where a and b are constants, since the product of demodulation must be a reproduction of the modulation envelope.

Should, now, the i.f. and detector outputs be plotted on the vertical and horizontal axis, respectively, of rectangular Cartesian co-ordinates, the figure obtained must be trapezoidal in nature. This may be seen as follows.

The slant sides of the figure are defined by the simultaneous equations—

$$y = \pm f(t)$$

$$x = a f(t) + b$$

whence

$$y = \pm \frac{x - b}{a}$$

for all values of t , i.e. y is a linear function of x .

The slant sides are therefore rectangular, and the complete boundary an isosceles trapezium.

It is immediately apparent that, should the deflector plates of a c.r.o. be fed from the i.f. output and a linear detector, a trapezoidal pattern invariably obtains.

A limiting case of some theoretical interest is that in which the modulation envelope is a stepped wave. $f(t)$ is no longer single-valued function of time, and the solid trapezoid degenerates into a series of vertical lines which, nevertheless, lie within a trapezoidal boundary.

The shape and size of the c.r.o. image are functions of the depth of modulation of the i.f. output. As the modulation factor increases progressively from zero to unity, the image, at first a vertical line, becomes trapezoidal and then triangular. Overmodulation increases the dimensions of the triangle without change of shape, and intensifies the illumination of the central vertex.

Should a trapezoidal pattern not be obtainable from any existing set-up of this type, the source of distortion is to be found in the second detector and any ancillary amplifying stage. Either non-

* Morshead Avenue, Springbank, S.A.



Fig. 1a.

Fig. 1b.

Fig. 1c.

Fig. 2a.

Fig. 2b.

Fig. 2c.

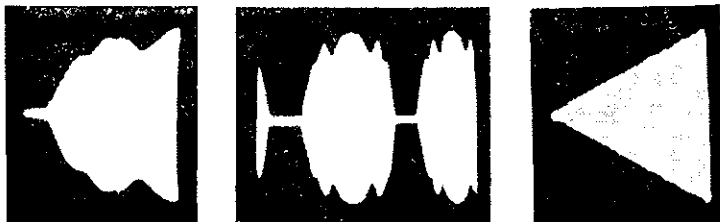


Fig. 3a.

Fig. 3b.

Fig. 3c.

OSCILLOGRAPH PATTERNS

Comparison in transmitted and received trapezoidal patterns for various percentages of modulation.

Figs. 1a, 1b.—Transmitted trapezoidal and envelope patterns respectively, for 100% modulation.

Fig. 1c.—Received trapezoidal for 100% modulation.

Figs. 2a, 2b, 2c.—As for 1a, 1b, 1c, but for overmodulation condition. Note difference in 2a and 2c.

Figs. 3a, 3b, 3c.—Patterns in same order, but for severe overmodulation and distortion.

linear demodulation and amplification or frequency discrimination will produce curvilinear distortion of the image, since the complex audio wave-form will be distorted in transit. Although a finite and equal time delay of all component frequencies passed (phase angle shift proportional to frequency) is permissible in the standard distortionless video amplifier, its effect in the present instance is the production of a double-edged pattern. Thus, not only is freedom from phase distortion a prerequisite of accurate delineation, but also freedom from phase shift.

In those cases where the detector is fed from the penultimate i.f. stage a further source of distortion is present, its effect being manifested as an alteration of the modulation envelope in its passage through the final i.f. stage. A detailed description of i.f. channel distortion is beyond the scope of this article but the following points should be noted.

(1) Harmonic distortion in the final i.f. tube.

If the dynamic mutual characteristic of this tube involve third or higher-order odd powers, some of the harmonics generated will fall within the i.f. band-pass. Spurious sidebands are therefore added to the product of linear amplification with a consequent alteration of the modulation envelope.

Such an effect is very apparent if a sharp cut-off tube be overloaded with excess drive, and may be appreciable in some variable- μ tubes when working, as is often the case in the present application, at high level.

(2) Phase and frequency distortion in the tuned output circuit.

An a.m. wave of constant frequency will be faithfully reproduced by a linear circuit element only if the following requirements be met:—

- That carrier and sidebands be equally attenuated;
- That the angular phase shifts of each sideband associated with a given audio frequency be equal and opposite with respect to carrier shift and proportional to that audio frequency.

Under these conditions no modulation distortion will be introduced, but a time delay will be experienced by the modulation envelope, except in the particular case where all phase shifts are zero.

Although sideband attenuation in a broadly tuned output circuit may be slight, the immediate requirement of zero phase shift cannot be met. Even in the case of a single tuned circuit with a Q of only 25 and a consequent attenuation of about 3 db at 10 Kc. off resonance (455 Kc. i.f.), a phase shift of approximately 10° is experienced by sidebands spaced $\frac{1}{2}$ Kc. from the carrier frequency. This i.f. shift is carried over into the modulation envelope, and, in the case of sinusoidal modulation, would be effective in introducing an easily visible elliptical distortion.

When the output circuit is not exactly tuned to the incoming i.f. carrier frequency, asymmetrical sideband cutting

and phase shift occur. This is instrumental in producing at the output a wave which may be considered to be both amplitude and phase-modulated—a further type of modulation distortion.

In certain cases an imperfect set-up may yield a quasitrapezoidal pattern on one transmission and not on another. The extent to which this occurs is, in general, dependent on the sideband width transmitted and the band-pass characteristics of the receiver. Time-delay and frequency distortion in the detector, audio amplifier and auxiliary i.f. stage are more marked at the higher modulating frequencies, so that an overmodulated transmission with its large sideband coverage may well be associated with more than average visual distortion.

Nevertheless, there remains the fact that the receiver pattern bears no direct relation to the transmitter pattern, and that any departure from a trapezoidal image at the receiving end is the outcome of faulty design.

The visual determination of modulation percentage at the receiving end also appears to be a questionable practice, since the i.f. modulation envelope rarely bears any resemblance to that associated with the signal received.

This may in part be due to the modulation rise which generally accompanies non-linear tube operation as discussed above, the possibility that the receiver is not exactly tuned to the incoming carrier frequency, or the fact that regeneration or spurious frequencies may occur in the r.f. or i.f. stages. Even when these factors are unappreciable there remain sideband cutting and non-linear phase shift. The effect of these depends largely, of course, on the nature of the modulation envelope transmitted and the overall selectivity of the receiver. For this reason it is difficult to formulate a general rule, but it is clear that some caution should be exercised when checking modulation depth, especially if the incident signal be nearly fully modulated.

For the purpose of illustrating the argument, an artificial transmitter and receiver-c.r.o. combination were set up.

The transmitter comprised a signal generator tuned to approximately 455 Kc. Harmonic distortion was introduced by running the oscillator heater at reduced voltage, and applying heavy external modulation, which in all cases was sinusoidal. A detuned i.f. transformer inserted at the output terminals provided asymmetrical sideband cutting and phase shift. A video amplifier was connected in cascade to provide sufficient voltage to drive the c.r.o. directly.

The receiver consisted solely of an infinite-impedance detector and a single stage voltage amplifier. The latter was not free from appreciable phase shift at the higher audio frequencies, and it was consequently necessary to maintain the fundamental modulation frequency at not more than 200 c.p.s.

No special advantage would have obtained had any stage been run at radio-frequency, since it was possible, with

the existing hook-up, to present to the detector a carrier of normal i.f. frequency and any required degree of distortion.

Figs. 1a, 1b, and 1c show respectively the "transmitter" trapezoid, the "transmitted" wave on a quasi-linear time base, and the "receiver" trapezoid for a fully modulated transmission. Some curvilinear distortion is visible at the transmitting end.

Figs. 2a, 2b, and 2c illustrate, in the same order, the effects associated with an overmodulated wave, while, in the remaining figures, the "transmitter" distortion has been increased to an astonishing degree. The departure of the "receiver" pattern from the trapezoidal (or triangular) form is, in all cases, slight, and then only a function of detector and audio-amplifier distortion.

Thanks are extended to Mr. D. J. Barrow for the photography featured.

HINTS FOR FS6 USERS

CRYSTAL CONTROLLING FS6 AND IMPROVING THE MODULATION

The FS6 is a very convenient and useful set, but it has several drawbacks, firstly, the frequency is not very stable, and secondly, its modulation is poor.

On taking the transmitter unit from the case, a small name plate will be seen near C4, remove this plate, and in approximately the same position, drill the aluminium chassis to take two banana plug sockets at crystal holder pin spacing. One of the sockets will need to be insulated from the chassis and it is a help when drilling the holes to loosen the screws holding the oscillator tuning assembly, and partly withdraw the assembly. Don't drill into the final tank coil.

Fit a soldering lug under each socket on the oscillator side of the chassis, connect the insulated socket to the oscillator grid (this is soldering lug No. 9 on the terminal strip) and connect the other lug to the nearest earth point.

On the top of the valve compartment will be found a resistor and condenser mounting strip, remove C11 entirely. This was the grid coupling condenser. Change R7, which is part of the grid network of the modulator tube, from 2,000 ohms to 10,000 ohms. This value seems to give the best all round results. Any increase results in severe over-modulation and distortion as checked both by ear and with the c.r.o.

In tuning up the set in the absence of a plate milliammeter, it will be found that with the tuning condenser set approximately two dial divisions on the high frequency side of the position where the crystal stops oscillating, operation will be very stable, and there will be no trouble getting oscillation started.—VK3PW.

Interstate on 50 Mc.—How It Happens

On a number of occasions recently Interstate working has been possible on 50 Mc. for periods of the order of half an hour. Such conditions are usually due to what is known as "Sporadic E."

The Ionosphere consists of two main reflecting regions, the E region at a height of about 60 miles and the F region 150 to 300 miles up. The F region will very seldom reflect 50 Mc. waves under any conditions. The E region has a fairly regular diurnal variation of critical frequency (i.e. the highest frequency it will reflect straight down again) rising to a maximum of about 4 Mc. at midday; but, in addition, it may show sudden erratic increases in ionisation which will reflect higher frequencies. For a given intensity of ionisation a much higher frequency will be reflected at oblique incidence than at vertical incidence, e.g. if the highest frequency at which a signal will come back vertically is 10 Mc., then communication between stations 1,000 miles apart might be possible on a frequency of the order of 50 Mc. For such communication, however, the reflecting surface would need to be midway between the two stations.

"Sporadic E" ionisation is patchy in space as well as in time, as it is usually a cloud of ionisation moving at a speed of some few miles a minute. Therefore, when communication is established between two points (whether one-way or

two-way) it indicates that such a cloud was present somewhere approximately half-way between those points. From an examination of the time when there was a circuit between different points it is thus possible to trace the movement of the cloud.

The Radio Research Board is interested in tracing these movements, and would be glad to have information from Amateurs of any transmissions made or heard on 50 Mc.

As an example of what can be done, take the case of 4th July, 1948.

It was reported that 4BT had worked 2NO from 1400 to 1450 hours on 50 Mc. Radio Research Board was making fixed frequency observations on 50 Mc. on this day and the record showed Sporadic E which became very strong after 1200 but faded out at 1340. It was obvious, therefore, that the patch of Sporadic E was moving North and had reached a point half-way between 4BT and 2NO at about 1430 hours.

At Brisbane there is an ionosphere recorder which runs through the range 1 to 13 Mc. every 10 minutes. This recorder showed a maximum of Sporadic E at 1400 to 1410 but its maximum frequency was only 4.9 Mc., which would not be sufficient to give 50 Mc. transmission. It would appear, therefore, as if the centre of the patch passed to one side of Brisbane.

There is also an ionosphere recorder at Mount Stromlo Observatory, Canberra. This recorder showed Sporadic E reflections above 9 Mc. from 1250 to 1310 and then cutting off quickly. It looks, therefore, as if our cloud passed almost over Canberra in its travels.

There is a recorder at Hobart but it was out of operation on that day.

As a result of these observations we know that this patch of Sporadic E was moving in a northerly direction but we do not know much about its E-W movement or where its centre was.

We understand that VK5s were hearing VK4s and VK2s that day, and if we had some reliable times from S.A. we could make a much more accurate estimate of the direction of movement of the cloud and also get some idea of its size and velocity. If anyone has such information in his log, please let us have it. Also, when you make or hear 50 Mc. contacts note the time, particularly of cutting out, as accurately as possible.

Mr. Carruthers (VK2PF) has been collecting information and passing it on to the Radio Research Board, so please send it to him. Sam Waters (VK2SC) is now with the Radio Research Board and would also be willing to receive reports.

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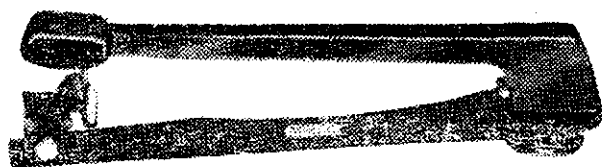
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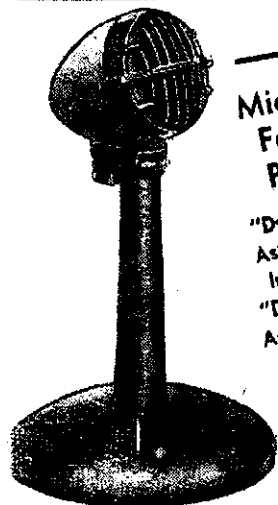
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AMPLITUDE MODULATION

BY E. A. CHARLES*, VK5YQ

INTRODUCTION A few notes in simple language¹ on some aspects of a.m., many of which are not to be found in the usual shack "handbook." It is hoped they will be of some use when planning new equipment, or when asked to give someone a report on their modulation over the air.

FACTS AND FIGURES All the short wave broadcasting stations of the B.B.C. have their carriers modulated to a maximum of only 80% (on peaks)².

Some of the medium wave broadcast stations of Australia do not transmit any frequencies above 5 Kc.

A change of 1 decibel is said to be just perceptible to the human ear. You have very good hearing if you can detect a change in level of 2 db. The average person can notice a change of 3 db at louder levels, but finds it difficult at weak levels. However, a difference of 3 db can make all the difference between "readable" and "unreadable" on weak signals.

When listening to strong signals on a receiver with a.g.c. (a.v.c.) the "S" meter shows changes in carrier signal level but the a.g.c. limits the audio output. Without a.g.c. there is usually QSB, except on local stations where the ground wave and reflections from miscellaneous objects often produce curious results.

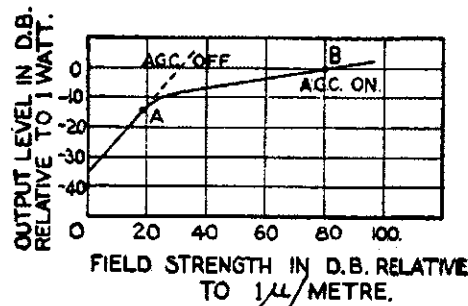


Fig. 1.

An example of one average receiver is a change of only 12 db in audio output for a change of signal input (constant modulation depth) of 60 db. In the diagram (Fig. 1), the slope of the curve AB depends upon the variation of the gain of the controlled tubes with the bias and the amount of delay voltage applied. In this instance the delay voltage is 10 volts and the 30 volts bias is sufficient to change the receiver gain by 48 db.

* 193 Young Street, Unley, South Aus.

¹ Not that I know any other; in accordance with the views of VK3GE and VK2NO—my early instructors.

² List of Broadcasting Stations published by the Bureau of the International Telecommunication Union, 1940.

The 50% increase in r.f. power output at 100% modulation should raise the aerial current by 22% on the unmodulated value; e.g. if the r.f. meter shows 1 amp. line current, it should rise to 1.22 amps. when the transmitter is modulated 100% WITH A STEADY TONE—IF the transmitter is capable of 100% linear modulation. With speech it will show less due to the rapidly changing average and peak levels, and due to the damping of the meter.

The percentage of modulation should read 100% for both positive and negative peaks, and there should be no carrier shift. However, it is possible to have different readings for positive and negative peaks, and carrier shift, with LESS than 100% modulation! This can occur when the transmitter is incorrectly tuned or mismatched. Incorrect tuning can cause over-modulation!

MODULATION The Table below shows the useful power at various modulation levels:—

Percentage of Modulation	Percentage Total Power in Carrier	Percentage Total Power in Sidebands
0	100	0
25	97	3
50	89	11
75	78	22
100	66.6	33.3

Approximate depths of modulation for changes of audio input level:—

DB Down	Mod.	DB Down	Mod.
1	89%	7	45%
2	79%	8	40%
3	71%	9	36%
4	63%	10	32%
5	56%	20	10%
6	50%		

The above figures for side-band power hold only for steady tone; for speech the value is about HALF!

Average level of speech is usually around 10 db down on the peak values. Some voices have a change of up to 100% in peak ratio, depending upon just how the speaker voices the sound; i.e. changes in intonation or in pitch. So, using high fidelity audio equipment (no limiting or compression) the average level for voice must be attenuated to below the 30% modulation level, in order to prevent overmodulation on peaks. At one broadcast station I have visited, speech is turned down on the fader so that the PEAKS, as recorded on the monitoring level meter, only reach a level that corresponds to 48% modulation with steady tone input. However, some voices still bring in the over-modulation indicator on certain words!

If you can visit a broadcasting station, you will see the various levels as shown on the line input, and monitoring equipment, and on the percentage modulation meter, and see just what the average level of modulation is for the

different types of music and speech. Listening to the daily distortion and noise tests with 1,000 and 400 cycle tone may give some idea of the performance of your receiver and hearing. Some stations test at levels of 48%, 90% and 100% modulation with 400 cycle tone (i.e. 6 db down, 1 db down and 100% modulation).

OVER MODULATION, SPREAD, SPLATTER AND SPLASH

In a Class C r.f. amplifier, plate modulated, where the audio power input is in excess of 50% of the r.f. power input at any instant, or where the Class C stage is incorrectly tuned, or where the negative peaks cause cut-off, the transmitter is over-modulated. The above conditions can cause sharp-fronted waves that generate high order harmonics resulting in the SPREAD of the carrier over quite a few adjacent and distant frequencies with distortion.

It is possible to modulate "200%" on positive peaks and not overmodulate IF you can limit the negative peaks to below 100%; but not normally without introducing distortion. In this case of doubling the positive peaks, four times the audio power would be required (i.e. 200 watts of audio compared to 50 watts, for the 100 watts r.f. input) and the Class C stage would have to be capable of linear modulation with this input! And the peak power output becomes nine times the carrier power!³

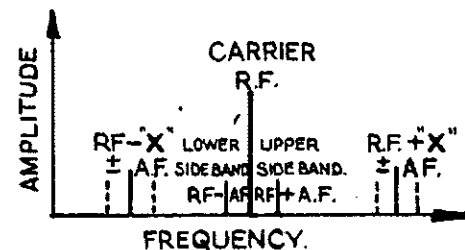


Fig. 2.

It is possible to have high frequency SPLATTER with less than 100% modulation. High harmonics caused by clipping can cause this if not filtered out. Another cause is where the modulator tubes go into supersonic oscillation (usually with the a.f. signal input) causing the carrier to make appearances, on modulation, higher and lower, and often far removed from the carrier's correct frequency and sidebands, as diagrammed "X" in Fig. 2. Transient frequencies, unrecorded on a meter due to inertia can also cause this effect.

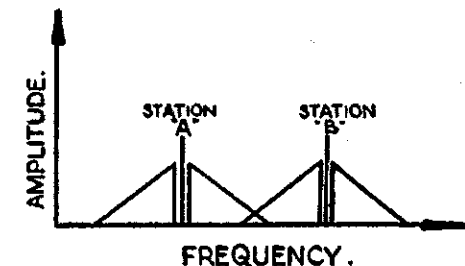


Fig. 3.

³ Grammer, QST, February, 1940.

Fig. 3 illustrates what is known as "sideband SPLASH." This is often heard spasmodically between stations working on nearby frequencies, where the modulating audio frequencies cause the sidebands to overlap. This is often mistaken for overmodulation owing to its unintelligibility.

The "mysterious" b.f.o. method of checking modulation is clearly summarised by VK5AI† as follows:—

"The estimation of percentage modulation (average? or peaks?) via listening on a receiver is an art requiring a high degree of training and perception and a thorough knowledge of the operation of the particular receiver.

"If Ham 'A' reports Ham 'B' as 85% modulation, then Ham 'B' must have a lot of courage to admit his 'technical' inability to measure Ham 'A's' modulation 'percentage.' To demonstrate that his knowledge is equal to that of Ham 'A,' he guesses Ham 'A' is modulating 90%! They are both guessing.

"A change of 1 db level causes a change of modulation from 80% to 90%, or 90% to 100%, and if you can detect a change of ONE db with any degree of exactitude, Brother, you are pretty good!

† E. D. Reilly, 24 Marshall Terrace, Brooklyn Park, South Australia.

"Tune your receiver off the sideband and you will hear some strange sounds, but that does NOT necessarily mean the station is overmodulating. Turn the b.f.o. on! Turn the b.f.o. off! Turn it off and leave it OFF—you are only guessing, we know you are only guessing; you know you are only guessing—why try to fool ourselves? With an ever-changing but very much less than a maximum possible of one sixth of the carrier power in one sideband containing the audio frequencies, you turn the b.f.o. on, you turn the b.f.o. off, you have measured the percentage of modulation of a COMPLEX wave—NO SIR!

"Try adding a b.f.o. to your b.c. receiver and use it when the b.c. station is modulating at a high percentage of modulation—you may learn a lot.

"You are biting into your carrier OM: 'Am I biting into my carrier OM?' You TRY to BITE into your carrier OM!"

CHECKING However, the responsibility for not overmodulating rests firstly, finally and solely with the station concerned. What the other fellow says he is hearing is quite likely true, there, but is not necessarily correct. And your signals are less likely to continue to be so on any subsequent transmission, for so many factors can change—and you cannot even argue

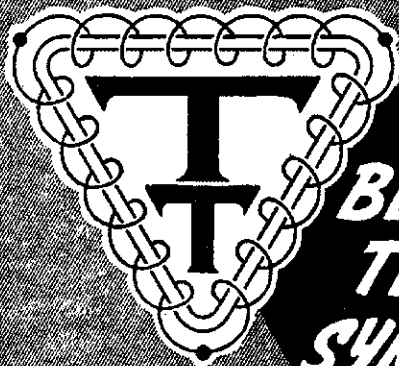
unless you are monitoring the signal continuously yourself.

If a c.r.o. is not readily obtainable, a simple Negative Peak Indicator (set to indicate at 80%) is easy to install. The only thorough check I know is viewing the signal using a good receiver and a Panoramic Adaptor. The normal c.r.o. (on receiver or transmitter) does not show splatter when monitoring a signal. The degree of QRM is left to be guessed on receiving checks unless a Panoramic Adaptor is used—with it you "see" the QRM and its relationship.

CONCLUSION When it is known that the antenna radiating efficiency of one of the high power long wave transmitters in England is only 11%, that only at 100% modulation with a steady tone is a maximum of one sixth of the carrier power in one sideband, and that a single-signal or highly selective receiver only makes use of one side-band, then it is readily understood the revival of interest of Amateurs in single-sideband transmission, apart from the less QRM angle.[‡]

And likewise we begin to realise the advantages of f.m. where there is effectively 100% modulation at all times. Here's hoping we get a n.b.f.m. channel allocated in the new 21 Mc. band.

‡ Editorial, QST, January, 1948.



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THE RESISTANCE OF FOLDED DIPOLES

The theoretical side of Folded Dipoles has been well covered in past issues of "Amateur Radio," but for those of us who shun the Mathematics involved, this simple Abac, reprinted from Oct. 1947 R.S.G.B. Bulletin, should remove the furrows from the brow.

With the aid of a straight edge, the increase in impedance over that of a half wave dipole by the addition of one or two parallel elements, can be readily ascertained.

The method of using the Abac can be best illustrated by several examples.

- Let d_1 = diameter of the driven dipole in inches.
- d_2 = diameter of the parallel element, or elements in inches.
- D = spacing, centre to centre, of two elements in inches.
- K_1 = step-up ratio over a half wave dipole for one parallel element.
- K_2 = Step-up ratio over a half wave dipole for two parallel elements.

Example 1—

$$\begin{aligned} d_1 &= \frac{1}{4}'' = 0.25'', \\ d_2 &= 1'', \\ D &= 3''. \end{aligned}$$

The diameter of the element connected to the feeder 0.25" (d_1) is found on the scale on the right hand side of the paper, point "A".

A straight line is drawn across the chart through point "B", which is the spacing (3"), cutting the left hand scale of $2D/d_1$ at point "C". A similar procedure on the three lower scales, i.e. from "E" at 1", through "F" at 3", to "G" gives $2D/d_2$. The straight edge is now laid between the points "C" and "G", and it cuts the horizontal scale at the point "H", which is 7.7. If the dipole has three elements, the lower

(Continued on Page 11)

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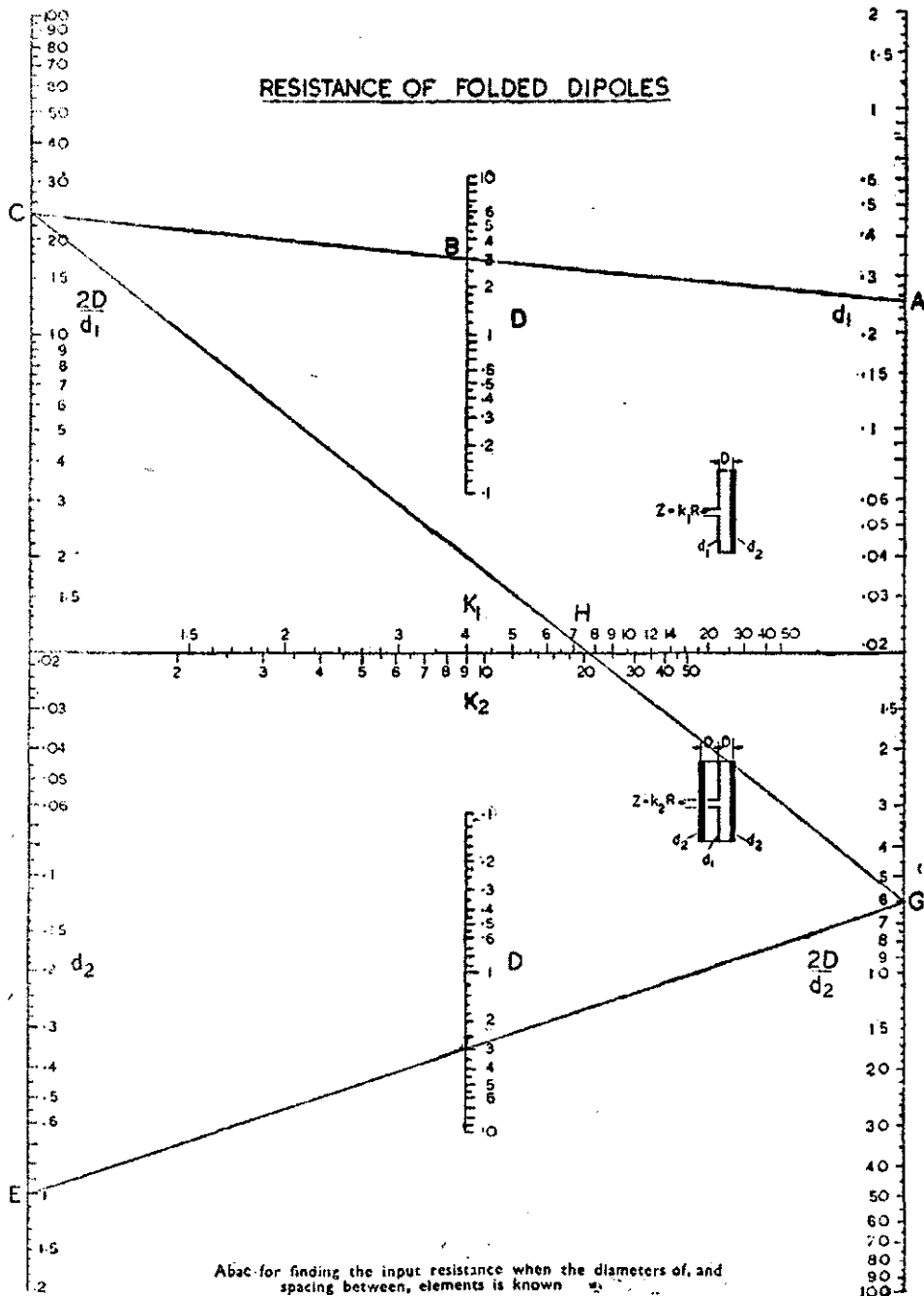
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Resistance of Folded Dipoles

(Continued from Page 9)

horizontal scale is read, giving 20.6. Therefore if we wish to feed a 3 element beam with an impedance of 10 ohms, constructed of $\frac{1}{8}$ " diameter rod for the fed element, and with a parallel cable element $\frac{1}{8}$ " diameter, and spaced $\frac{3}{8}$ " centre to centre, our co-axial cable should have an impedance of $10 \times 7.7 = 77$ ohms, or with three elements in the folded dipole $10 \times 20.6 = 206$ ohms.

Another application of the Abac is where we know the impedance of our feed line and beam, and wish to know the size of the driving element.

Suppose it is required to make a dipole match a cable of 110 ohms, and it has a director and reflector so spaced, that a single dipole would have a resistance of 10 ohms. The ratio required is therefore 11, which is likely to be obtained more easily with a three conductor arrangement. Suppose we choose a $\frac{5}{16}$ " diam. rod for the fed element and a spacing between elements of 2".

Example 2—

$$\begin{aligned} d_1 &= 0.3125" \\ d_2 &= ??, \\ D &= 2". \end{aligned}$$

Starting with $d_1 = 0.3125$ " and $D = 2$ ", we get $2D/d_1 = 12.8$. Laying a line through the factor 11 on the lower horizontal scale gives $2D/d_2 = 9.1$. Laying a line from here through $D = 2$ ", gives a value of $d_2 = 0.44$ ", which is almost exactly $7/16$ ". The dipole will therefore consist of a centre element $5/16$ " in diameter, with a $7/16$ " diameter rod, spaced at 2" centres from it, on either side.

Practice in the use of the Abac can be obtained by working out the examples given in May 1947 issue of "Amateur Radio," remembering that the designations a_1 and a_2 are radii, and must be converted to diameters for use in the Abac.

In Table 1 following, the generally accepted impedances of two, three and four element close-spaced beams are given. These impedances may vary due to height above ground, and proximity effects, but give an average on which to base calculations.

TABLE 1

Type of Beam	Element Spac.	Imped.
Two Element		
Reflector	0.15λ	24 to 30
Two Element		
Director	0.1λ	14 to 26
Three Element		
Director	0.1λ	5
Reflector	0.1λ	
Three Element		
Director	0.1λ	9
Reflector	0.15λ	
Three Element		
Director	0.2λ	18
Reflector	0.2λ	
Three Element		
Director	0.25λ	30
Reflector	0.25λ	
Four Element		
Director 1	0.2λ	13
Director 2		
Reflector		

EMERGENCY NETWORK ACTIVITIES

When power lines and telephone communications were interrupted at approximately 0300 hours on 6/9/48 by a cyclone which hit the Mornington Peninsula and South West Gippsland areas, the W.I.A. Emergency Network was again operative.

As no communications existed between Red Hill, Mornington, Frankston, and Rye, and Broadcast Station reception was not available due to a.c. power line failure, 3VL and 3US (Red Hill) operating off batteries made contact with 3ABO (Mornington) and 3UG (Rye) at approximately 1000 hours.

The first link with Melbourne was established via 3CA (Williamstown) who advised the Wireless Branch P.M.G. that a circuit existed. Later 3AWO (Oakleigh) was contacted, this resulting in a direct P.M.G. telephone link with Melbourne.

To ensure that contact between the Peninsula area and Melbourne was not lost, two other circuits were arranged, one via 3BI and 3MH (Ballarat) and P.M.G. telephone to Melbourne, and another via 3BU and 3APG (Geelong) and P.M.G. telephone to Melbourne. Hourly schedules were maintained on these circuits.

During the emergency period 3QZ (Tralagon), 3ALS (Yallourn), 3DI (Leongatha), and 3CI (Foster) were in close contact with 3VL and at the request of 3QZ, who wanted information for the State Electricity Commission as to the position of power supplies in the Foster-Leongatha areas, 3VL contacted 3DI and 3CI.

It might be of interest to mention that 3CI was first contacted by a short wave listener at Foster, who heard 3VL calling for a station in that zone. Messages between Mornington and Red Hill were also handled for the S.E.C.

The network concluded activities at 2000 hours. The equipment used at 3VL may be of interest to those planning emergency work this summer as this station was entirely battery operated. Transmitter: two stage unit, 3.5 and 7 Mc. operation, crystal oscillator 6V6G with power amplifier 6V6G, power input to final approx. 4 watts. Modulator: JT30 microphone with 6J7, 6G6 and 79 class B arranged for plate modulation.

POWER SUPPLY FOR CLASS C WAVEMETER

Those of you who have obtained a Class C Wavemeter, a very simple and efficient power supply can be constructed from the existing vibrator unit. The vibrator itself is removed and a 6X5GT put in its place. The secondary of the vibrator transformer is wired to the plates of the rectifier, the heater is connected in parallel with the primary, and a filter placed in the h.t. from the cathode. With 6 volts a.c. applied to the primary the required voltage for the Wavemeter is obtained.—VK5MD.

Receiver: H.R.O. home receiver. Antenna: half wave centre-fed tuned feeders. Power supply: vibrator operated from 6 volt accumulator. H.T. output 250 volts at 50 Ma. Power supply arranged for switching to transmitter or receiver respectively.

Appreciation is extended by the Central Executive of the Emergency Network and the Victorian Division Council for the work covered by the under-mentioned stations: 3ABO, 3ALS, 3APG, 3AWO, 3BI, 3BU, 3CA, 3CI, 3DI, 3MH, 3QZ, 3UG, 3US and 3VL.

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QUESTIONS AND ANSWERS

CONTEST NEWS

Q.8.—Has anyone any dope on the Air Ministry receiving unit Type 161, No. 10DB/6106?

Q.9.—A half wave antenna is quoted as having an impedance of 73 ohms at the centre and 3,000 ohms at the end. How does one find the impedance at other points along the antenna?

"HETROFIL"

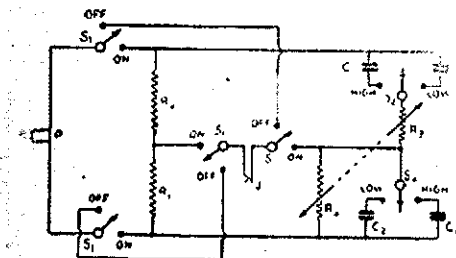
A request to publish the circuit of the "Hetrofil." Here it is, from QST for September, 1939. It is a resistance capacity Wien bridge, inserted between the audio output of a receiver and the phones. The bridge has a sharp rejection notch at a frequency in the audio range determined by the dual variable resistance. This makes it possible to "phase out" a hetrodyne since the notch is sharp and deep and so does not cause too much audio distortion for phone reception.

In the figure, P goes to the audio output from the receiver and phones are plugged in at J. The condition for balance of the bridge is that R2 is twice R1, R3 equals R4 and the two condensers C1 equal. If this is so then the rejected frequency is the reciprocal of 2 pi times R3 C1.

S1 switches the audio either straight to the phones or through the Hetrofil. S2 changes the frequency range, the high range going down to 350 cycles and the low down to 65.

Using commercial tolerance components there is an insertion loss of about 10 db and the attenuation in the notch is about 60 db. And it is a lot cheaper than a crystal filter.

Some suitable ganged potentiometers (50,000 ohms) have been in disposals equipment lately. The values of the condensers C1 for a suitable frequency range can be found from the equation above.



The "Hetrofil" circuit.

- C1—0.05 uF.
- C2—0.25 uF.
- R1—1,000 ohms.
- R2—2,000 ohms.
- R3, R4—10,000 ohms, variable.
- J—Phone Jack.
- P—Phone Plug.
- S1—4 Pole Double Throw Switch.
- S2—2 Pole Double Throw Switch.

VK-ZL CONTEST

The prizes to hand for the VK-ZL Contest are listed below. At the time of writing, there are insufficient prizes for all sections, but more manufacturers have been approached and should more be made available, the list will be completed and broadcast from the W.I.A. Stations.

The W.I.A. is greatly appreciative of the generosity of the manufacturers who have made these prizes possible, and it is hoped that Hams will take note of these firms and show their co-operation.

Open C.W.—First Prize: Complete complement of valves for 5-inch Oscillograph comprising 1 type 3C4G, 2 6J7Gs, 2 6SN7GTs, 1 6V6GT, 1 AV11, 1 884, 1 5BPT; Second Prize: 2 Transmitting Tubes.

Open Phone.—First Prize: 100 Watt Universal Modulation Transformer, Type TA908; Second Prize: Order to value of £5 for Eddystone Components.

28 Mc. Phone.—Kingsley N.B.F.M. Adaptor.

28 Mc. C.W.—Type 815 Valve.

14 Mc. Phone.—Modulation Transformer, 50 watts.

14 Mc. C.W.—Order to value of £5 for Transformers, Chokes, etc.

7 Mc.—Complete AT5 Transmitter.

Receiving.—First Prize: Ferrotune Foundation Kit for Broadcast Set with Extension Speaker; Second Prize: 0-1 D.C. Mill. Meter with Multimeter scale.

The following are firms who donated the prizes:—Amalgamated Wireless Valve Co., complete complement of valves for 5-inch Oscillograph; Keith Harris & Co., order for £5 of Eddystone parts; Red Line Equipment, order for £5 of Transformers, Chokes, etc.; Trimax Transformers, 100 Watt Modulation Transformer, TA908; Price's Radio, Sydney, Type 815 Valve; Ferguson's Radio, Sydney, 50 Watt Modulation Transformer; Ham Radio Supplies, Richmond, Vic., AT5 Transmitter; Vealls Radio, Melbourne, 0-1 D.C. Meter, with multimeter scale; Philips Electrical, Sydney, 2 Transmitting Tubes; Kingsley Radio Pty. Ltd., Melbourne, N.B.F.M. Adaptor and Ferrotune Foundation Kit with Extension Speaker.

REMEMBRANCE DAY CONTEST

The Remembrance Day Contest was very popular and 90 logs have been received and are now being checked. It is regretted that the rules could not have been published earlier, enabling more publicity, but this will be rectified in the future.

"CQ's" WORLD-WIDE DX CONTEST

RULES

1. Contest Period: 0200 GMT October 30 to 0200 GMT November 1 for phone, and 0200 GMT November 6 to 0200 GMT November 8 for c.w.

2. Bands: The contest activity will be confined to four bands, 3.5, 7, 14 and 27-28 Mc. Amateur Bands, divided into two divisions, c.w. and phone. Each of these two divisions will be divided into two sections, the one-operator and more-than-one-operator section. Thus, there will be: (1) one-operator c.w. section, and (2) more-than-one-operator c.w. section; (3) one-operator phone section, and (4) more-than-one-operator phone section. Sta-

FIFTY AND UP

VK2 ACTIVITIES—SYDNEY AND SUBURBS

The highlight of activities of v.h.f.s. for the month of August was the very successful Field Day conducted by Gladesville District Radio Club on 288 Mc. principally and using 144 Mc. as a stand-by channel. Sunday 29th August was the date and locations selected were Mt. Kuringai, Galston Heights, Bringelly and National Park Eugadine District.

Signals averaged R7-S in every location from all stations participating, and several mobile stations added interest to the proceedings. Stations co-operating, apart from the four 2ADY stations, included 2LZ, 2ABZ, 2NO, 2KI, 2YE, 2ALU, 2PL, 2IY, 2FK and 2PU. Equipment consisted mainly of 6J6 p.p. mod. oscillators, super regen receivers, and 4 to 5 element horizontal Yagi beams. Call signs included at the Club locations were 2AZ, 2AZO, 2AGB, 2AMG, 2AEX, 2HL, 2GR, 2NP and 2XE. Furthest station contacted was 2LZ at Wentworth Falls, a distance of about 40 miles with R8 signals at each end.

Activity on other bands has been at quite a low ebb and no break through reported from any section. Stations in the Newcastle District are requested to forward all observations of unusual hap-

penings in each section will compete for awards only with others in the same section. C.W. stations must work c.w. stations, and phone stations must work phone stations only; however, stations in the one-operator section, and stations in the more-than-one-operator section of both c.w. and phone divisions may contact each other. Stations may enter in more than one section, but logs must be submitted for each section.

4. Equipment: There will be no limit to the number of transmitters and receivers allowed, and competitors may use the maximum transmitter power permitted under the terms of their licenses.

5. Serial Numbers: C.W. stations will exchange serial numbers consisting of five numerals, the first three being the RST report, and the last two being their own zone number. Stations in Zones 1 through 9 will prefix their zone number with zero (01, 02, 03, etc.). Phone stations will exchange serial numbers consisting of four numerals. The first two being the readability and strength report, and the last two being their own zone number. Phone stations in zones 1 through 9 will prefix their zone number with a zero (01, 02, 03, etc.).

6. Contacts: Contacts between Amateur Stations on different continents shall count three points; contacts between Amateur Stations on the same continent but not in the same country shall count one point; contacts between stations in the same country, for the purpose of obtaining zone and/or country multipliers, shall be permitted but no points will be allowed for these contacts.

7. Multipliers: Two types of multipliers will be used: (1) a multiplier of 1 for each zone contacted on each band, (2) a multiplier of 1 for each country worked on each band.

8. Scoring: The Contest score will be the sum of all contact points multiplied by the sum of the zone and country multipliers.

9. Awards: Certificates will be awarded to section winners in each division of:

- (1) Each U.S. call area.
- (2) Each licensing area of Canada and Australia.
- (3) All other countries.

Certificates will also be awarded to each operator of each winning station in the more-than-one-operator section.

10. Zones and Continents: The W.A.Z. boundaries as defined in "CQ-DX" and in "CQ" for January, 1947, and the recognised continental boundaries as used for W.A.C. will determine zone and continent boundaries. The W.A.Z. maps are reasonably accurate, but should any question arise as to the positive location of a station, the official definitions will be final. The latest official country list as published in "CQ" for May, 1948, with any revisions announced since then will be used to determine country multipliers. Copies of the country list are also available from the "CQ" Editorial Office upon receipt of a stamped self-addressed envelope.

11. Eligibility: The contest will be open to all Amateurs but "CQ" staff members are not eligible for awards.

12. Disqualifications: Falsification of logs or illegal operation in any manner will be cause for disqualification. The decision of the judges will be final in all cases.

penings on v.h.f.s. to 2ADT who has volunteered to aid as co-ordinating officer to forward these observations to 2FF who is Liason Officer to Radio Research Board. It is important to note exact times of signals appearing and fading out, as this is of the utmost interest to the University in connection with its work on Ionospheric Predictions.

A contest is being conducted by the N.S.W. Division on v.h.f.s. which include 50, 144 and 288 Mc. and will run over a period of three months commencing 1st October and concluding 31st December. Rules and regulations governing this contest appear in 144 Mc. Digest. Full co-operation from all stations active on v.h.f.s. is requested with a view to populating these frequencies and stimulating interest in general on v.h.f. bands.

VK4 JOTTINGS

V.H.F. activity in VK4 is at a low ebb at the present time—paradoxically enough, everyone has the necessary gear to go on, but the 50 and 144 Mc. bands are conspicuously devoid of signals. A movement is afoot however to re-activate 50 Mc. It would seem that the granting of 144 Mc. to Amateurs brought about the demise of v.h.f. activity in VK4. Our numbers, always small, became scattered over two bands and seemed to precipitate the end of regular activity.

(Continued on Page 24)

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MINIATURE DIAL

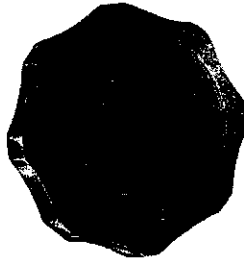
This useful dial of 2" diameter, is engraved 0-100 degrees, and fitted with a fluted instrument knob. It is available either for direct drive, taking a $\frac{1}{4}$ " spindle, or fitted with a precision 10-1 reduction slow-motion drive. Two finishes are supplied—matt black or matt silver, with contrasting engraving. An index strip is supplied. Fixing is by two 4 B.A. bolts, which are supplied.

Cat. No. 595. Direct Drive. 2" dial. Black finish 10/-
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1089



1076



593

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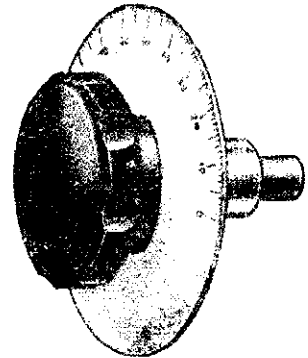
A high-grade fluted knob of polished black bakelite, $3\frac{1}{2}$ " diameter, with brass insert for $\frac{1}{4}$ " spindle. Fitted with two grub screws.

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As Cat. No. 1076, but 1-3/8" diameter:
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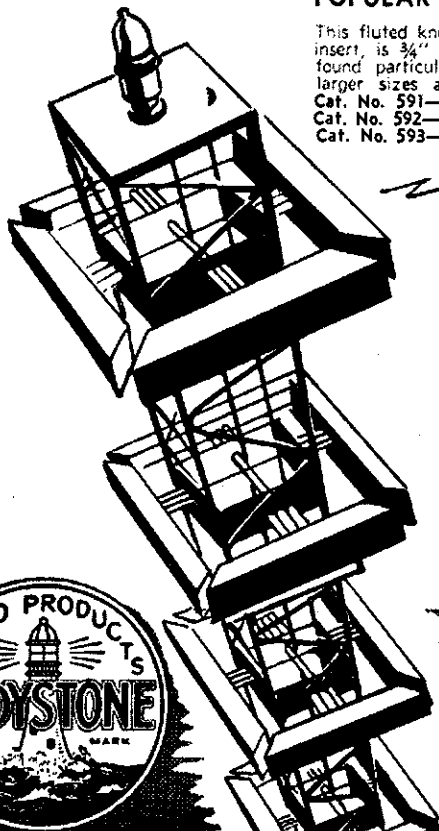
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NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor: H. F. Treharne, VK2BM, 5 Waimea St., Burwood.

Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, 116 Bogan St., Nymgan; **South Coast and Tablelands:** R. H. Rayner, VK2DO, 42 Pettit St., Yass; Southern: E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury. **Western Suburbs:** A. C. Pearce, VK2AHB, 48 Harrabrook Ave., Five Docks. **Eastern Suburbs:** H. Kerr, VK2AX, No. 4 Flat, 144 Hewlett St., Bronte. **North Sydney:** L. D. Cuffe, VK2AM, 779 Military Rd., Mosman. **St. George:** J. A. Ackerman, VK2ALG, 32 Park Rd., Carlton. **South Sydney:** V. H. Wilson, VK2VW, Cr. Wilson St. and Marine Pde., Maroubra.

VICTORIA

Secretary.—C. C. Quin, VK3WQ.

Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.1.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; **Western:** C. C. Waring, VK3YW, 12 Skene St., Stawell; **South Western:** B. Sctrine, VK3BI, 17a Raglan Street North, Ballarat; **North Eastern:** J. A. Miller, VK3ABQ, "Erinvale" Avenale; **Far North-Western Zone:** Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; **Eastern Zone:** J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 638J, G.P.O. Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor: F. H. Shannon, VK4SN, Mindlen, via Rosewood.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 423 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL

I.A.R.U. NEWS

The W.I.A. has recorded with the I.A.R.U. affirmative votes on proposals to admit to the Union the following Societies:—

Club de Radio Aficionados de Guatemala,
The Hong Kong Amateur Radio Transmitting Society,

The Philippine Amateur Radio Association,
The Radio Club Peruano.

Advice has been received from the I.A.R.U. that the Islenzkir Radlo Amatorar (I.R.A.), of Iceland, has been admitted to membership.

The A.R.R.L. in its annual report to the I.A.R.U. states that its membership has grown to a total of 67,000, and is expected to level off at about this figure. Licenced Amateurs in the U.S.A. now total 80,000 as against 55,000 at the outbreak of war.

A.R.R.L. has asked other Amateur Societies to keep, as far as possible, their 14 Mc. phone operation principally above 14,300 Kc. The A.R.R.L. Board of Directors decided against extension of their phone sub-band to the high frequency end of the band in order to leave the upper segment clear for non-W phones.

The I.A.R.U. has signed an extension, for one year, of its agreement with United Nations, and the U.S. Amateur Station K2UN is now well established at Lake Success. Details of this station will be available soon and it is expected that we will be able to give some particulars in these pages.

AUSTRALIAN AMATEUR CALL SIGNS

New Issues:

VK2AKL—A. Fairhall, Trevallyn, via Paterson.
2ALN—Rev. I. E. Whiston, The Rectory, Wyalong.
2ATK—K. T. Andrew, 32 Acolus Ave., Ryde.
2EP—K. W. Craig, 22 Stanley St., New Lambton.
2QZ—A. J. E. Robertson, Lachlan Flats, 108 Brook St., Wagga.
VK3AOK—G. H. Varely, c/o. Miss Jance, 11a Redan St., St. Kilda.
3ASL—S. E. Lesser, 155 Powlett St., East Melbourne.
3AWK—W. E. Loveland, River St., Quambatook.
VK5FN—R. J. Poole, 11 Short Ave., Da Costa Park, Glenelg.
5OD—Rev. R. C. Cuthberlet, Port Pirie Central Methodist Mission, Port Pirie, S.A.

SILENT KEYS

K. B. Warner, W1EH, who died on the 2nd September from a heart attack, was aged 53. He was associated with the A.R.R.L. for more than 29 years and was one of the best known figures in the Amateur Radio world.

VK6XA Bert Krygman, Moratai. Passed away on 11th July, 1948.

Alterations:

VK2ADB—D. G. Caldwell, Ashfield Hotel, Ashfield.
2AHW—H. T. J. Stone, 36 Wellesley St., Summer Hill.
2DJ—D. I. Johnson, 134 Griffiths St., Balgowlah.
2AGW—A. E. Hay, 6 Provincial Rd., Lindfield.
2AIP—R. G. Thorburn, 21 Feribank St., Marrieville.
2AF—A. F. Williams, 94 Docker St., Wagga.
2CZ—C. J. Patrick, 4 Oak St., Blackwall, via Woy Woy.
2GE—E. B. Mars, Commonwealth Bank, Moree.
2QI—C. Bowler, S.S. "Iron Master," 25 Castle St., Randwick.
VK3AFI—F. C. Lambert, 117 Gould St., Baimsdale.
3AGS—G. E. Sheeran, 8 Winifred St., Essendon.
3AHC—G. Griffiths, 59 Flemington Rd., North Melbourne.
3ALL—Dr. K. M. Kelly, The Vice Chancellor's House, University, Carlton.
3OK—J. T. Pease, 31 Redan St., East St. Kilda.
3PB—P. C. Bennett, c/o. 3SR, Congupna Rd., via Shepparton.
3QL—S. H. Le Breton, Post Office Quarter, Kaniva.
3QV—W. J. M. Bridge, Austral House, Benalla.

3TJ—R. W. Torrington, Thistle St., Pascoe Vale.
3TU—J. H. Irvine, 13 Rathmines Rd., Auburn.
3ZO—J. A. Cinfife, 21 High View Rd., East Preston.

VK4KJ—W. E. C. Sawyer, O.T.C. Radio Station, Thursday Island.

4NW—H. J. L. Woolnough, Shorncliffe Flats, No. 3, Shorncliffe, Pde., Sandgate.

4PL—W. C. F. Proposch, Fitzroy St., Wamunga, Queensland.

4RP—A. R. White, c/o. N. J. Mackinnon, Victoria Point, Brisbane.

4VK—R. A. J. Taylor, Dept. of Civil Aviation, Karumba.

VK5BR—A. L. Butler, David Terrace, Murray Bridge, S.A.

5CN—S. K. Howard, Mobile, Northern Territory.

5LJ—S. L. Griffin, 39 Brougham St., Magill.

5IS—S. Shearer, 68 Cremorne St., Unley.

VK6AX—F. G. Leybourne, S.S. "Asphalion," c/o. Dalgety & Co., Fremantle.

6HM—C. W. B. Holman, "Green Gables," 32 Federal Rd., Boulder.

6JW—J. C. Watson, 12 Bernard St., Claremont.

6SN—A. W. Sowden, 4 Wyndham St., Victoria Park.

VK7CJ—A. E. Finch, 12 Augusta Rd., Newtown, Hobart.

Cancellations:

VK2AYG—R. C. Ailsop, 30 Trafalgar Ave., Roseville.

2AD—A. W. Stewart, 3 Marshall St., Petersham.

2HP—A. J. Myers, 22 John St., Leichhardt.

2IH—Dr. A. P. Balthasar, 574 New South Head Rd., Edgecliffe.

2ZO—F. H. Bridgewater, 8 Albion St., Sydney.

VK8AAB—H. V. Eastwood, "S.S. Empire Prospect," 3CM—W. G. Clements, Lloyd St., Dimboola.

3IM—K. E. Pole, 71 Downshire Rd., Elsternwick.

3SZ—C. W. Adams, 30 Erica Ave., Glen Iris.

VK4AM—T. O. Gunderson, S.S. Tambua.
4CY—H. R. Greber, Grand Hotel, Wharf St., Maryborough.
4PL—W. C. F. Proposch, Fitzroy St., Namango.
VK9ID—I. D. Henderson, Rabaul, T.P.N.G.

HOWARD LOVE—VK3KU

With the sudden passing of Howard Kingsley Love on the morning of 29th July, the radio industry in general and the Ham fraternity in particular lost one of its most widely known and greatly respected members.

He had been associated with the radio industry for so long that it is little wonder that he was so well known. He was active in the interests of the industry and at times occupied with distinction prominent executive offices in various trade associations. He had travelled widely and his opinions were sought after and listened to with great interest by other leaders in the industry.

But it was as an Amateur Radio operator that the name of Howard Love became as a household word, and it would be no exaggeration to say that he was, at the time of his untimely passing, one of the best known Hams in Australia, as well as in other parts of the world.

Howard Kingsley Love was born at St. Kilda (Vic.) on the 9th October, 1895, and received his education at Wesley College, Melbourne. He obtained his Electrical Engineering Diploma in May, 1914. At the outbreak of the First World War in 1914, he joined the A.I.F. and went overseas, at the age of 19 years, with the 6th Battalion. During July, 1916, he was appointed Adjutant of the 2nd Anzac Cyclist Battalion which was commanded by Lieut-Colonel C. Heilfer-Evans.



When in 1917 the Australian Corps Headquarters called for volunteers to be pilots in the Australian Flying Corps, Howard stepped forward and was one of those chosen for this hazardous duty. He attended Details Camp at Halton Park, Wendover, and then went on the Royal Flying Corps School of Aeronautics in England, eventually graduating as a Scout Pilot. April, 1918, saw our new Pilot as a member of No. 4 Squadron, Australian Flying Corps, at their 'drome near Laventie in Northern France and flying "Sopwith Camel" aircraft.

Everybody who had the privilege of knowing Howard Love was impressed with his delightful sense of humour. He was never at a loss to regale his friends with a new story or a new twist to an old one, and so it is not surprising that at a time when it would be considered pardonable for most men to be thinking in more serious vein, Howard saw humour in the situation.

The occasion was some ten days after his appointment to No. 4 Squadron. The unit was flying in formation bombing and "shooting up" road formations behind the enemy lines when Howard's machine was struck by enemy fire. He landed his plane under control but was unable to avoid a shell hole and the craft overturned. Two enormous Germans, armed with rifles and fixed bayonets, arrived smartly on the scene and this effectively scotched any idea t Howard may have had of destroying the "Camel." He usually raised a good laugh when he completed the telling of the story in his own naive way. "They" wanted to take me prisoner and seemed intent on carrying out that idea. Rather than disappoint those two burly Fritz's, I marched away between them with their bayonets unpleasantly close to my person." Later the Germans dropped a note over his Squadron Headquarters advising that he was safe and sound. After questioning by German Intelligence, he was transferred as a prisoner-of-war to Karlsruhe and was one of the first batch of P.O.W's. to be released after the Armistice and sailed on the S.S. "Russ," landing at Liefie in Scotland.

It was while in England that Howard met and married Miss M. Pye, returning with her to Australia in the R.M.S. "Kaiser-I-Hind." This ship also brought back the main body of the Australian Flying Corps in May, 1919.

His interest in Amateur Radio was intense—"absorbing" probably would be a better word to describe his passion for the art, and many of the "earlier brigade" will recall his activities on A3BM Malvern in 1919, later OA3BM Malvern and still later (but after a period of inactivity) VK3BM Malvern, Victoria.

Howard Love was the first Federal President of the Wireless Institute of Australia as well as a Foundation Member of that body and was responsible for the organisation of a group of Amateurs in Australia to listen for transmissions from similar groups in U.S.A. who were then transmitting on the "short wave length" of 200 metres. History was made in May, 1923, when "signals" were heard by this group in the first Trans-Pacific Radio Communication.

For many years this enthusiast gave weekly talks on "Wireless" from 3A.O. and thus became known to countless people who, in those days, built their own radio receivers. This service was widely appreciated. His lectures to members of classes studying for the A.O.C.P. in the Centreway, Chapel Street, Prahran (Vic.) will doubtless be remembered by many present-day Hams with appreciation of their thoroughness.

It was in 1930 that Howard participated in the first Mackay Aerial Expedition to Central Australia as pilot and radio officer and upon his return was instrumental in organising all Radio Amateurs as a reserve for the R.A.A.F. thus providing an invaluable service during hostilities in the Second World War.

In the following year, 1931, he commenced activities with Firth Bros. Ltd., Melbourne, in the radio receiver manufacturing field, following a period in the timber business in association with his father. It was in this sphere of activity that he was partly responsible for the introduction of the famous "Loftin-White," direct-coupled audio frequency amplifier applied to broadcast receivers—the first commercial "high-fidelity" a.f. system.

During 1932, while Howard was manager of Radiovision Australasia Ltd., activities in television were conducted. Incidentally the address of that company—378 St. Kilda Rd., Melbourne—is practically identical with that of Kingsley Radio Pty. Ltd., which he formed in 1938 and during the following year, after the outbreak of World War 2, commenced the wartime production of Service Communication Equipment.

He applied, on 1st May, 1940, to the R.A.A.F. for active service but his services in that capacity were politely but firmly declined as he was the managing-director of a company engaged in the construction of large quantities of service communication equipment.

There would not be many Amateurs of today who have not heard of, or operated, the famous KCR11 (AR7) communication receiver and Howard Love was responsible for the design and ultimate production of some thousands of these outstanding units for supply to the R.A.F., R.A.A.F., Australian Corps of Signals, R.A.N., United States Navy, R.N.Z.A.F., Free French Forces and the Netherlands East Indies Forces. P.M.G. listening posts also used the AR7 and latterly, through the courtesy of the R.A.A.F.,

RAY JONES (VK3RJ), MANAGER

MD4JG requests that his QTH be published to avoid the large amount of time he has to devote to giving his address to stations worked—MD4JG Major John R. Farr, The King's African Rifles, Mogadishu, Somalia, East Africa. He also desires mention of the fact that he is ex-VQ4CJG, ex-VU2JG and G8CJG. Above information by courtesy of YEAADT who mentions that VK2YL and himself had worked ZD2GHK on c.w. on 28050 Kc. during afternoon 29th August.

Attention is directed to the world-wide DX Contest sponsored by "CQ" over the week-ends of October 28 and November 5. The first week-end is for phone and the latter for c.w. The Contest provides many novel features not previously included in any other Contest.

ZD4AH Mr. Grev Cawood, Box 287 Sekondi, Gold Coast Colony, was previously VK2ALC and would appreciate any spare copies of "Amateur Radio" that anyone can spare and care to post him or to VK2TG Alec Goldie, 54 Byng Street, Orange, N.S.W., who will undertake to forward them on to ZD4AH.

The Hamad Section of "Amateur Radio" produces results which have pleased Bob Hilder VK8AT who recently patronised that section requesting a back copy of "A.R." Up to 21st August Bob had already received two offers of the required issue. Bob had the misfortune whilst serving in the A.I.F. to lose all his files of Radio Journals and quite a lot of radio gear which he thought he had left securely locked up to await his return.

VK9BI Arn Wilkey expects to be in Melbourne on holidays in December next and has great hopes of a southern posting at the conclusion of his leave.

At its recent convention the Radio Club Venezuela elected YV5AY as its President, while the L.M.R.E. (Mexico) appointed XE1N to fill a similar office. Both are well known internationally as consistent DX stations.

My reliable and interesting correspondent Eric Treblecock, Box 12, Wynyard, again comes forward with an interesting budget of things heard on the bands. Although no listeners' event was staged in the recent R.D. Contest, Eric staged an unofficial contest for himself and ended up with 104 stations for 226 points using 3.5, 7 and 14 Mc. Eric has been concentrating his listening of late on 7 Mc. and has so far logged 176 Europeans, the last six being UF6AA, UF6AC, UF6KAB, Z9SD, AF4A, AP5B, UM8KAA, W6ODD/PIS, W6WEA/TRUK. Eric still needs a QSL from Zone 23 to qualify for H.A.Z. and awaits a card from either CSYR or AC4YN to fulfil that goal. Eric enthuses over 7 Mc. as a DX band claiming he can hear Europeans at good strengths every morning no matter what local weather conditions prevail. Eric and others are interested in the doings of the Heard and Macquarie Islands outfits and solicits such news be published in "A.R." regularly.

VQSAF, who has his QSLs printed on airliner forms, states that VQ8CB (14110 Kc.) is ex-VQ8AB and is on Chagos Archipelago. VQ8AB operated in Mauritius until January, 1947, then as VQ8AB in Chagos until May, 1948, when his call sign was changed to VQ8CB. From the same source comes the information that there have been no licensed FBS stations post-war and that Prince Vindh-Singh FR8VX, of the Reunion Island, was killed in a plane crash in Africa in 1945 enroute home from France.

Referring to par in these notes in September issue regarding TA8FAS, the following is the only QTH he desires to be used: TA8FAS Lt. John Adel, TUSAFO, American Embassy, Ankara.

Lindy W8BHW ex-W2BHW, whose DX list now totals 201 countries, celebrated the double century by becoming father to an 8LB daughter. Lindy promises some extra special c.w. signals on 28 Mc. during the next DX Contest per medium of a new rotary.

units were used by the Australian Expedition to the Antarctic.

During 1942 Howard Love made a visit to the United States of America on behalf of Munitions Supply to study the latest developments in communication equipment and applications of ferromagnetic iron dust core technique.

It was not until 1947 that Kingsley Radio Pty. Ltd. was organised for the peacetime production of radio components from the wartime production of service equipment and Howard Love, until his death was the company's Managing Director.

Amateurs all over the world will miss the regular "skeys" with VK3KU—they will mourn the loss of one who was at all times "one of Nature's Gentlemen."



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NEW SOUTH WALES

It has been said that Mr. Angus Robertson, Senior Technician of the Department of Civil Aviation, can lecture on any electronic subject at any time, at any place, with the shortest possible notice. He gave an exhibition of his powers by discoursing very pleasantly and learnedly without notes on "Frequency Modulation" to a record W.L.A. attendance of 180 members at Science House, under the chairmanship of our President Maurice Myers on Friday, 27th August. The rapt attention of his audience paid tribute to the interest he aroused with his lucid explanation of a rather difficult subject to most of us and proved him to be one of the very best lecturers we have had for some time. At the conclusion of his exposition he was besieged with questions for half an hour and gave further proof of his mastery of the subject.

Among the distinguished visitors was the Federal Secretary VK3UM. He was persuaded to mount the rostrum and was asked so many questions about the DX Century Club, interference, contest, etc., that he promised to attend the next meeting for a continuance of the bombardment.

Roaming Sydney recently were 2NX and 2UY from Newcastle and 3WU (ex-G8PO) with Milly and Johnny just arrived from G land and now settled in Victoria.

NORTH SHORE ZONE

About the most noticeable thing on the Amateur bands over the last months has been the almost total absence of many of the die-hard DX hounds, due mainly, I guess, to the poor conditions that have prevailed. Consequently, my spies have learned that re-building has reached an all-time high in the zone. 2EO is among those busy re-building with the Contest well in mind, and plans to erect no less than three beams! 2ARM also QRT busily diving into f.m. receiver construction—present project being an 8-tube job with ratio detector. 2RA has hung DX away too, and is now making klystrons perk madly on 10,000 Mc.—yes, Megacycles! These u.h.f.s. will ruin you, Ray! 2OR is another inactive Ham at the moment, and like many of us, is in the hunt for a permanent location. Receiver building keeps him fairly happy just now. 2IT has broken into 14 Mc. with a long wire 10 half-waves long and 20 watts to push into it. 2AKW is also holding down the fort on 14 Mc. DX. 2XL, a newcomer up the line, is very active on 7 Mc. these days.

The Mosman gang seem to have gone overboard for the series-tuned Colpitts or "Clapp" oscillator in a big way. 2QC and 2TL have rushed them into service, and now look on crystals as relics of the early days. 2AI heard on quite a few occasions of late, still with that nice quality phone. 2GQ is being listened to with bated breath by quite a few b.e.f.s. who've discovered the shortwave band on their receivers. 2GW has reached the profound conclusion that the modern single signal super has some slight advantages over the trusty t.r.f., due of course, to post-war advances in the technical field. Well, progress is always with us! 2ABI is another new one at Hornsby, heard plugging along on 14 Mc. phone, while 2AIE, also at Hornsby, is busy on 7 Mc. phone. 2BG active on 50 Mc. with a 35 feet high 4-element beam pushing his sigs through the 387 local power leaks, sends in a batch of notes anent v.h.f. doings up his way. Many thanks Bruce, o.b. 2AH now perking on 50 Mc. with 50 watts to an 815, and three beams rotating on the same mast—two 50 Mc. and one 144 Mc. 2YM recently acquired a new call, but is not transmitting on the band yet. He is however listening on 144 Mc. 2XD active on 7 and 14 Mc. with AT5, but may soon move to 144 Mc. 2ABZ considers 50 Mc. too low in frequency, and has buzzed up to 144 Mc. 2ZN is also enthusiastic about 50 Mc., but hasn't been heard on yet! He doesn't like beams because they always point in the wrong direction anyway, even when they're pointing in the right direction!

SOUTH SYDNEY ZONE

No outstanding activities for this month so will commence with a few notes on local activities. 2AB heard working some good DX. 2AC has decided n.b.f.m. not so good. Interested in single sideband operation. 2CP has at last sorted his aerial troubles out by pulling all except one down. 2TI not very active at present due to pressure of business. 2IV active on 144 Mc. and building new rig for 7 and 14 Mc. 2VA works plenty of DX on 14 Mc. with that beam and excellent location. 2VW just finished building new receiver and transmitter. 2VJ busy getting new HRO working. 2ABB active on all bands between trips overseas as aircraft operator. Completing construction of new shack. 2ABC active on 28 and 50 Mc. with beams on both bands. Plenty of DX. 2ABU heard on 14 Mc. working phone DX.

WESTERN SUBURBS

Puzzle of the month! How can two well known local stations work a foreign phone station at the

same time, each unbeknown to the other? Maybe that was how they split the atom! 2AHP is on 14 Mc. c.w. and currently delving into an A.B.T. 2BF is trying to prove Einstein's theory by designing a quadruple conversion superhet. 2AZO is on most bands but very keen on that 288 Mc. stuff. 2AHU has cleared up his modulation troubles and has a nice signal on 14 Mc. 2QL continues to bash the ether in the Homebush area; plenty DX. 2FA leaves for the U.S.A. shortly. 2AKR gets out well on 28 Mc. 2YP is active and thrilled to bits about his new tower and beam. 2AHH clicked for KG6 and KG6 on 7 Mc. c.w. Heard testing his new phone was 2QQ on 7 Mc. Others heard on 14 Mc. were 2CL after DX, 2SA and 2SD hunting well, 2OQ working some good stuff on phone. 2FD is on rarely. 2DW is just "mad about" his v.f.o.—it's good! 2ADL comes on actively.

EASTERN SUBURBS ZONE

Activities on the various bands have been rather limited due to spasmodic conditions. Quite a few chaps are re-building. 2FJ is back on the air after six months spell—completely re-built, 100 watts, class B mod., inductively coupled fixed beam, active on 14 Mc. phone. 2AIG re-built including nice v.f.o. Ray says his v.f.o. is simple and stable. 2MB still building, using all new gear. 2WR has changed his QTH, not as good as the old one, still able to work DX. 2KF on 14 Mc. phone, going to try 28 Mc., and contemplates a beam. 2CE active on 14 and 28 Mc., just finished double conversion band-switching super. 2AFZ not very active, busy with noise limiter. 2SA heard using phone with nice quality. 2QY active on QRP 7 Mc. phone. 2ALW active on 7 and 14 Mc., also has new double conversion receiver. 2AJG confirmed c.w. man now on 7 and 14 Mc. phone, Laurie says quite a change. 2CF again active on 7 and 14 Mc.

We have a new station in the Eastern Suburbs, he is known as Moppy Harry (a Pirate). He acts as a self-appointed policeman breaking in on a QSO to pass an opinion or make a wise crack. We will soon catch up with Harry if this practice continues.

On checking in the call book I find there are over 60 stations licenced in this zone, of these only about half are active, there are however still too many to contact personally, so chaps keep a look-out for 2AX on 7 and 14 Mc. and pass along the dope on your doings—failing to contact on the air, ring FW 7053.

COALFIELDS AND LAKES

2AEZ after re-building is getting his share of DX and plenty heard calling 2AIO. 2KR the only one heard from Woy Woy. 2OC and 2RU faithful to the v.h.f.s. 2TY using 28 Mc. beam on 144 Mc. worked 2ADX Maitland and 2ADT Cessnock and has been heard in Singleton by 2JZ. 2JZ ready to go, a real old-timer, has beams on 28 Mc. and possibly 14 Mc. 2ALR a new arrival in Maitland hopes to be on soon, thanks for note. 2KF active on the week-ends, away week-days, works 14, 28 and 50 Mc. phone. 2KZ still needing two States for W.A.S. on 28 Mc., all with a single 807 and two tubes; may try new antenna on 50 Mc. 2AMU heard on 28 Mc. 2PZ not very active apart from transceiver on 144 Mc. Nil from 2MK. 2ADT been on holidays, little new DX. 100 countries verified now, active on 144 Mc. and still hearing the Blue Mountain gang on that band. 2YL leading quiet life, new receiver, a little tennis and spasms of DX.

NEWCASTLE

2AFS would like the guy using his call sign to please keep within the band. 2PQ has a new shack and is busy installing all the gear and preparing his rotary for 28 Mc. 2AHA has added the third element to his rotary on 28 Mc. and could be seen doing acrobatics up the top. 2TE is building a new final using lots of gear, so watch the cat-drums. 2FP about to build an RC'er for the DX season. 2AGY is reported to have a beam at his QTH, what about letting the gang hear it? No news from Maitland what about it?

WESTERN

2ACU still working DX on 7 Mc. c.w. 2YN has new microphone, OK on 7 and 14 Mc. DX phone. 2QA with a new v.f.o. and 75 ohm feed line. 2AMR active on many bands. 2XE moving to Coobarran (2QA's secretary's spelling). 2OK migrated to Melbourne for an indefinite period. 2EI working a lot. 2ALN new Ham at Wyalong with 6V0 c.o. and 807 final on 7 Mc. c.w. 2NK in lots of trouble with his modulator. 2JW has his QRO rig on. 2ALX changed to cathode modulation less trouble. 2NS' phone OK again now but still prefers c.w. 2IE has built another v.f.o.—series Colpitts. 2RN new Ham at Bathurst still on c.w. 2XP exclusively on 14 Mc. phone and gets nice DX with a double extended zpp. 2FH with the biggest array of all time—four elements wide spaced on 14 Mc., looks like the Harbour Bridge

going around. 2EF still QRL schools. 2HZ built for 288 Mc. but can't hear anything. 2LZ the reverse, hears everything on 288 Mc. 2LY has a new super modulation transformer, some good phone soon? 2ACP like the Arab is now in Queensland and no a.c.

SOUTH COAST AND TABLELANDS

We extend to 2PA our congrats for a dual honor—proud father and highest N.S.W. scorer in the R.D. Contest. Active in this zone on R.D. were 2OW, 2PN, and the scribe. 2OW 45 watts to an 807 final excited by a No. 11—six VK6 contacts in one hour on 7 Mc. c.w. a fair effort, rewound a tranny to get about 100 watts. Have noticed in the call book that a Rev. gentleman in Temora has a call and 2OW looks like worrying him to get on the v.h.f.s. 2AKE too busy except for a few contacts on 3.5 and 7 Mc., has said farewell to the old type 80, Type A Mark 3 doing nicely—soon to shift to a new home and some a.c. 2AIK West Wyalong complete with 3 stage v.f.o. all

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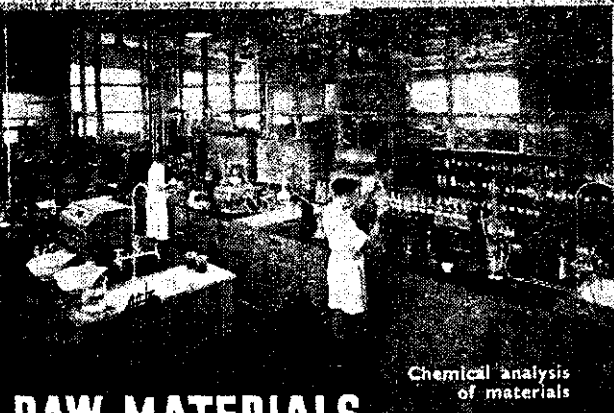
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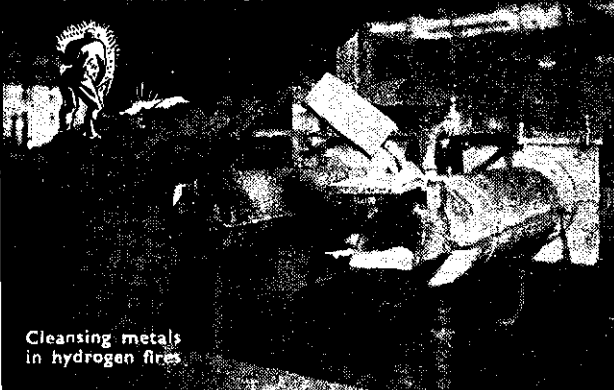


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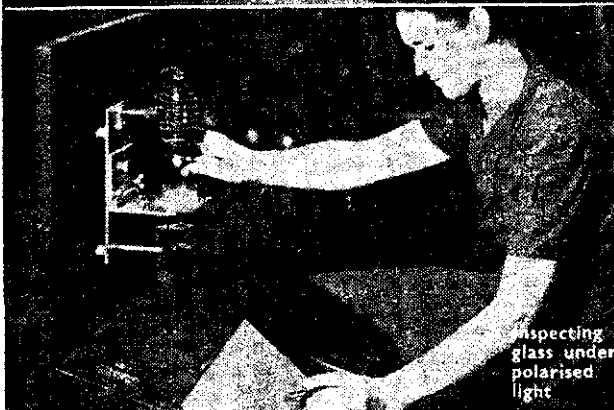


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GYOs, nice quality from a deaf aid headphone crystal unit.

Called 2TA by land line only to interrupt a 50 Mc. contact between 2PN Tumut and 2TA at Young. 2PN heard during contest and lucky fellow was QSO QGW. Was visited by Harry Hutton, of B.M.C. Duntroon, had a long yarn over eleven or eight or something. Harry operates 2RM but keeps up his old 2HY call for sentimental reasons. From the 'Gong 2UK and 2WP heard, 2AIP left the country for the smoke. 2WP's big sticks should be up soon. 2ALS parted with the QRO equipment. Happy with a strong signal from his QRP rig. 2DO after much scratching of the head and half smoked cigarettes survived the R.D. Contest, used a separate transmitter on 3.5, 7 and 14 Mc., really enjoyed the test. Best signals heard came from 4CG, 7AB, 2ZH, 2RA, 2EO, 2PA, 2AHA, 2JX. 2AHA beautifully operated c.w. a delight to copy. 3UM and 4NO also had nice signals.

SOUTHERN ZONE

No worries about local QRM in Albury as the gang are not active. With the approach of warmer weather there should be a move from firesides to shacks. 2EU has a new six foot rack to take the entire rig. 2VK sailed on the "Stratheden" for London, the YL soon to become an XYL. 2OJ moderately active on 14, 7 and 3.5 Mc., found it harder to get the final on 3.5 than 28 Mc. 2ANQ, 2QD and 2QE also 2JA all re-building, how about some news from Wagga?

NORTH COAST AND TABLELANDS

2AJB very active from Muswellbrook, although has had the call for years it is the first time enough space has been available for the rig; hopes to get on 3.5 Mc. before the summer. Seems to be great inactivity on the rag-chewing bands of the Lismore, Grafton and Murwillumbah gang, possibly due to re-organisation after the flood. DX has been heard calling 2NY on 28 Mc. however, 2DK active on 7 Mc. with only a few watts. 2JK and 2ARJ running 50 Mc. tests after a lot of delays in getting started. 2JK lost antenna in a high wind and the harmonics used on axe on feeders making re-erection just a little more difficult. 2FN home for the September vacation, swept cobwebs from rig and hit 7 Mc., proud owner of a new 640 receiver. Graham hit commercial radio with a talk on Flying Club activity. 2NN active on 7 Mc. with QRP. 2ASF has a new rig under way and is going QRO 2 to 10 watts! Jerry 2ZS (pre-war 2OP) running a few watts to an 807 Hartley. 2GH may be moving shortly to Rockhampton, he is with Aeradio. 2KN has a nice signal on 7 Mc. 2SH "Sound Effects Man" a consistent 7 Mc. man, getting gear ready for 28 Mc. plus a rotary. 2PA re-perpetrating from his R.D. Contest efforts. 2WC (ex-3WC) working 14 Mc. only, hopes to be into a new home shortly and will set up all the gear. 2UN works 7 Mc. occasionally to keep in touch with the locals.

DX NOTES BY VK2ACX

Conditions on 14 Mc. for the month of August have been fairly poor, with the result that there is not much to report in the way of DX. The magnetic disturbance during the week-end 7-8th had a marked effect on conditions and I am inclined to think present conditions are the aftermath, fade-outs being numerous.

2HZ had the good fortune to pull off two really good ones in PJOX Netherlands West Indies approx. 14100 Kc. T8 around 2130 hours and ZD2GHN 14025 Kc. T9 around 1730 hrs. 2VN worked the PJOX the night prior to 2HZ. Although 2VN does not get on very much these days, he seems to be there when "Hs" coming thru. Another for Morris was TU2LO in Turkey 14000 Kc. 1330 hrs.

2DI has received his W.A.Z. certificate—the first in VK I believe—congratulations Gordon. I suppose your DXing days are over now—are they? He has 170 countries and was heard chasing ZD2RGY couple of week-ends ago. The ZD was an S7 here calling OQ and although called by a few of us (including the W gang) he was not heard again. Probably the dogpile frightened him!!

2EO has been heard on from time to time working the good ones. Not so active these days, he is probably resting for the VK-ZL Contest. How's your country list now Dave? I believe you are around 146 countries. 2QL is still having his share of QRN from the electric trains and overhead h.t., although he still manages a new one now and again. His latest being two really good ones—FESAB and ZP3BL for 137. He is also W.A.Z.—his last victim on that issue was AC4YN.

QSL cards for FRSCE and FASXP are being returned via the D.L.O. which doesn't look too good especially for those who don't work either FO8AA or RV2/FO8. Has anyone any news of MP4BAB 14050 Kc. around 2300 hrs.? 2DI tells me that the R.S.G.B. mention an MP2 prefix for a station located at Dukan in Qatar, which is somewhere around the Persian Gulf.

For those who would like some information on the Italian boys on both Trieste and Sardinia, I

have the following: Trieste—HRC, INZ (c.w.), IBCB (c.w.), and MF2AA (usually on the high end of 14 Mc. phone); on Sardinia—ISIEH (phone), ISIAHK (c.w. and phone), and IIAEV (c.w.).

The pick of the DX during the month of August appears to be: AC4YN 14120-14130 Kc. around 2200 hrs., CT8AA and CT8AB v.l.o. around 2000 hrs. PZ1FM 2000 hrs., ZP3AW 14100 Kc. 2130 hrs., and ZP3BL 14050 Kc. approx. 1700 hrs. WSWEA/TRUK has been on a couple of nights but is not as active as he was a few months ago. HP1BR (ex-HP4Q when he was under cover) was there one Sunday helping a few out with a new one, including myself.

QSL cards from VQ8AB (now VK8OB) on Chagos have arrived for contacts dating back to early 1947. In a QSO with VQ8CB a week ago he mentioned that he does QSL 100 per cent., but as he can only clear his cards TWICE in every year (the boat only calls twice a year) he asks that you have patience—they will turn up in due course. Can anyone tell me how to extract a card out of the QX gang or UAIKEC and UAIKED in Zone 40? A card from Zone 40 is wanted here for the W.A.Z. certificate.

That's the issue for this month fellows. Please let me have your zone and country scores—also any DX news you have. Make sure it reaches me by the 5th of the month, so that I can catch the following month's issue. QTH 12 Schackel Ave., Kingsgrove, N.S.W.

VICTORIA

Congratulations to Doug Norman VK3UC who has won an Architectural Scholarship which enables him to study in England. He expects to leave for England in December and is most anxious to contact any G Hams in the London area. If you can help him his address is 19 Brighton Avenue, Preston, Victoria.

STANDARD FREQUENCY TRANSMISSIONS

The Council of the Victorian Division of the W.I.A. have decided that Standard Frequency Transmissions from VK3WI will take place every three months. The next transmission will be on the 26th October on the 7 Mc. band. Spot frequencies will be given every 10 Kc. from 7000 to 7200 Kc.

NORTH WESTERN ZONE CONVENTION

The Convention of the North Western Zone was unique in many respects. For a start it was held at a private home out in the country and not in a town. This was the reason for all the QRM about roads on 3.5 Mc. for the preceding week or so. There seemed to be many roads leading to 3BM and all the shortest and best according to their

advocates. However there was one thing that all agreed on, that was that when within a few miles of 3BM his sticks would be clearly visible and that there would be no mistaking his farm. I am sure too that it was unique for the catering. All of which was done by the wives of local Hams. None of us had eaten so many consecutive meals of turkey before and as for trifles and cakes, they seemed to be unending despite the greatest attacks made on them. It is usual for Hams to exercise their jaws at Conventions but not in the manner that they were used at 3BM's.

On Saturday morning cars from as far away as Seymour, Warrnambool and Melbourne were heading for Quambatook. 3HG, who had 3JA with him, collected 3II (your scribe) and we made Stawell for lunch seeing 3FW there just as he was taking off his white coat and shutting up shop. He directed us to the cats and put us on the right road from Stawell.

Following Bruce's instructions re roads we crossed the railway, round the dam and admired the sugar gums which are all that are left of the school that Bruce first went to, and then we saw the sticks! What Radio Australia is to a Commercial Station, VK3BM is to the usual Ham Station, so far as aeriels go. Any of the sticks holding up the ends of the Vec beams would do me for a mast and he has eleven of them while the central mast with the eleven beams converging on it looks like a giant's umbrella that has lost its cover. While the leads from the beams to the shack are like the telephone wires on a main road, and seem to be erected in a similar manner. But I am getting ahead of myself.

We ran into 3BM's yard and were hailed by those there before us and by Mr. Trebilcock 3TL who stapled our call signs onto our coats so that there was no need for introductions. We had just taken a look into the shack when there was a CQ call down the road and 3WQ, 3AG, 3PA and 3RU arrived from Melbourne. At least I think they all came with Charlie but as he was in a utility with a lot of Disposal gear, I may have been wrong. Bruce grabbed 3AG to look at a receiver and 3RU seeking game got a rifle. He was warned that the turkeys were domestic so went seeking lesser game elsewhere. Soon after this the Eastern Zone boys arrived. 3ABG had driven to 3TS and had then transferred the 50 Mc. gear to his car. They had then collected 3EP in Bendigo and arrived in time to hear Bruce work several Europeans getting 58 reports on phone. The next to arrive were 3ACE and the Old Pirate from Birchip. However when Treb earmarked him 3CH I was assured that he was genuine.

Bruce then asked us to collect our gear and allotted us to our quarters by the effective way of opening the door and leaving it to us to settle who slept where. Any riot or ill feeling amongst con-

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testants for the best position was quelled by the dinner bell, and it was a case of Ham to Ham and Turkey. This was the first of four such sessions and I think the longest, but, after a time the inner man could not take it. Bruce then gave a talk on Vee beams which was most interesting. He remarked that when they were as long as his were 850 ft. they were very easy to tune over the band. They were not bi-directional as shorter beams are. However he had also noted that with his array they were not as directional in reception as he had found when he began with fewer. He thought that this was due to the leads acting as a receiving aerial. He stressed that it was when conditions were bad that Vee beams came into their own and that he would be able to get through when no other station could.

The zone then held their formal business session when it was apparent that there were only thirteen members with some associates. A truly remarkable meeting for such a small band to set in motion.

3TL then announced the conditions of what he called a "Bruce" Auction of some radio gear donated by members of the Zone for the "Food for Britain" Appeal. The terms of sale were very novel and construed so that they generally favoured the seller. They were couched in legal terms with as many whereases and aforesaid's as there are 73s in a phone final. The main idea being to incite bidders to make the other fellow pay for it. This succeeded to the tune of about £30 for two sales.

There was in all 27 Hams present, and including the XYLs, YLs and Junior Ops, a total of 42 was counted, 20 of whom slept overnight.

From discussions during the zone meeting, the following points were noted:—(1) Congratulations to 3ML on his re-election as President and expression of regret that he was unable to be present at the Convention. (2) It was suggested that the Standard Frequency Transmissions be made only quarterly, and to receive publicity beforehand. (3) Favourable comments on the improvement in the magazine. (4) Concern was expressed at the loss of the emergency frequencies. (5) The speech quality of VK3VI received considerable criticism. (6) The Disposals Committee were congratulated on their efforts. (7) It was suggested that more effective use could be made of the instrument and book libraries. (8) There was a long and warm discussion on the QSL distribution, from which the general opinion was that cards should be forwarded to members as had been done in the past; although it was considered that bundles of cards for distribution could be sent to one person in a centre to distribute without further re-posting.

The election of zone officers resulted: President 3TL (also key station), Secretary and Treasurer 3OA, Communications Officer and Notes Correspondent and Disposals Officer 3BM.

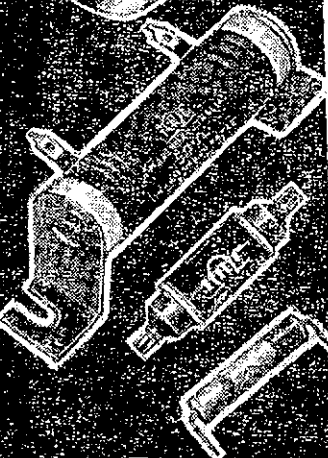
Sunday morning was mostly taken up in general rag-chewing, meeting voices in person and watching Treb earmark new comers. Amongst the first of whom were 3YW and 3TA in a posh new car. Then as many as could gathered into the shack to hear the W.L.A. broadcast and/or to eat oranges that were placed in a case near the door. In the afternoon 3ABG gave a talk on 50 Mc.

Bruce led the Hams, in cars, to have a look round the farm. He showed us the place where his father camped when he first took up land in the Mallee and where they have left the original trees growing. He also showed us the private channel over 9 miles long down which he pumps water to irrigate fallow. This is a practice very little known. Also a crop of wheat growing on land that he had watered last year, sometimes getting bogged in his car while attending the pump.

The success of the Convention was no doubt due to Station 3BM which was of interest to us all. But it was the work done by Mrs. Trebilcock, Mrs. Adams, Mrs. Mann and her mother that made us all so sorry to leave and to hope that it will not be long to the next time.

3TL's 80 footer blew down in the gale. Treb intends to re-erect it after giving it a coat of paint. 3JG, although active on 7 and 14 Mc. cannot be persuaded to join the hook-up on 3.5 Mc. 3CD will have the a.c. power lines very soon and then expects to get on the air. 3ZK had an f.b. rig pre-war, so judging by reports of the beaut outfit that he's nearly completed, he should go to town when he starts up. 3CE is branching out with an AR3, new modulator and new mike. 3OA has put his gear on a dinner-waggon and moved in by the frigate. Ian is also building 60 Mc. gear and a 4 element rotary beam.

3CH is heard more often now on 3.5 and 7 Mc. Uses a Command Transmitter, v.f.o. and final, and is doing a lot of looking at and thinking about an SCR522. 3ACE is active rag-chewing and never out of something to say. 3HR is off the air owing to burnt out alternator and is so QRL in his job that he hasn't got round to rewinding it yet. 3LU



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will unfortunately be leaving Quambatook soon to destination unknown. It was thought for a while that he would be permanent here and he was making plans for a de luxe outfit. Congrats to 3AWK on achieving the ticket, and also for the f.b. signal you have got out already. He will soon be moving into a permanent home and can then put up a decent antenna and set up the TA12D and ARS to advantage. Associate Jim Troy is very keen and will be a QRP merchant when he eventually gets on. Will have to start from the ground up with a 12 volt generator run off the milking engine. Albert (better known as "Bud" or "Butter") Page has a nice lot of gear but no mouse speed as yet. 3BY has purchased four stiff copper tubes which will some day be a 50 Mc. beam atop the 70 foot stick. He dreams and talks of folded dipoles, grounded grid triodes and 807 quadruplers so something should come of it, all.

CENTRAL WESTERN ZONE CONVENTION

Thirty attended the Convention held at Horsham on Sunday, 12th September. The annual election of office-bearers of the zone resulted as follows: President 3GN, Vice-Presidents 3ATR and 3AKW, Secretary-Treasurer and Notes Secretary 3YW, Committee 3ARM, 3FI and 3XU. A Dutch auction in aid of the "Food for Britain" Fund resulted in the sum of £10/5/- being raised.

A suggestion was made that the Standard Frequency Transmissions from VK3WI be run every three months on 7 Mc. Another suggestion was that to get more stations into the zone hook-up the time was to be changed to 2 p.m. on the second Sunday of each month on 7120 Kc.

3TA donated six 807s to be awarded at the next Annual Convention for the best operating procedure and signal in the Central Western Zone.

The next Convention is to be held at Warracknabeal about the end of March, 1949.

EASTERN ZONE

Arrangements are proceeding for the annual Eastern Zone Convention to be held at Leongatha on the 27th and 28th of November, so those who are interested keep this week-end free. Further news of the Convention will be included in the Zone notes next month.

The monthly meeting of the sub-branch was held in VK3ASS clubroom at Balcombe on Monday, 6th September; the attendance being thirty. Vacancies for the position of Secretary and Treasurer were filled by 3US and 3UG respectively.

A check revealed that there are 15 licensed amateurs in the sub-branch. New members enrolled at the meeting totalled 14. Interested visitors to the meeting were J4BDL, J4EPA and J4KLT, all A.R.A. officers serving in Japan. Major Lake J4BDL gave an interesting picture of Amateur operating conditions in Japan. Disposal equipment was then raffled, as a result of which the branch was placed on a firm financial basis. A very successful meeting was brought to a conclusion by a review of valves suitable for ultra high frequency operation given by the President 3BR.

3AHK has been absent from the last few hook-ups; what is the hold up Ossie, is a super rig going to hit the ether? An emergency network was formed on Monday 5th by 3VL, 3QZ, 3ABO, 3CI and 3DI. Through the strong winds both a.c. and telephone lines were put out of action. 3VL, ably assisted by 3ES, started the emergency network going and although handicapped by no a.c. power, put an emergency rig on the air operated from a 6 volt accumulator and stood by all day. 3PR very QRL on the farm but is getting ready to go QRO when the a.c. comes on. 3LV has got modulator going well now and is experimenting on different types of microphones. 3WE very busy these days, any way Bill with a bit of good luck, you may have that thermometer above freezing point again in a few weeks time. 3RH has been on the bands frequently, but not yet in the hook-up. 3EB has his phone going very nicely now and puts out good sigs on 3.5 and 7 Mc. 3SS is on the air when not busy on b.c.l. sets; they keep you busy don't they Keith. 3AKM is busy with 50 Mc. work. Keep it up Mac. 3AEP has his TA12D performing extra now.

NORTH EASTERN ZONE

VK3DW advises that the N.E. Zone hook-up as shown in the magazine notes has been altered. It is now the first Sunday in the month at 0900 hours on 7 Mc. and the third Sunday at 2100 hours on 3.5 Mc.

Only notes this month are from the Wangaratta snooper. He reports that a Ham Afternoon was held at 3YV and 3JK shacks, with visitors 2OJ, 3DW and 3KR. Centre of interest was a TA12D. Afternoon tea (Y) was provided by 3YV. Wangaratta knocked the silencer off 3KR's car so he returned to 3YV, where they had trouble getting the car high enough to allow Ken's stomach to accompany him under the car. It is believed that in the end Ken dug a hole in the lawn and fixed the

silencer. 3DW reported seeing snakes, owls, lizards, etc., on the way home.

3TS, 3ABG and 3EP enjoyed the Northern gang's hospitality at Quambatook. Thanks to 3BM, 3TL, 3OA and 3YLA, your great show sets an example for others to follow.

Following are some unconfirmed reports from unreliable sources: 3UI has good results on 50 Mc. 3AEP working DX on 28 Mc. phone. 3TS now on 28 Mc. also. 3GD must be on DX bands too. 3ACW still on sick list after double operation. Chas took A.R.R.L. handbook into hospital. 3YV showed under with work. 3JK heard on 3.5 Mc. with Type 3 Mark 2. 3WZ was heard from 3WQ. 3ER has new antenna to tree in the street. 3AT's phone is much better. 3XZ using Type A Mark 3. 3CN going to take a lesson on earbashing from 3DW. 3FD still a s.w.l. 3SN putting up power bill on 7 Mc. 3QV new QRM in Benalla, welcome o.m. 3ABG has new QRP rig on 3.5, 7 and 14 Mc. Now the outstanding news of the month—3DW has removed three switches! Now only three-switch change over. Doug still has three knot tuning on receiver though! 3HZ we are waiting for your sig on 50 Mc. Hope it is better than 3SR. 3HP must have blown up. 3BP football before radio?

Out of 30 zone members, only one sent dope. We know that most of your activities are shady and understand, but some must be printable, so what say chaps?

FAR NORTH WESTERN ZONE

On Friday night, 10th September, an informal gathering of members and associates was held at the shack of 3GZ. A good muster rolled up including one visitor, 3ABE from Geelong, who met the local lads. The evening consisted mainly of rag-chews between the lads. 3PX is getting nearer to the air every day. 3IT taking his time re-building. 3FC on the air at Ouyen and keeping things alive in that part of the Zone. 3MF will be getting some phone going and will be active on 3.5 and 7 Mc. 3AGF manages to get the odd bit of DX on 14 Mc. and going crook about phone QRM on 7 Mc. 3AUG has commenced construction of 50 Mc. receiver. 3GZ on 7 Mc. with phone but still works bit of DX on 7 and 14 Mc. c.w.

GEELONG AMATEUR RADIO CLUB

More classes are still being continued under the instructorship of 3IC. A picture night was given by one of the members who brought along his sound projector and showed two films, "Receiving Radio Messages" and "Electronics."

At the next meeting held by the Club the evening was given over to Father Ryan who brought along a modern wire recorder. Father Ryan recorded the Geelong Hams during one of their Thursday night hook-ups and played this recording back on the recorder. The Hams were able to hear how their own rigs sounded. The President of the Club 3ABE thanked Father Ryan for the interesting evening.

At the following meeting 3BU gave us a lecture on "Antennae I have Used." Bill gave us a practical demonstration of a loop aerial. A portable transmitter was taken around the streets in a car and operated by 3VT under the call sign of 3ABU Portable, and its direction followed by means of the loop antenna at the Club. A visitor to the Club was Harold Selman who is one of the old-time Hams. Harold has renewed his licence and is now on the air under the call of 3CM.

At the next meeting members of the Club congratulated Dick Highway who has been successful in getting his "ticket." The evening was given by 3BW who gave an address on his experiences in "Ham Radio." Archie brought along his RCA88 receiver which caused great interest among the members. Many Hams consider this receiver as one of the world's best.

The Club is becoming very popular and more new members have been accepted into the Club. For those interested the Clubrooms are at 65 Little Malop Street, Geelong.

3BW and 3VE have been having contacts with Melbourne on 144 Mc. 3AJF has his transmitter going now and 3BU has his receiver going on that band also.

QUEENSLAND

The night of the 27th August came and passed and so did the general meeting. Amongst the thirty-six present were President (4AW), Secretary (4XG), 4RT and 4WG. Matters discussed at great length were Library Service and the proposed increase in membership fees. 4RT was in rare form, methinks he visited the blarney stone that night. A pleasing feature of the meeting was the presence of 4WG, whose intelligent questioning was noted in quarters where it counts. Come again OM. Thinking over the meeting, one is reminded of the words of Omar Khayyam:—

"Myself when young did eagerly frequent,
Doctor and Saint, and heard great Argument,
About it and about; but evermore
Came out by the same Door as in I went."

The meeting closed with an informative lecture by 4AW on "Lecher Wires and the Application Thereof."

Certificates were received for the following:—1st VK4 in 14 Mc. 1946, 4TY; 1st VK4 C.W. 1947, 4TY; 1st VK4 phone 1947, 4KS; 1st VK4 28 Mc. C.W. 1947, 4AP; 1st VR 28 Mc. C.W. 1947, 4AP. DX C.C.: 4EL and 4HR; W.A.C.: 4EL, 4WF, 4FJ and 4UX.

4RC reports that out going cards totalled 263 bundles to 80 countries. Morse class is still very popular with twelve regulars including a YL.

Those wishing to avail themselves of the Library Service should forward 5/- to Secretary. This fee will be refunded when member decides to drop service. Fee will be forfeited only if member fails to return books.

Aspirants for DX C.C. honors are 4RF (115), 4DA (111), 4RC has run up 91 countries and 47 W States.

In future no monthly notices of general meeting will be sent out each month. Members whose sub. falls due in the following month will receive a reminder notice in the form of a bill.

BAND ACTIVITY

The very windy weather last month caused so much power line QRM that listening on the 3.5 band was almost unbearable. DX heard included W, ZL, ZK1, VR2 and KP6. VR stations are now allowed to operate in this band. Active on the band are 4HD, 4GG, 4ST, 4HA, 4CU and 4SN. The Blue Riband this month again goes to 4HA who not only added ZK1 to his list but won first place in the VK section in the Eddystone Contest (a ZL contest). Congratulations Harry!

The same remarks on this band as for 3.5 Mc. Very few VK4 stations seem to operate on 7 Mc. at night. 4SV puts out a very strong signal. 4LK also heard with a good signal at night. 4CW also operating. Conditions on this band seem to be improving and southern stations workable during the day. DX heard included W, VE, ZL and KH. QRM from overseas commercial stations in this band has been very bad, which makes one wish for a Californian Kilowatt. Very pleased to have chat with 7PA in the W.I.A. hook-up this month. 7PA reports that membership in VK7 is nearly 100 per cent.—what about it VK4?

Those heard working on 14 Mc. band were 4EC, 4CG, 4GD, 4LZ, 4GZ, 4RT, 4EJ, 4RQ, 4KW, 4PR, 4HB, 4ZU, and 4BJ. Very pleased to hear you on again 4RQ! During a recent Aurora activity South African stations were heard at good strength in the early afternoon. South Americans were good during late afternoon. Europeans provide good hunting during the morning. 4BJ is very pleased this month having bagged an H2.

The 28 Mc. band has not yet thawed out. ZL, W, and J2 the only countries heard here. Signals occasionally heard at night but day time still the best. Only VK4 heard working on this band was 4HE, but no doubt many others are active.

ZONE NEWS

Far Northern (Manager 4HK).—We believe the following Hams are active in this zone: 4HK, 4AX, 4KL and 4FM. An old-timer in this area has had a change of call sign, 4QA now operating as 4DC. Newcomer to the zone is 4ZI on Thursday Island.

Central Zone (Manager 4HZ).—Very pleased to report that 4UK is at last out of bed. Still confined to the hospital grounds! 4BG is building gear for 50 Mc. 4XJ has all the necessary for W.A.C.

South West Zone (Manager 4ER).—4RX is resting on his laurels this month—Claude promised the NYL to do some gardening. 4TY has returned to the 7 Mc. band using battery power from his country QTH. 4CG and 4LZ still doing their best to keep Toowoomba on the 14 Mc. map. 4ER and 4LD warming up for the 50 Mc. band. 4OK made a welcome return to the 7 Mc. band in a recent 4W1 round-up.

Ipswich (Manager 4WS).—Active in the Zone are 4MW, 4CH, 4KO, 4GG, and 4HG. Haven't heard 4WS about lately, when are you coming back to the Sunday morning round-table?

Townsville (Manager 4GD).—Little to report from this zone this month. All the boys getting ready for the first anniversary meeting of the Townsville Club at the end of September.

Brisbane.—During August 4ER and 4SN had the pleasure of visiting 4EL. Eric showed us over the shack and during the course of conversation we learned that Eric's achievements are more outstanding than we realised. Following facts speak for themselves: Countries worked 163; Europeans contacted post-war total 3,000, of which 2,000 were G stations. Certificates already won:—DX C.C. (Australia), B.E.R.T.A., W.B.E. (phone and c.w.), W.B.E. 28 Mc., W.A.C. (phone and c.w.), and another to be added soon is DX C.C. (U.S.A.). Eric is also the first post-war VK member of P.O.C.

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division was held at the usual time and place, and a very representative gathering was noticed. The lecturers for the night were 5DW and 5XU, who together gave a very interesting and instructive demonstration on the recently purchased Institute phioscope and oscilloscope. The demonstration was quite a success, and with Gordon handling the lecture side, and Frank the practical, a good time was had by all. A vote of thanks was ably proposed by Ross Kelly, and the applause which followed clearly indicated that everyone was in agreement with his remarks. Visitors present included Neil Wicks, Leo Rowe, George Diganca, J. Newman, 2XM and 3WQ.

3WQ was introduced to the meeting as being connected with Disposals in VK3, and was somewhat dismayed at the roar that went up from the meeting at this announcement. He need not have worried, as they always roar when the word disposals is

mentioned, whether it is from rage or in derision I have never been quite sure. Anyway he looks like a regular guy, and cheerfully answered all the queries put up to him, but his answers were very discouraging, simply NO NO. Nevertheless it was good to see him, and we hope he comes over again.

I knew it would happen, when the country Hams were not getting much of a "go" in these notes there was a howl went up, and now that the country boys are satisfied, believe it or not, the city gang are passing caustic remarks concerning the lack of city doings. Wouldn't it. Somebody asked me the other day what they had to do to get into these notes. "Do something wrong I said, and you will soon find yourself in pronto." This makes it very hard on the quiet and unassuming type like 5MF for example, but at last I have caught up with him. I believe that he has made up one of those "sooper dooper" receivers with high gain tubes. It works very well too, until 5MD comes on the air, and then Al can hear Doc from one end of the dial to the

other. The only thing you can do Al, is to try and get Doc put behind bars or something.

Hardly any activity from the city is to hand this month, mainly because of "ole man flu" and the fact of poor conditions on all bands at night, which by the way has broken the morale of even the most ardent VK5. Heard a newcomer in 5JZ the other night, and was intrigued by the voice, felt I should know the operator, but for the life of me could not place him. It worried me to such an extent that I made some enquiries and found it was Jack Young, of 5AD fame. Remember him and Jack Burgess of the "Kangaroos on Parade" from that station? Welcome Jack, and they tell me that you possess that priceless possession, an XXL who is not only interested in Amateur Radio, but is also keen to get a ticket as well. (Show this to the wife fellows, but don't mention my name!)

A small but select gang of VK5 Hams indulged in the legpull of the year recently when a certain VK5, high up in financial circles, purchased a well

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known type of communication receiver. Being very fussy, he kept the fact quiet, and would listen at night to try the receiver out and then next day he would go around to the above mentioned gang and see what they had heard on their sets. Unfortunately for him, he picked a week when conditions were "putrid" and he hardly heard a VK5 let alone any DX. Each day when he enquired as to what the gang had heard the night before he was given a list of DX that would fairly make his mouth water. He spent a terrible week until he woke up to the fact that the gang were in the know as to his new receiver, and were preparing a special list each day. Had it gone on much longer, I fear that the said Ham would have required a special harness to support his rapidly falling morale.

5VM has been away on relieving duties at Renmark recently. Believe he painted the town a pillar box red, and also tripped the light fantastic to the strains of Lal Grays orchestra. They tell me that you had no trouble with the goats Wick. 'Tis said the goats smelt your pipe first. 5LR manages to hold his own on 28 Mc. with the morning DX. Apparently you don't agree with 2NO regarding "Ten" being on the wane Jack. Don't ask me for my opinion on that band, I have always said it "tidley winks." A nice piece of sabotage was cooked up by the Editor and our esteemed Secretary in the July issue, and with me at death's door too, there's loyalty for you. Anyway revenge is sweet. I received several letters from critics of these notes this month, and having read them all, I decided to take their advice, but unfortunately or fortunately, whichever way you look at it, the rope broke.

I was talking to an "old-timer" the other day, "old-timer" that is in Amateur Radio, and he told me that he does a lot of listening on the bands as part of his vocation. He said that he had noticed that the Hams who called a station with a short call and then said "are you listening," thereupon breaking their own carrier and listening themselves, were the ones who were the most successful in securing the contacts. To test this theory I listened to quite a number of stations using this method, and must admit that my observations confirmed his remarks. This method of working of course is not new to aeradio operators, but working mostly on fixed channels as they do, it would seem more applicable to their type of contacts. With v.f.o. so popular these days, and the practice of only looking for a reply a few Kc. either side of one's signal, the idea looks a sifter, if only from the needless QRM angle. What about it fellows? Even if you only try it out on VK contacts, after all we must progress, and our present system of calling and calling and calling and then crossing over from sheer exhaustion definitely went out with sword swallowing.

I notice on a locker at my place of working (that horrid word) which is shared by 5LR and 5FQ, the following words, "this locker belongs to the dual conversion boys, 5FQ and 5LR." I don't know what this means, but if you take my advice you'll see a doctor, after all it can't be that serious a complaint. "Don't let this happen to you." A remarkable effect of the "flu" epidemic was the number of Hams who suffered from delirium as one of their symptoms. One Ham who was found up on top of his tower adjusting his beam, when visited by a member of his firm, certainly was in a delirium because his face was as red as red could be. He was an example of a miraculous recovery, because he was back to work next day and as fit as a fiddle. Incidentally, 5LG is beaming again, but believe that this time there is all mod. cons. to prevent him falling off again. Have been told that when Leth climbs up his beam all the neighbours put cotton wool in their ears, as the French that he used when he fell off the beam last time was a credit to any Ham.

5TW is having a break from Amateur Radio on his annual holidays. Tom will probably return with fresh ideas and new gear. Fresh ideas on radio of course! 5CH is now using a SCR247 converted to make a very satisfactory v.f.o. He has also started on the metal work for a rack and panel type transmitter. Hope he doesn't take as long as I have on my v.f.o. Good hunting Claude. 5MS is designing everything for his long hoped for a.c. His battery charger engine is on the ice at present, but the a.c. is now only three poles away so who cares. Keep your pecker up Stewart. 5JA uses a converter for his a.c. supply and has modified his 807s mode. to the circuit in August "Amateur Radio." John lost a pole in the recent gales, but with the help of 5MS it is back to its vertical position again. At time of writing he is in Melbourne with quite an imposing list of gear to be looked for. 5CJ has almost finished re-building and should now be going at full speed ahead. Thanks for the good wishes Col., and Wick told me he had contacted you on 7 Mc. There is no central heating

in my shack either and I can quite realise your inactivity these cold nights. Of course, some of the common types of Hams I am forced to associate with will say that there is quite enough hot air about me to warm any shack, but I simply treat them with ignore. Thanks for the notes Col.

Understand that there are two starters for the next A.O.C.P. exam from Mt. Gambier way, and we wish them all the best. See you on the air someday fellows. 5LW (Professor to you) keeps a "mice." He feeds it on a bushel of wheat intended for the fowls, who are putting on quite a squawk about it. Ross reckons that the "mice" can call CQ DX now. The reason for the plural "mice" is that these notes are always a month behind, get it? Our "Amigo" 5TR pinched the baby's dummy, no the medicine dropper, to fill something or other connected with a battery charger. Mrs. 5TR was very worried as to whether or not battery acid would mix with medicine. Ralph how could you! With conditions as they are, quite a number of the gang have migrated to 144 Mc., and among those present are 5KG, BH, LQ, LB, CB, AF, RU, GN, GF, VC, CR and 5LG with his high power of one and a quarter watts.

It looks as if 5VM will have to give away the shower that is mounted over his rig, and put it over his next door neighbour's rig. Bert Behenna, who lives next door has gained his "ticket" and their aerials are about 20 feet apart. Perhaps Len could secretly turn on the shower from his QTH and drown out Bert's sig. 5GS had the chance of a look over 5GP's rig in a utility when Graham paid the Northern boys a visit recently. Some f.b. gear at work for the Flying Doctor Service. 5UX had a couple of contacts with 5LK on board the M.V. "Para" while the big blow was on recently. Hope you had a good cruise and caught dozens of them Frank. 5AP has gone and done it, yes that's right, he has taken unto himself a wife. Start her off right Ron, DX always has first preference over dish washing and wiping. Be like me, I have my YF just where she wants me. Congrats from all the gang in VK5. 5CD had the misfortune to lose a pole during the recent storm. What did you say at the time Cec.

5MA has been busy chasing bugs out of a new modulator. They tell me that "DDT" is as good as any Fred. He hopes to be QRO soon. 5XL is having fun trying to get a Clapp oscillator to perk and at the same time putting phase inverters in his modulator unit, so as he can use a velocity mike soon. 5RJ is still trying to figure out how he can make that 733D tick, but is not having any trouble with his phone anyway, because it sounds f.b. He had a surprise visit from 5MN recently who is QRT again. Jeff said it is easy to give up Ham Radio, he does it about 35 times a year. 5CS still putting in a good sig, but his cobber 5XR is not heard much, better run it remote control Cam. 5AX still chewing the rag on 7 Mc. and keeping his ear on "six," and just in passing 5VM had three days in bed with the flu, but bashed the mike so much whilst convalescing that he had to have another week off wearing a muzzle to get his throat better. 5GS was heard with some very good phone, and we were glad to hear 5JY on the air again, keep it up Jim, but where is 5PH? A victim of the prevailing dogs' disease I have heard. Many thanks for the notes Les, and as you say "the blighters don't print much" do they. You beaut. Put that in your hat Tom Hogan.

WESTERN AUSTRALIA

The general meeting was held on the 13th September. The night was dark and stormy, but 36 members braved the elements so the meeting was quite f.b. as usual. Our Secretary 6AG was back in office. There was a stack of correspondence read and given careful attention. A letter from 6DX in Kalgoorlie suggests an Armistice Day Contest in Western Australia, to be country Hams versus city Hams over a twelve hour operating period. Council will discuss rules, etc., and we will hear more about it later.

From 6MU at Merredin there was a letter reference W.A. Emergency Network. A committee (6FC, 6GA and 6SA) was elected to organise the show, and investigate the existing systems operating in other VK States, and make suggestions to Council as plans for the W.A. set-up.

From 5AFL (formerly 6FL), an aneroid barometer was donated to be a trophy as promised by Frank before he left for VK3. 6WH advised the meeting of other existing trophies and details will be given in a future bulletin.

A fine lecture was given by 6HL as "My Amateur Station." Harry gave the evolution of his gear post-war up to September 13, 1948! Notes on his five element 28 Mc. beam created a lot of interest. Constructional details were given, also timing and adjustments of the new beam which will have

proved its worth by the time you read this. Harry held the floor for almost an hour. He convinced us all that 28 Mc. is the only band.

6MB told us all about his new switched 4-band coil unit. Bill gave brief circuit details and we are expecting to hear more of this receiver when he gets it completed. 6AG gave a short demonstration of an auto keying device. Rather a relic but an interesting piece of equipment. The meeting closed at 10.45 p.m.

PERSONALITIES

6RF jumped with joy when he heard an HK4 come back to him on 28 Mc. phone. Fred is now another VK6 to get his W.A.C. 6GA released from hospital just in time to make the R.D. Contest. Bill put up a f.b. score so the rest must have done him good. 6HS and 6JN back on the job again after also spending time in hospital. Harry's new receiver is taking shape slowly. 6DX came to light with a stack of new QSL cards. We hear that the sketch of the rotary beam is soon to become a reality. 6WM, a real c.w. merchant, is at last becoming phone minded. What's this about a new beam Bill? 6FD also of the Goldfields gang, paid a hurried visit to Perth. Joe said something about 100 watts and we are waiting to hear it.

6RL not heard so often on 7 Mc. these days. Ralph has been spending his time and patience on 14 and 28 Mc. His 8 watts is doing a f.b. job on the latter band. 6IG is planning alterations to his rig but unfortunately he is doing it in hospital. Hope you are back home by now Ian and finding your land legs once again. 30F sends 73 too Ian. 6WD has served his time on 7 Mc. and is now getting the rig ready for some real DX on 14 Mc., f.b. Wally—now what about 28 Mc.? 6CM is doing quite a lot of brass-pounding lately. What's happened to the modulator Bill?

6DD was heard yarning on 7 Mc. John's excuse—28 Mc. band was dead, but he was keen to get back there again in case it suddenly came good! 6SN has changed his QTH. He is now showing the Carlyle gang just how it should be done; f.b. Alf. 6JW also changed to a better QTH recently. Proudly says he is now satisfied with his junk-pile, but we know John—the game is on again! 6HC has a nice new receiver, a BC348. When he gets that directive antenna hoisted Leo will be seen daily going through the QSL box!

6RT came to Perth during the school holidays. Len just about has his receiver completed. He says 3.5 Mc. is a good band and is the only VK6 regularly on it. 6HL has things going again on 28 Mc. How many countries now Harry? It's close to DX C.C. isn't it? 6WU has deserted 7 Mc. What's happening up there Ray and what's the latest Q? 6HR is heard with a nice signal on 7 Mc., f.b. Lou. 6NW is brass-pounding on 14 Mc. again. Norm is getting right into the DX lately, and when things are quiet has time for a rag-chew.

TASMANIA

Well, we missed out on our notes for the September issue of "A.R." due to pressure of business of your worthy (or unworthy scribe) but here goes for the October issue.

Things have been fairly quiet in VK7 for the past month. The September meeting was well attended and after disposing of general business, 7MY exhibited his new receiver complete with blackwood case and all trimmings; boy oh boy, what a set. It has everything that opens and shuts—double conversion and all that, in fact everything that one could possibly want except hot and cold folding doors and running chamber maids.

The VK7 Sunday morning rag-chew doesn't seem as popular as it was, and if the chap in VK7 who heterodyned 7WI one Sunday doesn't play ball I shall have to name the honourable member aham.

By the way chaps, 7TR can use a key, he has been caught red handed in the operation of same. 7SJ has a bit of downward modulation and 7EJ seems to think that broadcast quality is just the goods, congrats. Ted on your excellent phone. 7NC is busy with a new receiver as is 7RF and 7CT, all double conversion, and everybody offering advice as to the cause of the various bugs contained therein. 7XA is still doing a super job as organiser of the "Food for Britain" Appeal and the letters that Charlie has received from G land are most encouraging and thankful for the local effort.

The awful noise I heard on 7 Mc. a couple of weeks back was a local Ham trying grid modulation, stick to plate brother, stick to plate. 7OL still battling along on phone on 7 Mc., sounds a bit muffled Lyn. 7OM has re-built the rig, and 7CW is to be heard some Sunday mornings on 7 Mc. battling the breeze around the locals. With the rapid approach of summer, field days are once more in the air, and some good days will no doubt

be enjoyed, what with swinging the old loop and stopping kids from falling over cliffs or getting stung by bull-ants, but what the heck anyway.

NORTHERN ZONE

The July meeting of the Northern Zone was held at the studios of 7LA in Launceston. This meeting was the first at which it was possible to have a lecture as at all our previous meetings the formation of the Zone had to be planned. This lecture was given by Mr. T. Gebb, of the Launceston Technical College, and the subject chosen was "Rectifiers." Mr. Gebb briefly covered the more unusual system of rectification and then gave a practical demonstration with the aid of a specially constructed power supply and an oscilloscope. After studying the various patterns on the scope and seeing the effects of different filter circuits, at least two of the audience went home and converted their filters to choke input.

Since the formation of this Zone it is very gratifying to see the old-timers returning to the fold. At the last meeting we even had 7AM along and they tell me that he didn't even flinch when the bug bit him. Les has since been seen carrying huge pieces of aluminium home.

No stations from this Zone were active in the Remembrance Contest, however as the August issue of "Amateur Radio" was not received here until after the Contest this is not surprising.

The DX section have started to take a little more interest in life since my last notes. 7RK became normal first, possibly due to the fact that he managed to drag AC4YN from the clutches of the Ws one evening recently. 7LZ has also managed to find a few new countries to add to his collection. Col is at present using a Jones' all-band single-wire fed antenna. 7DS is also giving this aerial a try-out. 7BQ has now gone v.f.o. and by all reports it is working real well. 7DB is at present building an all-band rack and panel transmitter.

The only visitor to the Zone this month has been VK3ACR.

FIFTY AND UP

(Continued from Page 12)

With the advent of warm weather most of the old 50 Mc. men are looking forward to a recurrence of summer time sporadic E and signs are that there will be a good deal of activity.

On Sunday, 28th August, 4CU went portable on 50 Mc. at a hill some three or four miles from his home QTH (Clifton, Qld.) and succeeded in working 4KK and 4ZU over distances of 45 and 85 miles respectively. 4CU was heard by 4RT and 4ZU by 4SN at Minden about 30 miles west of Brisbane. Conditions were relatively poor however, as compared to previous tests and it was doubtful if the Brisbane-Clifton link would have been possible if both stations were not using four element horizontal beams.

VERY FEW ACTIVE IN VK3

Most consistent station on the band is VNHQ who occupies up to eleven strips of the band. Country blokes are well on the job, 3ZL and 3GM at Ballarat are constantly striving to improve their gear, though conditions have been poor last month or so. 3UT (at Tatura) and a new one, 3TS at Coprop about 95 miles North of Melbourne, also come through; sometimes very well, seems that signals go over the mountains. South-East of Melbourne we have 3HZ Warragul, 3DI at Leongatha, and 3CI at Foster, 85 miles; 3CI is in a bad location, but since he has put his beam up to 60 ft. both 3CI and 3HK (near Melbourne) have heard but not worked each other. 3LV can hear Melbourne stations but lack of power supply limits transmitter. 3VL at Red Hill now has his 100 watt rig going and puts out a fine signal.

In Melbourne, the band is kept warm by "old contemptibles" 3HK, 3RR, 3BD, 3XA, 3DA, 3YJ, 3BQ, 3GE, 3PG. New stations include 3MD using his 813 as a doubler to 50 Mc. and feeding a dipole, efficiency is poor but it's a good signal. 3IM at Kew using a three stage crystal and 807 with 12 watts input to beam. Quentin has been listening on 50 Mc. for past two years and has just got ticket; receiver is a 12 tube super. 3CO also came on during the field day; also uses a doubler to 50 Mc. and has a converter. 3QO on also on low power.

Taken as a whole only a handful of stations operate on the band. What's wrong with the 50 Mc. band in VK3? In the last couple of years, ye scribe has quite literally seen scores of stations come—and go—on 50 Mc. Now, no one expects a Ham to stay on one band exclusively (he's nuts if he does), but how about you blokes who have been on 50 Mc. and have the gear, putting in an appearance say once a fortnight?

You chaps who haven't the gear, remember you can get on 50 Mc. on crystal with three stages using say 6V6s and an 807 and run 50 watts easily.

One has only to read, say, American "Tele-Tech" to realise the battle royal in progress over there for high frequency channels. It must come here too and if we Hams don't use our ultra high bands—well someone else will!

WESTERN AUSTRALIA

GFC has just finished building 144 Mc. gear. The transmitter is an a.m./n.b.f.m. affair comprising 5 stages using 816 in final with up to 50 watts input (straight amplifier). This transmitter took many weeks of "battling" to design and construct. Aerial used is a Lazy H with reflectors fed with clear Nylex via quarter wave matching stub. It is about 34 ft. high and rotatable. Receiver is a 2 valve converter, using 6AK6 r.f., to 9001 mixer with 955 oscillator. I.F. is 5 Mc. coupled to 7 stage communications receiver of conventional design. This is an a.m. job, but n.b.f.m. can be received if required. Not going on much until his 50 Mc. beam is re-installed.

Most of the 50 Mc. boys have migrated to 144 Mc. On Sunday, 12th September, 6RU went to Mt. William (70 miles south of Perth) and operated portable (SCR522) back to 6GB and 6LW in Perth. This is the record for Western Australia. 6DF went northwards the same day but poor localities spoiled any chances of contact with 6KW and 6RU, but Maurie was able to work the Perth boys—20 miles away. It was hoped to have had a 100 miles QSO from 6KW, 6RU to 6DF but this did not eventuate.

Every evening 6KW, 6RI, 6AG, 6GB and 6DF keep a listening watch on 144.138 Mc. The fundamental crystal frequency is 8007 Kc. which is a readily available rock in VK. 6DF with an auto timing device transmits m.c.w. for 13 seconds in the minute, leaving 47 seconds listening period each minute.

144 Mc. DIGEST by Bill Hartley

By this time, the VK2 v.h.f. contest of three months' duration will be well under way, commencing at 0001 hours on 1st October until 2359 hours on New Year's Eve for operations on 50, 144 and 288 Mc. bands. The competition provides for points awarded on a mileage basis with special points for any probable Interstate or overseas contacts, normal contacts only on any band and no exchange of numbers, can only contact each station once every 24 hours on each band. Cross-band operation allowed, transmitting station to claim score, also portable operations allowable on all bands. Prizes are provided for each band and a grand prize for the maximum score on all bands. Points score to be multiplied by total points on each band, eg. 100 points on 50 Mc., 100 points on 144 Mc., 100 points on 288 Mc. are all multiplied as total for a three-band score.

This contest is a move in the right direction for providing interest in the exploring of the v.h.f. spectrum. It is to be hoped that such a move could be brought about in VK3 for the running of a similar show—together with some hand-outs from the VK3 Divvy Council! After all it is to the v.h.f. boys, as pioneers, that something in the way of a reward should be provided. Such a gesture would be greatly appreciated and would provide a distinct fill-up to the enthusiasm of the v.h.f. workers.

If such a contest is possible perhaps it would be more to the point if in VK3 that the VIM lads first of all put their phone hand in order on 144 Mc. and adopt the means of providing a separate channel for the country boys to call in, for as at present it appears to be a waste of time for the country stations to try and break through the city barrage. It seems quite clear that because a 144 Mc. field day is on, it is a signal for everybody to appear on the band and have a round-up of local contacts, where as on such days there should be silence on the band except for the portables and the contacting medium. It seems odd that conditions be as they are when there are seven nights in a week to chew the rag over, so it is hoped that some moves be brought about and due consideration be given to the establishment of a crystal pool as an aid to a practical working band allocation.

Nineteen stations in VK5 are now on the 288 Mc. band so things are busy with the following calls: 5AF, 5BH, 5CB, 5CR, 5GA, 5GB, 5GF, 5GN, 5JO, 5JM, 5KC, 5KG, 5LB, 5LG, 5LQ, 5NG, 5PW, 5QR and 5RY and at Mt. Gambier with 5JA leading the way is 5MS and 5NV. 5JA put in a brief surprise visit to the writer, he came together with a 144 Mc. walkie-talkie outfit for calibration purposes and was ushered around by 5LR who got bitten by

the same strain of bug. Information is that on 144 Mc., there is not a disposal job in use in Adelaide as they are all home-built. 5JM has a 7193 m.o.p.a. into p.p. RL16s, 5RV also uses a m.o.p.a. and a 832 final, yes with a socket, there plenty in VIA. Strong harmonics from the VK5 28 Mc. boys are heard on the 144 Mc. band.

Like the weather, things are warming up plenty on 144 Mc. in VK3 with the following active: 3ED, EH, EL, EM, ES, MD, MB, XM, BW, VF, CI, LH, TO, IS, HK, JO, EW, AJ, ABA, ACM and AKI, the latter making a welcome re-appearance with good signals. 3EL, before the big blow, had the bad luck to lose his beam, while at last 3EM is considering a rotary beam. 3LR is due on using a pair of 7193s, A.S.V. receiver and a 3 element beam. Final touches to portable gear is being done at 3ACM, AJ, ABA, XM, MB and AKI. Both 3PG and 3KV are the latest to start nibbling at 144 Mc. With the falling of bricks on the roof, 3ES promptly cured the bad a.c. hum or was it Doctor 3AJ. 3EE is on with a super-regen to a 4 element parasitic array plus a mod. osc. Another 522 user will be 3MD which will be a vast improvement on transceiver gear. 3BW's signal from Portarlington is a decided advantage since changing over to horizontal, actually is looked upon as a local.

With the most interesting QSL card yet seen, Keith of 3HK is now a permanent on 144 Mc. and is off to a proper start by using 522 gear, this coupled to 27 feet high dipole with a 50 ohm co-ax feed line. 3OX reports as not being ready to come on for operations until his studies are over. What looks to be the first Interstate contact on 144 Mc. may probably come from the skeds of 5CL7AB, the latter is another lone star ranger on 144 Mc. His outfit consists of a 300 ohm line feed to a 3 element wide spaced beam with a folded radiator, receiver and a 12 tubes using 6AK5-9002 on the front end with the coils tuned by swinging copper vanes, the transmitter is of interest being a v.f.o. job which feeds at 4 Mc. and ends at 48 Mc. in the final and drives a 35TG tripling to 144 Mc. with 1,000 volts on the 35TG, 807s used for modulation; v.f.o., 6J8G-EF50, oscillator and two class A stages.

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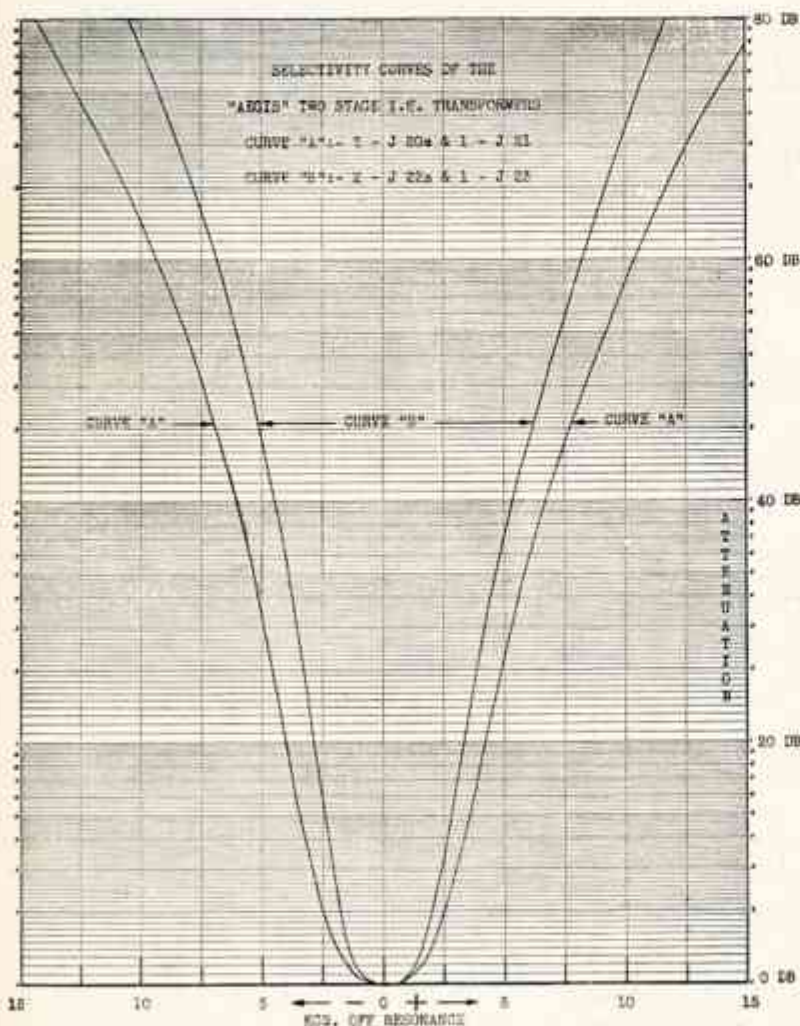
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AMATEUR RADIO

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EDITORIAL



COMMERCIAL STATION OPERATION IN AMATEUR BANDS

The operation of commercial stations in Amateur Bands has always been a nuisance, and the increasing numbers of such interlopers is giving all active amateurs much food for thought.

Much has been written about our narrow bands and when it is considered that thousands of low powered signals are operating therein, it becomes of increasing importance to eliminate such high powered emissions by taking action to have them transferred to their correct allocation.

Unfortunately it is not easy to refer such information to the appropriate authorities without a certain amount of data giving call signs, date, time frequency, etc., to enable them to pass suitable details to the overseas authority concerned with such matters.

It is therefore desired that all commercial stations operating in amateur bands be logged and the information of such emissions be passed to Federal Councillors in each Division who will forward the data to the Federal Executive for appropriate action with the Postmaster General's Department.

PORTABLE EQUIPMENT

Most Amateurs have enjoyed the experience of operating equipment under field condi-

tions, either on field days or with portable equipment normally operated in cars or boats.

With the arrival of the summer season it is opportune to remind members who have not already done so, that they should seriously consider the design and construction of low powered portable equipment which can be operated from vibrator or genemotor supplies.

Those experimenters with service experience who remember the occasions when they were responsible for the erection and operation of such equipment, will agree that no more enjoyable experimentation can be obtained than to operate your rig under such conditions.

Apart from the opportunity for enjoyment thus obtained, there is real satisfaction in owning portable equipment which may be used for a national emergency service at short notice, as has been the case with those amateurs who interest themselves in bush fire prevention by assisting various country fire brigades.

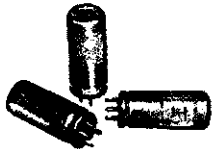
Many interesting technical problems, from power supplies to aerials, can be tackled in this type of work whilst the technical skill required to design really compact and light weight equipment offers scope for those who take pleasure in constructive work requiring original thought.

Federal Executive.

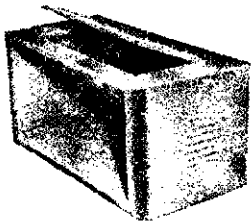
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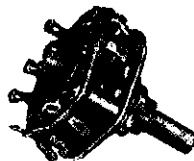
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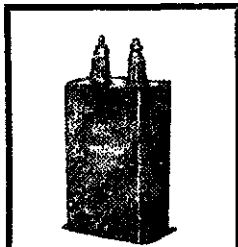


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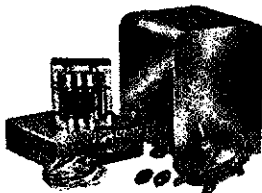
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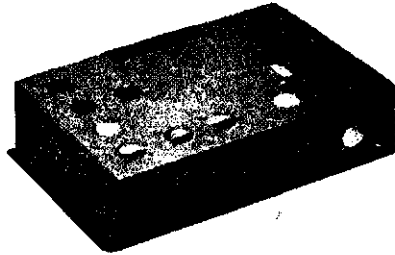
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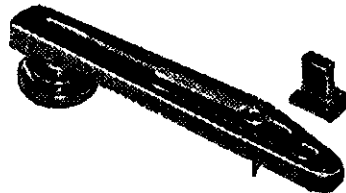
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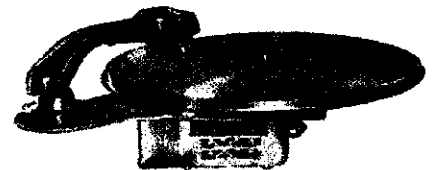
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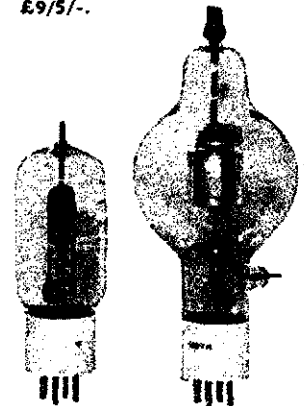
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Ionospheric Predictions for the Amateur Bands

BY A. L. GREEN*, D.Sc., Fe.I.R.E.

INTRODUCTION As announced in a previous issue of this magazine, the Commonwealth Observatory has agreed to supply special ionospheric forecasts to the Wireless Institute of Australia for a trial period of six months. During that period it is hoped that Amateurs will carefully examine the forecasts in the light of their own practical experience of long-distance communication.

Two objects will thereby be achieved. Firstly it is to be expected that actual experience with the Amateur band forecasts will provide practical data on the reliability of the predictions. When discrepancies occur between forecasts and experience, as no doubt they will, careful examination of the data should lead to an improvement in the forecasting procedure. Secondly, if the forecasts prove to be of value in facilitating Amateur contacts between Australia and other countries, the Wireless Institute will have made an important contribution to one of the fundamental objects of Amateur Radio.

FORECASTING PROCEDURE The maps in Figures 1 and 2 indicate the general basis for the Amateur band forecasts. The world includes seven principal zones, from the point of view of the

Australian Amateur, and it is desired to give ionospheric predictions of the times of the day when two-way communication within the Amateur bands will be possible, both from the Eastern and the Western States. In order to reduce the whole forecasting procedure to manageable dimensions it has been found to be necessary to select representative terminals in Australia and in the world zones as follows:—

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N.-West America	San Francisco
3a	N.-East America	New York
4	Central America	Barbados
5	South Africa	Johannesburg
6	Far East	Manila

The above terminals are those used in the accompanying charts for the forecasts applicable to Canberra. For example, the chart labelled C-Z6 applies generally to Amateur contacts between the South-Eastern Australian States and China, Japan and the Philippines. The actual forecast is made for a specific circuit between Canberra and Manila. Similarly the chart labelled C-Z3A-S.R. is for the Short Route between Canberra and New York over the Pacific Ocean, whereas the chart C-Z3A-L.R. is for the corresponding Long Route over Africa.

During the trial period of these forecasts it will not be feasible to give a complete service for Amateurs in Western Australia. Zone 2 (Mediterranean)

has been omitted on the assumption that the shorter distance from Perth, as compared with the distance from Canberra, renders this forecast unnecessary. The chart labelled P-Z1 should give reasonable results for both Western Europe and the Mediterranean countries. Zone 4 (Central America) has been omitted from the Perth predictions for the reason that the Perth-Barbados great circle travels through the northern auroral zone in which ionospheric disturbances are liable to introduce uncertainty into the forecasts. Somewhat similar conditions exist on the Perth-New York circuit (P-Z3A) and it is hoped that Amateur experience with these contacts will provide valuable data on ionospheric conditions in high northern latitudes. Another difference between the Perth and the Canberra forecasts is that chart P-Z6 is for the Perth-Shanghai circuit as compared with Canberra-Manila for C-Z6.

USE OF THE CHARTS

Each chart is in the form of a graph with ordinates marked in megacycles per second (7, 14, 21 and 28 Mc.) and abscissae in hours at Greenwich Mean Time. The curve labelled M.U.F. indicates the maximum usable frequency for communication between the selected terminals. Similarly the curve (usually in two portions) marked L.U.F. is for the lowest useful, high frequency over the same path. If all frequencies were available to the Amateur the operating procedure would

* Officer-in-Charge, Ionospheric Predictions Service of the Commonwealth Observatory, Department of the Interior.

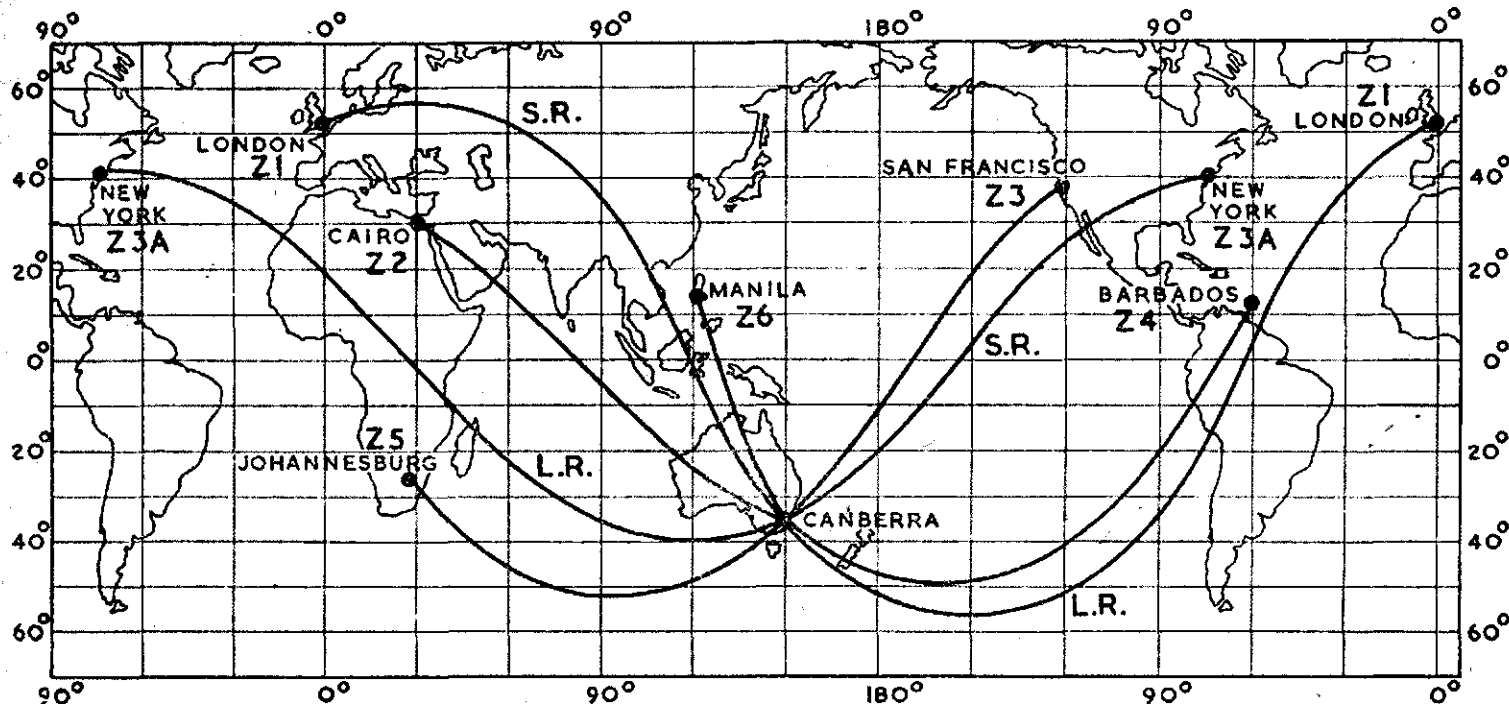


FIGURE 1. GREAT CIRCLES FROM CANBERRA TO THE AMATEUR ZONES.

merely be to select a frequency between the M.U.F. and the L.U.F. at the desired time of day.

Due, however, to the fact that the Amateur bands are located, at the moment, at approximately 7, 14 and 28 Mc., the procedure to be followed by the Amateur must be more specific. Considering, by way of example, the possibility of making a contact between Melbourne and Montreal, one turns to the charts labelled C-Z3A-S.R. and C-Z3A-L.R. (Canberra-New York) as being the nearest available to the desired circuit. The charts indicate that the 28 Mc. band should be open on short route for a few hours before midnight G.M.T., but closed throughout the day on long route. The 14 Mc. band should be available on short route for the greater part of the day with the exception of the period around midnight G.M.T., when the L.U.F. curve approaches closely to 14 Mc., and again in the forenoon G.M.T. when the M.U.F. curve dips towards 14 Mc. The first of these two exceptions may, however, be removed by long-route operation in the 14 Mc. band which should be possible for a while before midnight G.M.T.

Lastly it is important not to overlook the possibility of the 7 Mc. band in the forenoon G.M.T. Use of this band will, of course, depend on freedom from thunderstorms but it should provide about three hours of reliable communication from Melbourne to Montreal on many days in the month.

Another example might be that of a contact desired between Kalgoorlie and Hong Kong. The nearest equivalent is chart P-Z6 (Perth-Shanghai) which indicates many possibilities. The 28 Mc. band should be open for at least ten hours following midnight G.M.T. The 14 Mc. band might be available for the whole day, with the exception of noisy conditions for a few hours after midnight G.M.T. due to the proximity of the L.U.F. curve to the 14 Mc. band. Even the 7 Mc. band should give contacts for nearly ten hours of the day after noon G.M.T.

RELIABILITY OF PREDICTIONS

It is emphasised that ionospheric predictions for the Amateur bands relate only to the average conditions to be expected during the month. It is not feasible, in the present state of the forecasting art, to predict conditions with great accuracy for any specified day. It is known that the M.U.F. undergoes variations from day to day and it is also a matter of practical experience that ionospheric storms occasionally disrupt high frequency communication. Another well-known effect is the occurrence of abnormal or sporadic ionisation in the E region of the ionosphere. Generally speaking this phenomenon is welcomed by the Amateurs, particularly those operating in the 50 Mc. band, but it is not an easy matter to include any sporadic effect in a forecast of average conditions.

In addition to these day-to-day variations in the ionosphere, there are two

systematic sources of error in ionospheric predictions. Firstly the general level of the M.U.F. curve rises and falls in sympathy with the smoothed value of the monthly sunspot number. It is obvious, therefore, that an error in the forecast of sunspots for any specified month will produce an error in the general level of the M.U.F. curve. During recent months the observed sunspot number has been considerably greater than the predicted value, as forecast from past sunspot cycles, with the result that communication has sometimes been possible at frequencies greater than the predicted value of the maximum usable frequency.

Secondly the value of the M.U.F. for long-distance communication depends on the actual height of the ionosphere. Unfortunately it is not possible, so far as is now known, to make experimental measurements of true heights of reflection since all known methods of ionospheric sounding are found to measure virtual heights, i.e. the height that a wave would reach if it travelled exactly with the velocity of light throughout its path. The practical effect of this discrepancy between actual and virtual heights, as it affects ionospheric predictions, is that the predicted M.U.F. curve may be too low during the dawn period. By way of example, the trough in the M.U.F. curve on chart C-Z3A-S.R. occurring at about noon G.M.T. corresponds with sunrise at New York. During this period it may sometimes be possible to maintain communication with Australia in the 14 Mc. band in spite of the M.U.F. curve dipping below this frequency.

FORECASTING METHODS

It does not seem to be necessary to give details in the present article of the fundamental methods of ionospheric forecasting. Complete descriptions have recently been given (see bibliography) of the methods developed during the last war by the U.S. National Bureau of Stand-

ards and by the U.K. Department of Scientific and Industrial Research. The idea lying behind the prediction of the L.U.F. is, however, of recent origin and merits a brief description.

Remembering that we are concerned here only with average conditions, and that sporadic effects are not included, the broad picture of long-distance radio communication is based on the idea that a satisfactory circuit can be maintained only via the F region of the ionosphere at a height of about 300 km. above the earth's surface. It is known that the reflection coefficient of the E region, at a height of about 100 km., is much less than that of the F region, the difference being due to the fact that the density of the atmosphere decreases as the height increases. Consequently it is the aim in long-distance communication to select a frequency for the transmissions which will enable the signals to penetrate the E region but be reflected by the F region. From this point of view the M.U.F. curve on an Amateur band chart gives the penetration frequency of the F region whereas the L.U.F. curve correspondingly indicates the penetration frequency of the E region. It immediately follows that signals at a frequency lying between the two curves will penetrate the E region, as is desired, and will be satisfactorily reflected at the F region.

This is the simple picture but to it one must add some consideration of the mechanism of multi-hop propagation between the ionosphere and the earth's surface. Considering firstly a ray that leaves the transmitting aerial at zero angle of incidence, i.e., tangentially to the earth's curved surface, it is easy to show that it will attain a height of about 325 km. (the F region) at a distance of 2,000 km. from the transmitter. The tangential ray will therefore travel by 4,000 km. hops and this is the distance for which the M.U.F. is calculated. By way of example, communication between Canberra and New York will

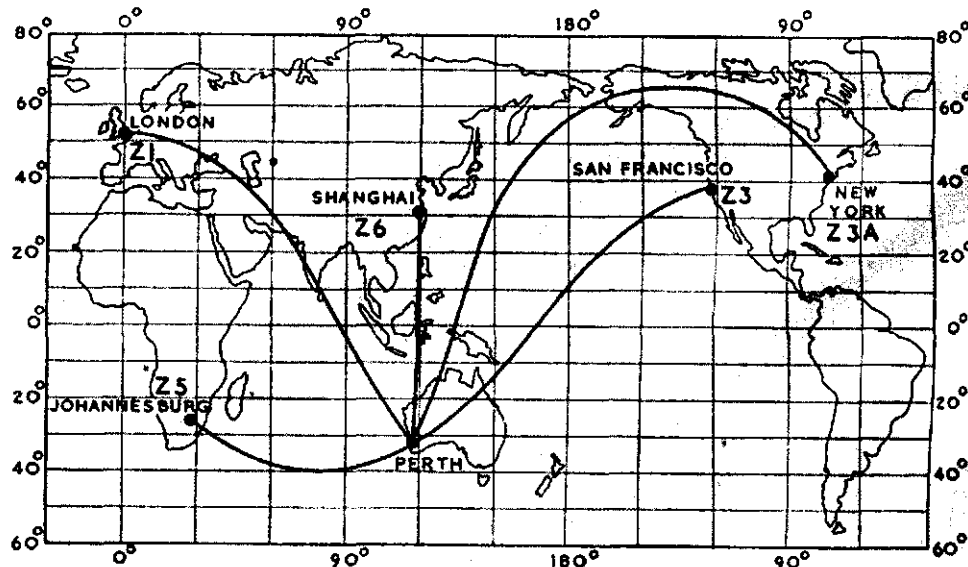


FIGURE 2. GREAT CIRCLES FROM PERTH TO THE AMATEUR ZONES.

require at least four of such 4,000 km. hops if the transmitted frequency is close to the maximum. In other words the distance of 4,000 km. is the skip distance for a signal transmitted at the maximum usable frequency. Signals at higher frequencies will penetrate the F region while only those signals at frequencies lower than the M.U.F. may travel by hops smaller than the maximum distance of 4,000 km.

We must also consider signals that leave the transmitting aerial at some small angle of elevation, say up to 10 degrees above the horizontal. A ray at this angle of elevation will attain a height of about 110 km. (the E region) at a distance of 500 km. from the transmitter and, if it can penetrate the E region, it will eventually rise to the F region at a distance of about 1,250 km. If this signal does penetrate the E region it will travel by 2,500 km. hops between the earth and the F region. If it is held down by the E region it will be returned to the earth at a distance of only 1,000 km. from the transmitter.

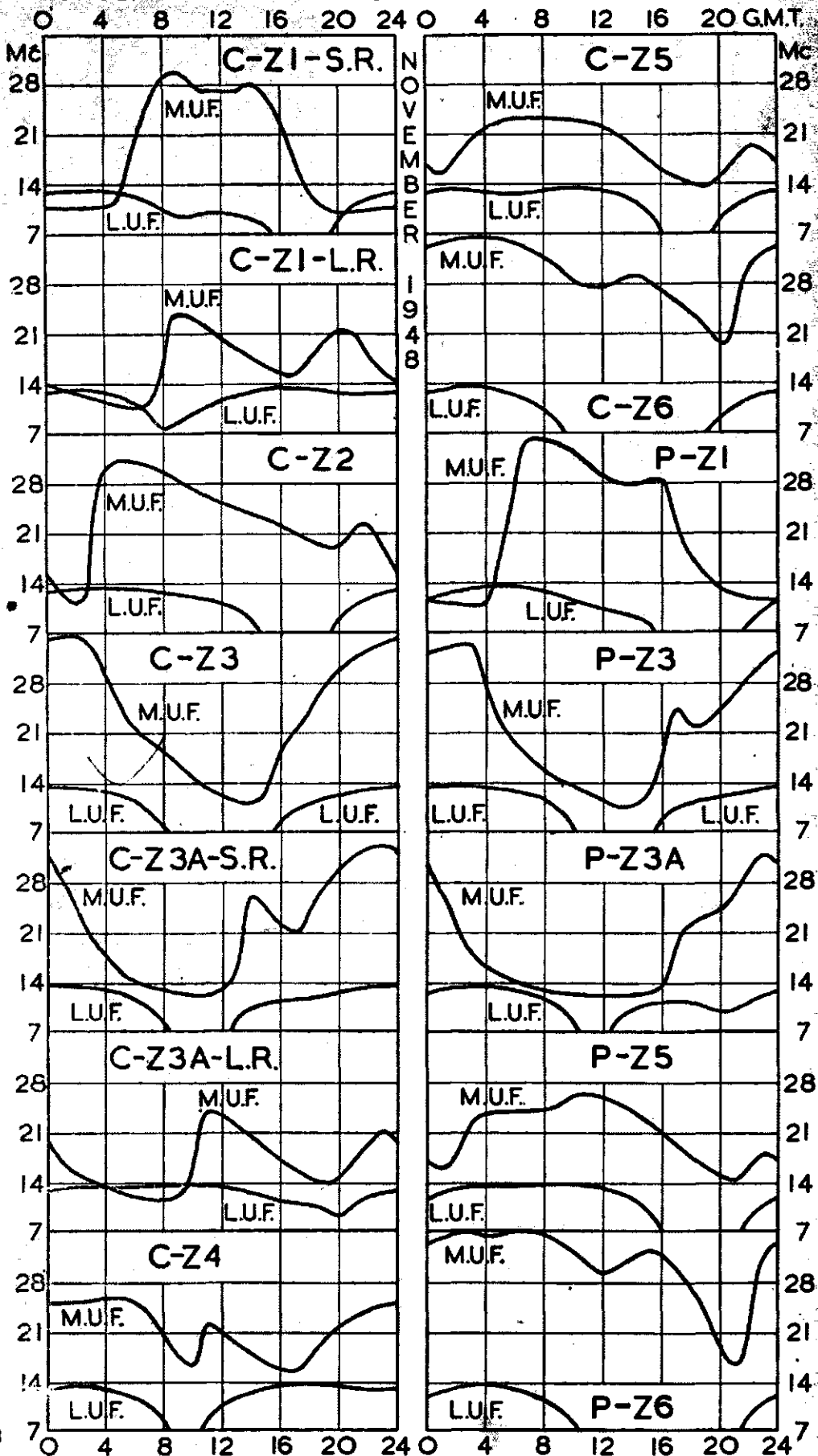
It is clear, therefore, that E region reflections suffer from two disadvantages. Firstly the E region is relatively a poor reflector in its normal state of ionisation. Secondly E region hops are much shorter than those via the F region, with the result that long distances (above 10,000 km.) involve a large number of successive reflections between E region and earth, and signal intensity is lost at each point of reflection. Consequently the L.U.F. curve on the Amateur band charts indicates the frequency at which the useful signals, up to an angle of elevation of about 10 degrees, are held down by the E region and thereby become too weak for long-distance communication.

Another way of defining the L.U.F. is from the length of hop. From the numerical data given above it is clear that the L.U.F. is the skip frequency of the E region for a transmission distance of 1,000 km. Signals at frequencies above the L.U.F. can penetrate the E region and, if the M.U.F. of the F region is greater than the L.U.F. determined by the E region, they can be reflected as is desired by the F region.

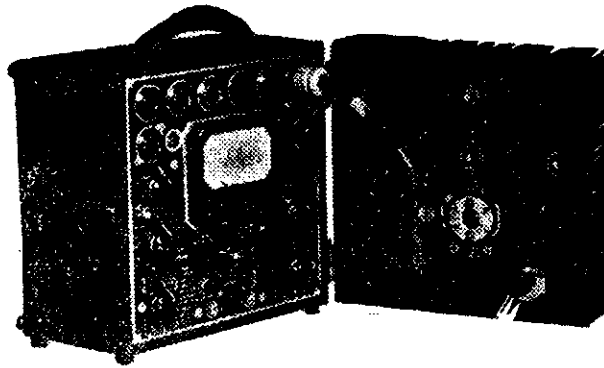
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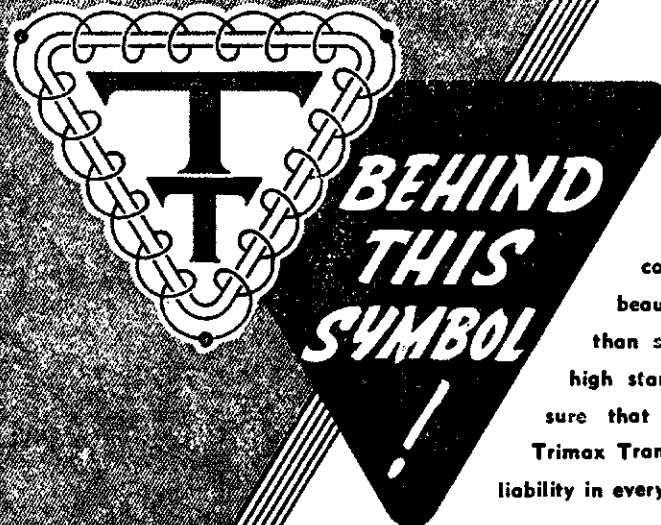
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Making a Simple Narrow Band F.M. Adaptor

BY C. H. CASTLE*, VK5KL

With the increasing use of n.b.f.m. on 28 Mc. by American phone stations, it is in keeping with the times to be able to give the other fellow a good report on his signal, instead of just detuning your receiver slightly until his speech is reasonably intelligible, and letting it go at that.

The advantages of his using n.b.f.m. are lost by your reception on a a.m. receiver. To take advantage of the opportunity offered, and to gain experience of n.b.f.m. a simple adaptor was constructed, and is being used in conjunction with the receiver at the writer's station.

CIRCUIT

Reference to Fig. 1 will show the simplicity of the Adaptor.

The limiter stage consists of a 6SJ7 sharp cut-off tube operating with very low plate and screen voltages, and without fixed bias. This is done so that the stage will be easily overloaded by the incoming signal, thereby removing the amplitude modulated components from the carrier. The limiter is coupled to the 2nd i.f. stage with a 5 pF. coupling condenser, and the grid is returned to ground through the 1 meg. resistor.

Note that the cathode goes direct to earth. The plate and screen-grid receive their h.t. through the voltage divider R2, R3, R4. Due to the high value of R4 (0.25 meg.) and the low values of R2 and R3 (each 30,000), the voltage applied to the plate and screen of the limiter will be very low, therefore correct limiting will be obtained.

Do not use this circuit without R4, otherwise limiting will not be correct, apart from the quick demise of the limiter due to excessive plate current.

The discriminator is coupled to the limiter through the discriminator transformer described later. This transformer has two secondary windings, one tuned above and one below the centre carrier frequency.

With no modulation on an f.m. carrier the rectified r.f. across the load resistors R5 and R6 cancel. As the incoming carrier is frequency modulated, the voltages appearing across R5 and R6 become additive and an audio voltage will appear between A and C.

MAKING THE DISCRIMINATOR TRANSFORMER

The only snag was the discriminator transformer but this was overcome after several attempts, and the following procedure was found to work satisfactorily.

* c/o. Dept. of Civil Aviation, Darwin.

As can be seen from the circuit diagram, the transformer is for 455 Kc. and uses a double section primary and secondary winding. This was constructed out of two iron-cored 455 Kc. i.f. transformers. Take one and carefully remove the wax on the former between windings and after softening the former and coil at the top with a lighted match, push the coil down until it is alongside the other at the bottom of the former. Next remove the fitting that holds the iron slug from the top of the former. Remove both coils from the other transformer, and place on the first former at the top, as in Fig. 2, and replace the slug fitting. Care should be taken to

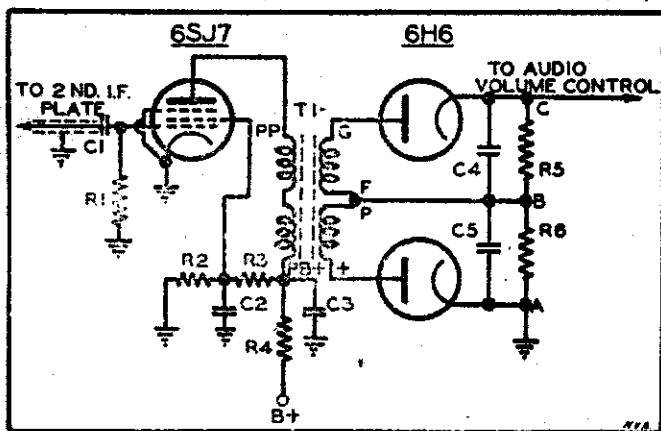


Fig. 1.

- | | |
|---------------------|----------------|
| R1—1 Megohm. | T1—See text. |
| R2, R3—0.03 Megohm. | C1—5 pF. |
| R4—0.25 Megohm. | C2, C3—0.1 uF. |
| R5, R6—0.1 Megohm. | C4, C5—100 pF. |

see that the coils are replaced as taken off so as not to reverse the windings.

The coils are now connected as in Fig. 2, and two leads attached for the primary connections. The windings can now be rewaxed.

Wiring of the adaptor can now proceed, and when completed, connected to the receiver either by temporary shielded leads to i.f. plate and to audio, or the necessary leads taken to a socket on the back of the receiver and the adaptor plugged into that. A toggle switch is necessary to switch the audio from a.m. output to adaptor for n.b.f.m.

ALIGNING THE ADAPTOR

Using a signal generator the first step is to re-align the i.f. stage to 455 Kc. as the loading of the adaptor will have put it off tune. Switching the audio to n.b.f.m., and using a high resistance voltmeter (20,000 ohms per volt), connect it across the first output load resistor from A to B (Fig. 1) noting if the polarity is correct.

Detune the signal generator 10 Kc. to either 465 or 445 Kc. and tune the transformer slug (underneath one) to maximum reading on the voltmeter. Connect meter from A to C, now reversing polarity. Retune signal generator to 455 Kc., and tune the top slug for zero volts. The adaptor is now ready for test.

TESTING THE ADAPTOR

With no signal input to the receiver, switching to n.b.f.m. the noise level and output increases considerably. When a signal is tuned in the noise level drops. This shows that the adaptor is working OK.

Receiving a.m., tune in an a.m. signal and switch to n.b.f.m., the a.m. signal appears to lose its modulation and should be distorted, but can be received OK by tuning to either side of the carrier. Tests show here that receiving a n.b.f.m. station on a.m. the speech is hard to follow but becomes 100% on switching to n.b.f.m. reception.

NOTE.—When using the adaptor the a.v.c. switch on the receiver is switched off. Although this puts on the b.f.o. in some receivers, it is not audible as the 2nd detector portion of the set is not in use at the time.

CONCLUSION

No technicalities will be gone into here as reception differs with strength of signal and deviation ratios used in transmission and is treated in most text books. It is interesting to see the theory work out and at the same time bring your station in line with modern practice.

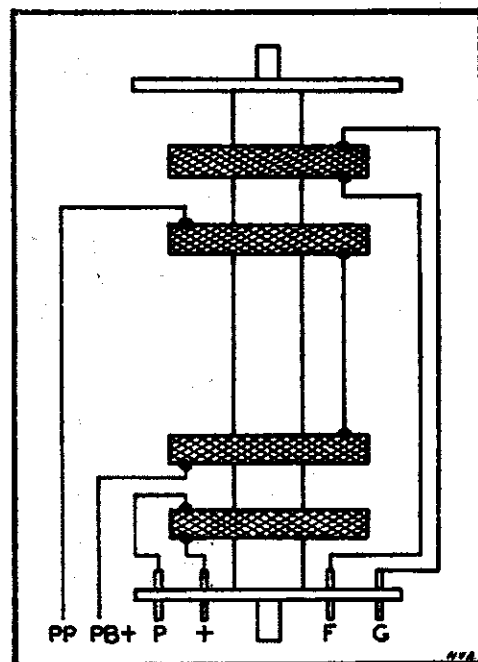


Fig. 2.

A Simple Low-Cost Hydraulic Beam Rotator

BY L. P. MONCUR*, VK3LN

Confronted with the problem of placing a rotary beam at the top of a 105 foot mast, with a major requirement of a lightweight motor which could be pulled up on the halyard, this hydraulic rotator proved the answer, as the total weight of the 3 element series-phased beam, rotator, gib pole, water line, and co-ax feed line is under 10 lbs, and is not nearly the potential danger at the top of the pole as a 50 lb. prop. motor.

The idea has seven major advantages:

1. Extremely light in weight.
2. Absolutely silent in the receiver.
3. Any extreme of speed can be accomplished with the turn of the tap.
4. Can be mounted at any distance from the shack.
5. "Nylex" water line can be run underground to the antenna pole.
6. As the rotator cannot make more than one revolution, the feed line can be connected directly to the beam, without slip rings or inductive loops.
7. Perhaps the main one—you stand an excellent chance of getting some change from the pound spent on the gear.

CONSTRUCTION

The rotator is constructed from an old hand motor-pump, which can usually be had for the taking away, from the junk pile at the local garage.

With a hack saw cut a spiral track $\frac{1}{4}$ " wide running about 400° , in the top half of the pump, see Fig. 1. At the bottom of the track file a small keyway to hold the beam in a fixed position when not in use. This spiral is arranged so that the bottom of the keyway is $\frac{1}{2}$ " less than half the pump length. To obtain a smooth spiral track, it is advisable to cut a strip of cardboard $\frac{1}{4}$ " wide, and fix one end at the required point with plastic tape. Wrap the cardboard around the pump barrel, to obtain the correct spiral described, and fix this end with plastic tape also. A steel scriber can then be run down the cardboard strip to mark the barrel, and the cardboard removed.

The top cap of the pump is drilled out to take a $\frac{1}{2}$ " water pipe. The water pipe is cut $\frac{1}{2}$ " less than the length of the pump stem, plus a flange to take the beam, and welded where shown. A $\frac{1}{2}$ " diameter pin, $\frac{1}{2}$ " long, is welded to the side of the water pipe and the whole unit described is then placed over the stem of the pump and bolted down, using the original handle bolt.

Check the washer, and give a liberal supply of water pump grease, and place in the barrel. Mark the barrel at the bottom of the washer when the pin is 350° away from the keyway, and around this line drill a dozen holes,

$1/32$ " in diameter, this ensures that the line will never be required to carry more pressure than the weight of the beam itself. See that the inside of these holes are cleaned off, otherwise the leather washer will be damaged.

The water feed line is of 4 mil. clear "Nylex" sleeving, $3/16$ " inside diameter, the type obtainable as insulation sleeving, and its low cost (about 16/- per 50 yards) makes the whole thing worthwhile. This feed line is connected to the normal air outlet of the pump, and run back to a stop tap on the water mains (Fig. 2), making sure to break down the pressure to $3/16$ " size with metal pipe fittings, which will withstand the water pressure. A $\frac{1}{4}$ " plug is fitted to the stop tap, and drilled to take two $3/16$ " outside diameter copper tubes, which are sweated into the plug. The other end of the copper tube, which takes the "Nylex" sleeving, is tinned with solder to make a tight fit. The remaining tube is the by-pass, and is controlled by a standard petrol tap. The water is then taken to the nearest drain or your favourite vegetable plot. About one cupful of water is required for each revolution of the beam, and as the

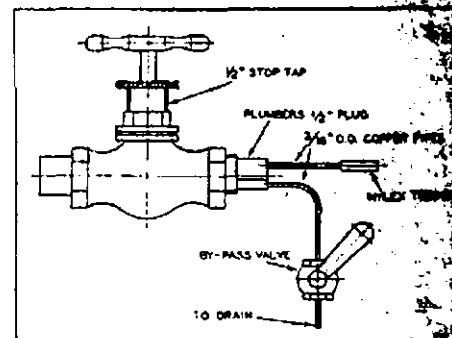


Fig. 2.

Method of water outlet from water mains.

system remains full of water when not in use, this is the only water used.

The hydraulic rotator is mounted on a small gib pole (Fig. 1), together with a small upturned saucepan, large enough to go over the top of the mast, and a metal "U" piece at the bottom. The whole unit is pulled up on the halyard, and the saucepan goes over the top of the main pole, thereby removing all weight from the halyard. The "U" piece fits around the main pole and is held there by the halyard return.

There is no reason why this idea could not be used for 14 or 28 Mc. beams, as the weight of a 4 element 14 Mc. beam is nothing when compared with a line full of wet clothes, as occurs with the hydraulic rotary clothes hoist. If the weight of the beam is not sufficient to ensure a water-tight pressure on the pump washer, it is not much of a worry as it only means allowing a drop or two of water through the mains tap to compensate for it, anyway it works like a charm at VK3LN.

SOCKET-PIN PROTECTOR

When you are stripping some of the gear and want to be able to use the parts again in another rig, damage to the fragile socket-pins can be avoided easily by plugging an old tube in the socket while you unsolder the connections. The pressure of the tube pins against the socket terminals keeps them straight, and prevents bending and loosening.

CHEAP MOUNTING FEET

A short length of $\frac{1}{4}$ " rubber tubing, available in almost any hardware shop, may be used to provide cheap mounting feet for the usual steel chassis used in Ham construction. Cut the tubing into four pieces, and then slit each piece lengthwise. Slip one piece on each corner of the chassis. The feet will prevent the chassis from scratching the furniture, and if you're afraid of scratching the chassis when you have it on the bench for testing or repair, a set of "feet" can be kept handy to be slipped on until the chassis is returned to the rack.—QST, Sept., 1948.

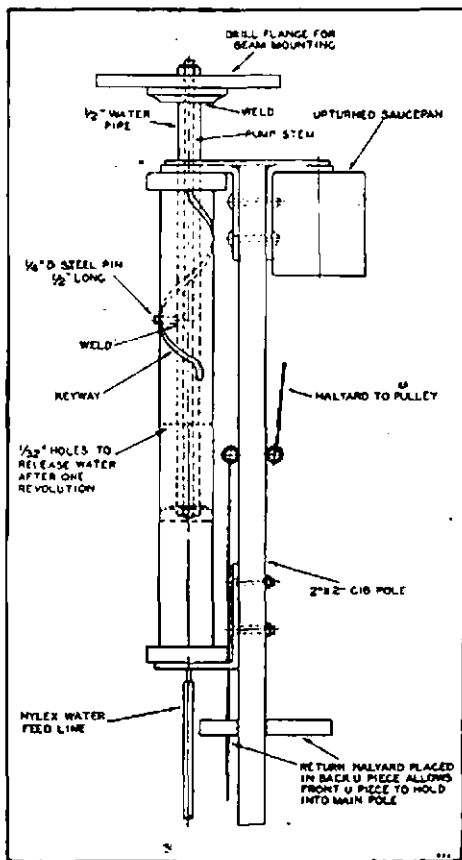


Fig. 1.

General constructional details of rotator showing mounting of pump.

* 235 Union Road, Ascot Vale, W.2, Vic.

DESIGNING A V.H.F. TRANSMITTER

BY J. N. WALKER*, G5JU

Whereas it used to be considered that special V.H.F. technique must be applied to frequencies above 30 Mc., it is now recognised that normal circuitry can be used up to at least 60 Mc., providing the valves are suitably chosen and the physical dimensions of the associated components kept reasonably small. Many readers will have experience with crystal controlled transmitters with final frequencies in the region of 50 to 56 Mc. but may not be familiar with a few circuits which can be easily applied to their existing transmitters and which will result in improved efficiency.

As frequencies rise into the very high region, several inter-related difficulties arise. Due to the greater relative effect of valve and other stray capacities, the coil Qs become small and the Q values low. Driving power is insufficient and loss of efficiency results. The latter means that heat dissipation inside the valve is greater than it should be and the input has to be adjusted accordingly. Generally speaking, a larger valve than is really necessary has to be employed.

A little juggling with the circuitry will improve matters all round. Increasing the efficiency of the early stages will result in greater power output and, in cases where it has been necessary to struggle to obtain the last ounce of drive, a distinct improvement will result.

The special valves now made for V.H.F. work can also make a considerable difference, particularly the twin tetrodes (832, 815 and 829). Their drive requirements are low and useful inputs (and outputs) are possible with relatively low anode voltage. Further, the form of construction of these valves assists in the design of a compact circuit with short wiring. The internal screen by-pass condenser promotes stability, usually somewhat difficult to achieve with beam tetrodes.

In the first place, it is assumed that the various stages in the transmitter are frequency doublers and not multiplying three or more times. The usual circuit

may be as shown in Fig. 1a with capacitive coupling between stages. Alternatively, the grid circuits may be separately tuned coil condenser combinations with link coupling, Fig. 1b. In both cases, the stray capacities, represented by the valve electrodes, tuning condenser minimum and various other capacities, are in parallel with the coil inductance and add up to a formidable total—often 40 pF.—which at high fre-

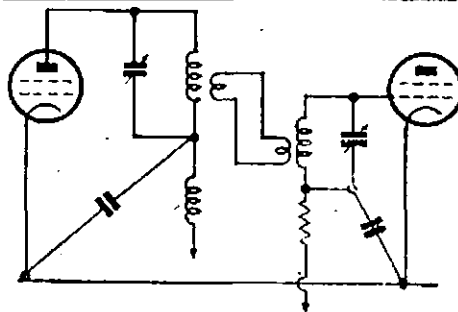


Fig. 1b.—An improvement over Fig. 1a, but the tuned circuits still have the stray capacities in parallel.

quencies, is a serious drawback. The inductance which can be used is necessarily small, the Q or coil magnification is low, as also is the dynamic resistance of the tuned circuit and, with the comparatively low input impedance of the valve also in parallel, it is obviously a difficult matter to induce voltage of reasonable magnitude across the circuit.

The circuits in Fig. 1 are both single-ended. By converting them to balanced or double-ended circuits, as in Fig. 2 operating conditions are definitely improved. The output capacity of V1 and the input capacity of V2 are now in series across the coil whilst the damping effects of the valve impedance are much reduced. Consequently, the size of the coils can be much larger. The actual increase will depend largely on the value of the tuning condensers in relation to the stray capacities but a sixty to seventy-five per cent. increase in the number of turns will be correct in the majority of cases.

Tuning will be noticeably sharper and more care in adjustment of each stage will be called for. Split-stator tuning condensers are necessary, the circuit finding its earth point via the earthed rotor. The centre tap on the coil may be earthed, either directly or by means of a blocking condenser, else the balance of the circuit will be upset. A good choke, or alternatively, a resistor of low value (470 to 1,000 ohms), should therefore be inserted in the lead to the centre tap.

FREQUENCY TREBLERS A pentode or tetrode valve, over-biased and driven hard, will give practically as much output on the third harmonic as on the second. Advantage

may be taken of this feature to reach the final frequency in fewer stages than would otherwise be necessary.

It has been found that the balanced circuit is not so efficient as the single ended in a stage designed to give odd harmonic multiples (e.g. the third). When tripling, therefore, the single-ended circuit should be used but with the anode (or grid) tapped down the coil about half way, to remove some of the effects of valve capacity and loading.

Still better is a push-pull tripler stage, which will give greater efficiency and output. The twin tetrode—in particular the 832—lends itself well to the purpose. The circuit will be of the normal type, with split-stator tuning in both grid and anode circuits, the latter, of course, being tuned to three times the frequency of the former. Even harmonics cancel out and no second harmonic output can be obtained.

PRACTICAL CIRCUITS In the first place, the reader must decide the fundamental frequency—which, it is assumed, will usually be a crystal, and the sequence of following stages, which may be doublers, treblers or a combination of both. In order to save a valve, the

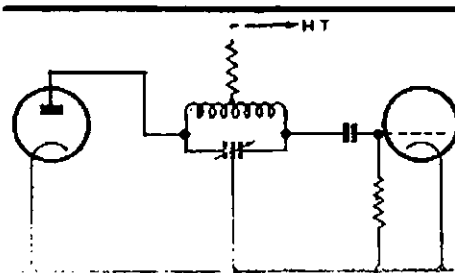


Fig. 2.—Balanced circuit, with the stray capacities effectively in series. Much greater coil sizes can be used.

first stage should be a tritet, with the output on either the second or third harmonic. From then on, balanced circuits with capacitive coupling will prove both simple and efficient.

A number of split-stator condensers will be required and the sizes of the coils will probably call for some experimental work. The L/C ratio of each tuned circuit, for efficient operation, should be kept as high as possible, hence small condensers, such as the Eddystone Cat. No. 583 or 584, are quite suitable.

The final frequency multiplying stage should be link-coupled to the tuned grid circuit of the power amplifier, which, it is assumed, will be either an 832, 815, 829B or one of their British equivalents. With 829B, and input of up to 100 watts, an output of up to 60 watts should be realised without difficulty.

(Continued on Page 11)

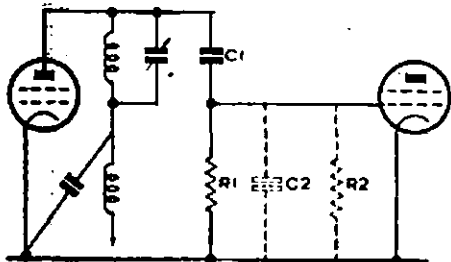


Fig. 1a.—Normal capacitive coupling. Stray capacities and loading represented by C2 and R2, are in parallel with the tuned circuit, which condition seldom allows the proper L/C ratio to be used.

* Technical Department of Eddystone Works, Stratton & Co. Ltd., Birmingham, England.

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DESIGNING A V.H.F. TRANSMITTER

(Continued from Page 9)

For those who like to work to a definite circuit, Fig. 3 is provided and details are given of component values. The circuit is suitable for CW or telephony operation—with the latter, the usual method of simultaneous anode and screen modulation of the final valve should be employed.

Several modes of operation are possible, the following being examples:—

Crystal	6V6 Anode	1st half 832	2nd half 832	Final Output
6.25 Mc.	12.5 Mc.	25 Mc.	50 Mc.	50 Mc.
7 "	14 "	28 "	56 "	56 "
6 "	12 "	24 "	48 "	144 "

(Trebler)

In the latter case, the final valve in Fig. 3 would be used as a power trebler, although it would be better practice to add a further double tetrode as a straight-forward power amplifier.

If a VFO is substituted for the crystal oscillator, it should be arranged to give an output over the frequency range 3 to 3.75 Mc., the 6V6 in Fig. 3 then acting as a frequency doubler. In this case, the tuned circuit in the cathode of the 6V6 will of course be omitted. By simply changing the final anode coil, it will then be possible to cover both bands—50 and 144 Mc.

Experiments have been carried out on the final anode circuit on frequencies in the region of 50 Mc. and 144 Mc.

In neither case was any real benefit obtained by the use of linear tank circuits, using copper tubes, etc., provided the smallest possible amount of tuning capacity was used at C in Fig. 3. It is surprising how large a coil is required with double tetrode valves—up to 6 turns of 2" diameter on 50 Mc., and 3 turns 1½" diameter on 144 Mc.

More attention than usual should be paid to by-passing and to reduce the inductance and impedance of wires carrying RF currents, copper strip ¼" wide should be used instead of wire. Such strip, if not readily obtainable, can be cut from a sheet of foil.

Further, the usual precautions of keeping all leads very short, and of using one common earthing point per stage, should be observed.

AERIAL COUPLING Co-axial feeder or balanced line is obviously the best method, at these frequencies, of transferring the RF energy to the aerial. A single coupling loop, with ceramic bead insulation, arranged at the centre of the tank coil, and taken to a suitable plug or socket, is usually all that is necessary. A small relay, totally enclosed in a metal box, should be used for changing over from transmitter to receiver. The cable links between the aerial relay box and the gear should be of an electrical length (usually two-thirds of the physical length) equivalent to either one or three quarter wavelengths.

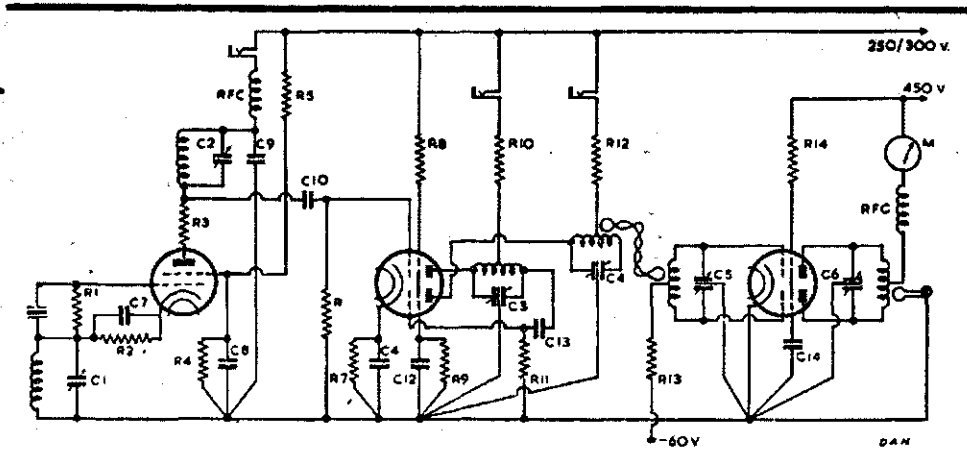


Fig. 3.—Typical Circuit using 6V6, 832 and a final 832, 815 or 829B. The output frequency can be arranged for 50, 60 or 144 Mc. Two 6V6s can be substituted for the first 832.

- C1—160 pF. variable.
- C2—60 pF. variable.
- C3—25 x 25 pF. variable.
- C4, C5, C6—15 x 15 pF. variable.
- C7, C8, C9—0.002 uF.
- C10, C13—50 pF.
- C11, C12, C14—500 pF.
- R1—100,000 ohms, 1 watt.
- R2—200 ohms.
- R3—12 ohms.

- R4—33,000 ohms, 1 watt.
- R5—20,000 ohms, 1 watt.
- R6, R11—47,000 ohms, 1 watt.
- R7—250 ohms, 3 watts.
- R8—5,000 ohms, 3 watts.
- R9—15,000 ohms, 3 watts.
- R10, R12—470 ohms, 1 watt.
- R13—1,000 ohms, 1 watt.
- R14—7,500 ohms, 5 watts.
- M—100 Ma. Meter.

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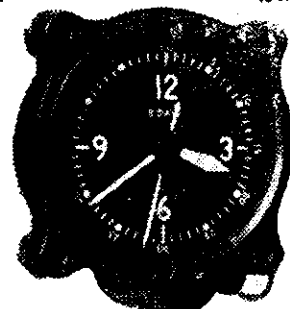
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TIME MARCHES BACKWARDS

BY WARWICK W. PARSONS*, VK5PS

Just recently I was fortunate to come upon a copy of the one-time official organ of the W.I.A. (S.A. Division), to wit, "The South Australian Wireless and Radio." The copy was dated 1st October, 1924, and the feeling of nostalgia which crept over me as I perused the pages prompted the thought that some of the paragraphs might prove entertaining to others.

Page one had in bold type "Will It Last? Is it (radio) just another craze that will pass?" The editor has no doubts about it, because he says in reply "That radio will last is as certain as the sun shines. It will do more than last. With improvements being reported every day, radio will perform such a public service that it will become one of the necessities of everyday life." (How true these words have been borne out would probably astonish even such an optimistic gentleman as the editor appeared to be.)

Our old friend static was in evidence on page two—because 5BG (Harry Kauper) is reported as saying "Loop aerial sets will be necessary to pick up long distance stuff now that summer has set in." He also naively remarks, "It is no good cursing the local broadcasters for broad tuning if you are using a single circuit in your receiver." In fact he doubts if a double circuit would do much good either. (I seem to have heard that one lately too.)

Page five throws a spanner in the works: "The boom begins, Amateurs anxious about transmission rights . . . Radio is moving fast, on all sides enquiries are coming in from Amateurs concerning the right to transmit . . . Among the old hands who listened in with experimental licences are many who have a keen desire to transmit . . . As a matter of fact, queer call signs are frequently picked up which suggest that experimenters are already on the job. (Naughty boys.) The licence fee to transmit is given as five shillings per annum, and most Hams thought this a bit tough." (I wonder what they would think now?)

The sixth annual general meeting was held on 3rd September at the University of Adelaide, and a full report appeared on page seven. The President, Mr. R. B. Caldwell stated, "Regulations in the past have not been very liberal as far as the Radio Amateur is concerned, and I can quite imagine the Amateur of the future being asked to pass a highly technical examination, do a test of 30 or 40 words per minute in morse code, and then being licenced with a maximum power of five watts to transmit on

the air between 2 a.m. and 4 a.m. by special permission of a J.P. (You beaut.) He also was slightly off the target with "Regarding broadcasting as at present defined, I am inclined to the feeling that it is not going to be the success, nor the revenue producing concern that some people anticipate." However he was credited with a bullseye when he said, "The future of the Amateur will depend in a large measure upon union among themselves, and it behoves us to court all wireless clubs to affiliate with the Institute, so that a united front may be presented should the rights of the Amateur be assailed." (Words just as applicable then as now.)

A list of Amateurs in VK5 was on page nine and several stalwarts were listed even then. 5AC (Roy Cook), 5AH (Freddy Williamson), 5BF (Frank Miller), 5DA (Roy Buckerfield), 5BN (Hal Austin), also a guarded mention of a "pirate" being heard often. (Probably 5JS or 5LW!!)

On page ten is a letter of thanks from a reader to 2FC for shutting down between 9 p.m. to 10 p.m. to permit listeners to try and tune in to KGO. It says "A fine gesture 2FC." (Couldn't you see a broadcasting station doing that these days?) Page 10a states, "You cannot beat a crystal set for good reception. Four pounds for a set with headphones and a Government licence will give you the most fascinating entertainment imaginable."

Page eleven reports, "In opposition to the time signals, a new spark station has come to light with genuine dots and dashes at any old time between 9.35 and 9.45 p.m." (Bring me the absorption meter Jeeves!) Also on this page was "Removing the slider contact on his receiver, an Amateur at Wallaroo overheard two ladies talking on the telephone." A telegraph messenger at Berri "picked up California on his home-made set and became so excited that he dropped the receiver and hopped off to see a friend." (Must have dropped the receiver on one of his big toes.)

Page fifteen carries details of a meeting of the West Suburban Radio Club and several members' names bear a familiar ring. The Quorn Radio Society also held its first meeting amid great enthusiasm. The Subiaco Radio Club also held a special demonstration illustrated by lantern slides. On page

eighteen I notice that a Mr. L. Deane (Tusmore Park) asks how many turns he will require to receive Sydney and Melbourne. He is using a dull emitter valve. (You little devil Launce, playing around with a dull emitter valve, it might have gone off Pop, Pop.) Page twenty lists Interstate Hams who are putting in good signals into VK5. The following get the palm:—2RJ, 2HM, 2GQ, 2YI, 3PR, 3EF, 3RY, 3BU, 4AN on c.w. and a VK6 call sign unknown.

Page twenty-two headlines the fact that a young Amateur 5DA (Roy Buckerfield) had succeeded in contacting America on 90 metres, and this is claimed as an Australian record. It says, "Roy started off with a modest CQ but no reply was received, after five calls U6AKW came back." (Was the fifth CQ a very immodest one Buck?) Page twenty-four had a local "menace" who gave a very amusing write-up on the doings of the boys, and one example is priceless, "Radio Amateur Station 5BN (who incidentally is our President today, 5AW), it is stated, has recovered from a burnt out transformer, and is about again. His music is very nice to listen to now, especially from the new tone arm." (Did you suffer much Hal, from the burnt out tranny?)

Well fellows, there was quite a lot more in the same strain, but I think I have taken up enough of the editor's, and your time. A lot of water has flowed under the bridge since then, and we have improved in the art tremendously, OR HAVE WE? Anyhow, never let us forget the debt we owe to the pioneers of Amateur Radio, which is still the grandest hobby ever.



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Resurrecting an L.M. Type Bendix Frequency Meter

BY J. C. DUNCAN*, VK3VZ

During the past two years quite a number of Bendix Frequency Meters have appeared on the disposals market. These Instruments are of two main types, BC221, which has a self contained battery supply in a compartment under the Meter, and the type LM which is much smaller and depends on an external d.c. supply for its power. In addition the LM type can be modulated from an audio oscillator contained in the unit.

Both types of Frequency Meter have a very similar system of calibration, having a reference book which gives the frequency for each reading of the dial, the accuracy of the Meter being ensured by a built in 100 Kc. oscillator which beats against the variable oscillator and provides a number of check points throughout the spectrum. The variable oscillator is made to agree with the check point in the book by varying the small corrector dial on the front panel, which is simply a small trimmer across the main tuning circuit.

The big catch is that these Frequency Meters no sooner hit the shelves when they are snapped up, and unless you happen to be on the spot you miss out, and it is for the benefit of we unfortunates that this article is written, because the only Frequency Meters which remain on the shelves are the ones which have lost their calibration books and are therefore shunned by all.

The writer came upon one Meter recently, which was in such a plight, and was purchased for a very much reduced amount, with some fear, as might be realised, that we had "bought a pup." However after some experimenting it was found that the frequency range of 3.2 Mc. to 4.0 Mc. was straight line, and a system of calibration was devised which enables the frequency to be read directly from the dial calibrations.

It is a well known fact that if the lumped capacity across a tuned circuit is varied, the spread of the main tuning capacity can be spread or contracted at will, which gives us a means of altering the coverage. If the lumped capacity is increased the spread of the main condenser will be decreased, and visa versa. Therefore if we decrease the value of the lumped capacity across the tuning circuit of the Frequency Meter slightly, the main tuning condenser will contract so that 100 degrees will equal 50 Kc., instead of 101 degrees as originally.

When this is done, each degree on the dial will equal 500 cycles on 3.5 Mc., and as the error is no greater than 0.6 of a degree from 3.2 to 4.0 Mc., very accurate frequency checks are obtained, reading directly from the dial. The change necessary in the lumped capacity

of the tuned circuit is made on the small adjusting trimmer under the dust cover, located to the right of the corrector condenser, marked "H."

The alterations to the Frequency Meter were made as follows: It is most essential to have an oscillator on 100 Kc. which will give check points to enable the meter to be set up. This can be made quite simply by using a pie wound 7 mH. r.f. choke, and taking the cathode tap from between the pies. A standard broadcast condenser, with a small trimmer in parallel for fine adjustment, will be necessary, and it would be as well to see that the oscillator does not suffer from hand capacity effects. A broadcast receiver which has the broadcast stations marked, and also 100 Kc. points, will give a rough indication of frequency, provided the stations come in on the dial calibrations. After a rough setting has been made, zero beat on a broadcast station on a multiple of 100 Kc. or WWV, and check on the WWV transmissions on 5, 10 and 15 Mc., at a time when audible. If the oscillator is zero beating on all these frequencies, it will be on 100 Kc. The capacity required will be 362 pF. with the 7 mH. choke (RCS type 85).

Tune the 100 Kc. signal in at 3.5 Mc. on the station receiver, and zero beat the Frequency Meter. Note the dial reading, with the corrector at centre scale, then rotate the Frequency Meter dial two revolutions, and zero beat on the next 100 Kc. point (3.6 Mc.). On the writer's Frequency Meter this was 2 divisions more than the first point noted. This indicates that the main dial is spreading slightly more than required, and the amount of fixed capacity across the tuned circuit must be reduced slightly. The dial of the Frequency Meter is retuned to 3.5 Mc., and then turned about 10 divisions lower in frequency. The trimmer under the cover marked "H" on the front panel is altered by a screwdriver to bring the 3.5 Mc. signal back to zero beat, which is in effect lowering the capacity of the trimmer by a slight amount. Again take a reading and rotate the dial two revolutions to 3.6 Mc. The zero beat on 3.6 Mc. should now be nearer to the first reading taken on 3.5 Mc.

After a few tries, a setting will be found on the trimmer where every two revolutions of the dial will equal exactly 100 Kc. Then work between 3.5 and 4.0 Mc. for 10 revolutions, which will give a more critical adjustment of the trimmer for the ends of the range required. A check each 100 Kc. between the points mentioned above will show that each 100 Kc. point occurs at the same reading on the dial, every two revolutions, with an accuracy of half a division. As every division is equal to 500 cycles, this is sufficient for our purposes.

It is not advisable to feed the 100 Kc. oscillator into the Frequency Meter, and listen to the beats with the headphones plugged into the meter itself, because the harmonics of the two oscillators will beat together and give a series of heterodynes which will cause confusion. Far better to use a receiver and avoid this source of error. In the writer's case it was found that when 3.5 Mc. came in at 3411 divisions, the 100 Kc. points were aligned correctly, as described above. As these meters are accurately matched, it would be a good plan to set 3.5 Mc. to this reading, and the readings may be sufficiently close to use as a starting point.

The three grub screws on the dial were taken out, and the calibrated dial plate removed. It will be found that one of the three holes in this plate is in line with the zero mark on the dial. Three holes, of the same size must now be drilled in new positions, so that zero on the dial will come where 11 divisions came previously in my case. This is easily done by laying a steel rule across the dial face, and using the calibrations on the edge of the dial to determine the new position of the hole. The other holes are then marked 120 degrees apart with a protractor. It is essential that care and accuracy be taken in the drilling of these holes, and their marking and centre punching beforehand, to ensure that the dial will read exactly zero, with 3.5 Mc. zero beating on this Frequency.

It may sound complicated but actually is quite simple provided care is taken, and every step checked before proceeding to the next one. The drum dial was then shifted so that it read 35 instead of 34 when on 3.5 Mc. This dial will then show each 50 Kc. point on the fundamental. In practice it is easier to work the frequencies from 7 Mc., as each drum dial division is then 100 Kc., and the smaller dial 1 Kc. Multiply the reading by 2 for 14 Mc., and 4 for the 28 Mc. band, and divide by two for the 3.5 Mc. band.

A check point will be obtained at 3.5 Mc. from the in-built 1,000 Kc. oscillator, when the second harmonic of the variable oscillator beats with the seventh harmonic of the crystal. The corrector dial is then adjusted to make zero beat occur at 0 degrees on the main dial.

Power Supply.—A small power supply was built on the rear of the cabinet, and a metal cover made to enclose it, this cover being fixed with self tapping screws to the sides of the cabinet.

The 12 volts a.c. was obtained by putting the 5 volt and 6.3 volt windings in series on the power transformer, and taking the filament of the 6X5GT rectifier from the 6.3 volt section of the winding only. An octal socket and plug were substituted for the 5 pin socket originally on the unit.

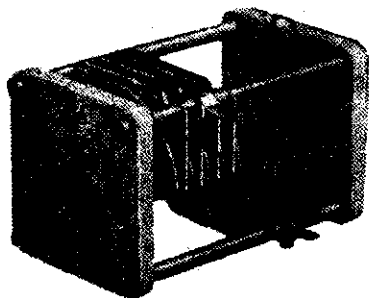
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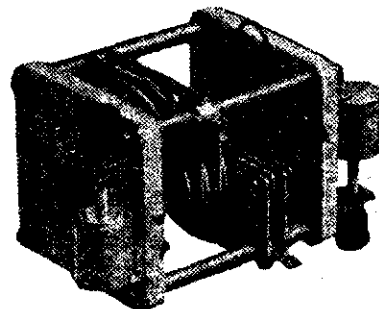
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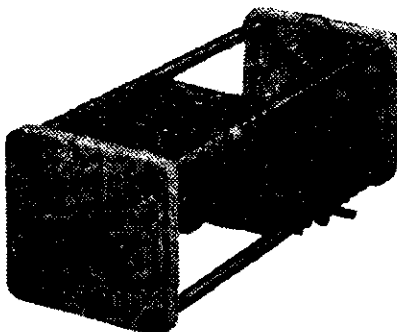
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This is a split stator condenser of rigid construction and fitted with ceramic end plates $2\frac{1}{2}$ " square. Maximum capacity per section is 50 pF, and the vane spacing is .08". It is very suitable for use in amateur transmitters working on frequencies in the 28 and 14 megacycle bands.



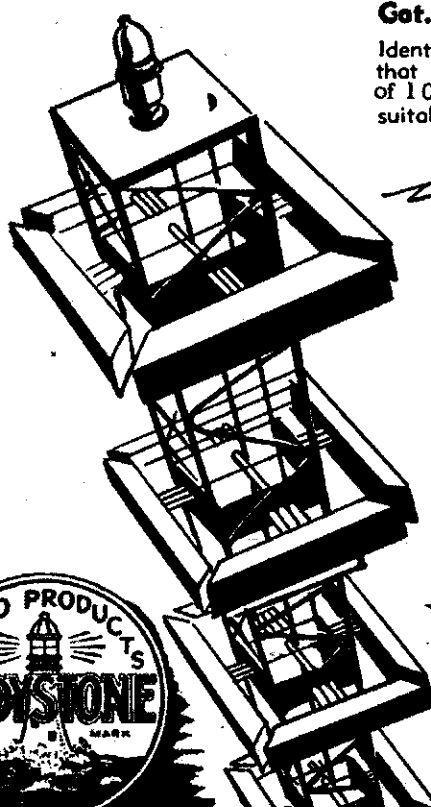
Cat. No. 611 . . . 57/-

Of similar construction to Cat. Nos. 612 and 614 and a capacity per section of 25 pF. Two neutralising condensers having a variation of from 1.5 to 7 pF are integrally built-in, one at each end, and lugs are fitted for direct connection of the tank coil. The whole assembly is ideal for use in a medium power V.H.F. transmitter employing low capacity triodes in a symmetrical push-pull circuit.



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Identical to Cat. No. 612, except that it is longer and has a capacity of 100 pF per section, making it suitable for the lower frequencies.



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BUILD YOURSELF A BRIDGE

BY STEVE GRIMSLEY*, VK3ASG

A "MUST" for the shack—here is a simple LCR bridge with a thousand uses for the Amateur and Serviceman.

How many times in building up an item of gear does one pick up a component and say, "I wonder if this will do the job?", or "I wonder what capacity range this condenser covers?" That happens to me so often, and so many parts have to be restored to the junk box unused because their values are an unknown quantity, that I decided to make up a bridge.

Remember the Wheatstone bridge circuit? Basically, here is the idea. As in Fig. 1a four resistances are connected in series-parallel to a voltage source, E, and a galvanometer connected between points X and Y in the network. If—

$$\frac{R_1}{R_2} = \frac{R_3}{R_4}$$

then there will be no reading on the meter, as the voltage drop across R_1/R_2 and R_3/R_4 is identical, and consequently no potential difference will exist at points X and Y. When this condition exists, the bridge is said to be "balanced." Now if R_4 is a variable known resistance, and calibrated, then R_1 can be replaced with an unknown value, and the bridge brought back into balance by adjusting R_4 till there is zero reading on the meter. The value of R_1 is then ascertained from the R_4 calibration.

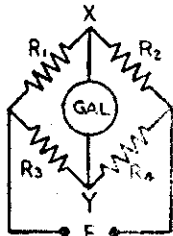


Fig. 1a.

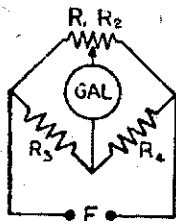


Fig. 1b.

A form of bridge in which the ratio arms (R_1 and R_2) are continuously variable, is known as the "Slide-Wire" Bridge, and is a more convenient form of the Wheatstone Bridge for our purpose. This circuit is illustrated in Fig. 1b. The balance is achieved by solving the same equation, viz—

$$\frac{R_1}{R_2} = \frac{R_3}{R_4}$$

However, the standard does not have to be variable, thus range selector switching is more readily possible, and the ratio arms can be made common to all ranges.

By substituting an audio tone for the voltage source, E, a pair of headphones may be used instead of a meter, for the zero or "null" indicator. As this arrange-

ment may be used with capacity or inductance forming the standard arm of the bridge, we have the makings of an instrument with decided possibilities.

And so to our bridge. With this bridge a good range of useful values is covered, it is extremely simple to build, it is economical in cost (surely a redeeming feature!), and it is fairly accurate provided that reasonable care is taken in its construction.

The circuit of the bridge is shown in Fig. 2. By switching in the standards indicated, the ranges of the bridge are: Resistance—10 ohms to 0.8 megohms; Capacitance—10 picofarads to 0.6 microfarads; Inductance—30 microhenries to 30 millihenries. These ranges may vary slightly with individual instruments.

On range F, an external standard may be used C1—450 pF. Mica. and graph calibrated to C2—0.005 uF. Mica. extend these ranges to R1—3,000 ohms. suit individual requirements. However, the ranges provided seem to be those needed most, in my own case at least!

The physical construction of the bridge is shown in Fig. 3. The battery switch, headphone jack, external standard terminals and test leads, are located on the rear panel of the unit. The box may be made of almost anything—iron, aluminium or wood. The panel can be ebonite, bakelite, plywood, masonite, metal, or "what have you." But please—insulate that potentiometer and phone jack!

The potentiometer and range selector switch are mounted on the panel in a central position, each 3 inches from the ends of the panel, with the potentiometer on the left. The resistor strip bearing the five standards is mounted on the rear of the panel, over the selector switch. If not already provided, file a "flat" on the control shafts so that the knobs cannot shift. Imagine the mess if your potentiometer knob shifts after the bridge is calibrated! Use a knob with two grub-screws if one is handy. Fix a celluloid pointer to this knob—fix it permanently—and mark the pointer with a black ink hairline. The scale is merely a 5 inch circle of good quality drawing paper, glued flat and fixed to the panel with three "self-tapping" screws. This dial is divided into six circles, five for direct calibration, and the outer for a convenient scale of numbers to use in conjunction with graph calibrations and external standards. The scales are marked A, B, C, D, E and F, and the selector switch likewise. Make your test leads of heavy but flexible wire, keep them

short, and furnish them with a pair of strong crocodile clips or similar.

The internal standards need not necessarily be very accurate. Any parts of reputable manufacture will do. However, the components used to calibrate the instrument should be as accurate as possible, of good quality and with known low tolerance.

The method of calibrating the bridge is no doubt obvious to those fellows

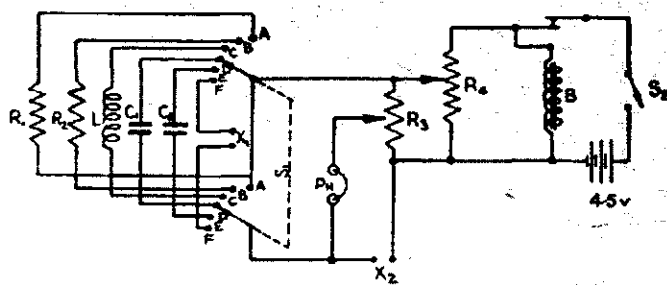


Fig. 2.

- B—Buzzer (high pitch if possible).
- S1—Two pole six position.
- S2—S.P.S.T. Toggle.
- PH.—2,000 ohm Phones.
- X1—External standard terminals.
- X2—Test leads for unknown.

who (as Henson would put it) have had the perspicacity and good taste to read this article. Switch to range A, connect the test clips to a suitable accurate value, say 1,000 ohms, switch on the buzzer, adjust tone level in phones by means of the volume control, and swing the knob until a dip in tone level to zero is heard. Swing the knob slowly back and forth, to ascertain dead centre of "null." There is quite a pronounced

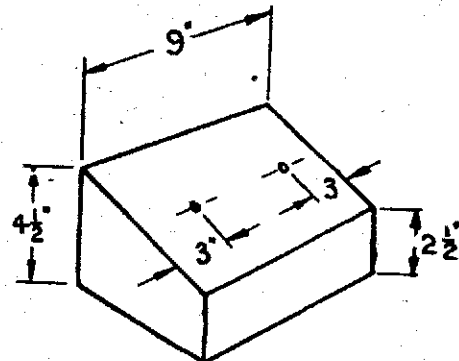


Fig. 3.

dip at "balance," and the audio should completely cancel. Now mark your A scale with ink at the appropriate spot, and enter the value. Try the same resistor on B range. It may also register there—near the extreme "low" end. Back to range A and parallel your calibrator with another 1,000 ohms. Repeat

* "Starlings," 46 Warrigal Rd., Surrey Hills, E.10, Victoria.

An Accurate and Inexpensive Wavemeter

BY DR. K. M. KELLY*, VK3ALL

This instrument is much the same as any other Wavemeter, except that it is tuned by a slug, and very accurate readings are possible. It operates on the 3.5 Mc. band, and accuracy better than 250 cycles is easily obtained (or within 1 Kc. on the 14 Mc. harmonic). The whole unit is encased in a metal box, including batteries.

A shorted plug can be placed in the jack for accurate measurements—the headphone cords make for slight inaccuracy (although this can be overcome by using an audio transformer to isolate the phones—Ed.).

No external coupling, other than the shorting wire on the plug, is needed to produce a signal in the average receiver.

Fig. 1 shows the general assembly of the main "works." This was made with the aid of a lathe. Note how the driving rod is prevented from turning, thereby eliminating backlash.

As shown the unit covers 3.45 to 3.85 Mc., and takes about 10 turns of the 4" dial, i.e. about 10' of dial for 400 Kc.! It is easy to log a station, and later to place the receiver on the same frequency for keeping a sked—even to practically the same beat note on CW!

A harmonic from a broadcast station can be used as a check point, and will give a maximum error of ± 20 cycles, as most BC stations are maintained within ± 5 cycles for greater part of the time.

The circuit in Fig. 2 is straight forward. Headphones are plugged into the jack and a local signal can be heard as a beat note.

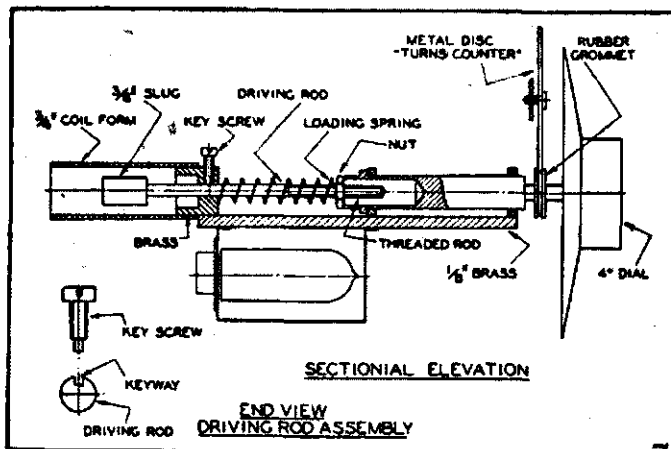


Fig. 1.—Section Drawing.

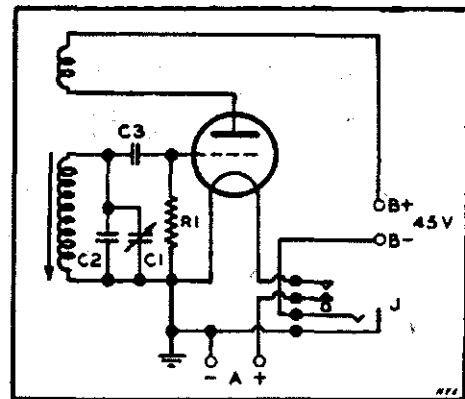


Fig. 2.—Circuit

- C1—Zero Set, 2 Plate Double-Spaced, Variable.
- C2—500 pF. Silvered Mica.
- C3—100 pF.
- R1—60,000 ohms.
- L—Variable Inductance to suit band required.
- J—Fil. Control Jack.

*C/o. the Vice Chancellor's House, University, Carlton, Victoria.

IMPROVED 144 Mc. RECEPTION

Owners of the SCR522 can make a substantial improvement in receiver performance by the use of the regular station communications receiver in the same manner that the "Q5-er" is used on the lower frequency bands.

The communications receiver is used as an additional i.f. amplifier and audio channel. It is loosely coupled to the last i.f. transformer of the 522 by twisting a wire once or twice around the lead that runs from the last i.f. transformer of the 522 to the 12C8 detector tube. The other end of the wire is connected to the antenna post of the communications receiver. The communications set is then tuned to about 12 Mc., the i.f. frequency of the 522.

Rough tuning is accomplished with the dials of the 522 in the usual manner. Then the band spread dial of the communications receiver is used for peak reception.

This system of reception offers all the convenience of low frequency operation: stable easy-to-read signals, band-spread tuning, S-meter, b.f.o., noise limiter action, and a better audio system. Most important, however, is the improvement in signal-to-noise ratio obtained because of the narrower pass-band of the system. Unstable or badly-drifting signals can be received as usual on the 522 alone by turning the audio gain of the 522 up, while reducing it on the low frequency set.—QST, Sept., 1948.

procedure and mark in 500 ohm point on your scale. Now put the two resistors in series and calibrate the 2,000 ohm point. This procedure is used with various combinations until ranges A and B are completely calibrated.

Range C, inductance, is not meant to be a precision range, but will come in very handy in winding or checking RF chokes, large coils, etc. To calibrate, merely use an RF choke of known value, say 2.5 mH., and add several in series. Calibrate the low end by using a "coil calculator nomograph" from you Radio Handbook or similar publication, to ascertain the rough inductance of a coil or two. Ranges D and E are calibrated in a similar manner to ranges A and B, using good quality "ceramicon" mica, and paper condensers.

Resistors and condensers of known value, which fail to show a normal reading on the bridge, may be safely tossed into the waste paper basket.

Incidentally, don't panic when you find that resistor and condenser values increase in opposite directions on your scale. This is normal.

Now go to it—drag out those dusty old variable condensers, and find out their real value!

THE UNITED NATIONS ON THE AIR

At 6 p.m. on the 17th May, 1948, a new Amateur Station went on the air, for the first time. Not very remarkable perhaps, but its call sign, K2UN, is remarkable.

From Lake Success, at the Headquarters of the United Nations, Geo. W. Bailey, President of the International Amateur Radio Union, called CQ and was answered by IIRM in Como, Italy. Then the word got round, and contacts were made with Paris, Wiesbaden, Cuba and Bermuda.

The station has two transmitters, each the full kilowatt of power allowed. One operates on 40 and 80 using doublet antennae, the other on the high end of the American 20 and 10 metre bands, using a rotary beam. The receiver is an H.R.O. No. 7, the transmitters were made by Temco, and a panadapter is used. Transmitters are remote controlled from a broadcasting type table, which has from left to right: transmitter controls, panadapter, the receiver in front of the operator, the beam direction indicator, speaker and VFO.

Why the station has a K prefix rather than a W, is explained by the multiplicity of Ws not leaving them the letters they wanted, so K2UN was allocated, "Come to the United Nations."

It is planned that the station be on the air from 4 p.m. to midnight, American E.S.T.

VK3KG reports what is probably the first VK contact with K2UN, when good reports were exchanged on the 20 metre band. It is hoped by the United Nations Secretariat that the station will "preserve and foster the spirit of fellowship among Radio Amateurs, to promote international interest, and build prestige, for the United Nations."

IN SEARCH OF A KEYED V.F.O.

BY E. M. WADDLE*, VK4GZ

In various radio publications in the past there has been described Variable Frequency Oscillators which the authors claim could be keyed without any chirp or click being heard when the V.F.O. was coupled to the transmitter.

As the need for a really good V.F.O. on the present over-crowded Ham bands is essential, it was decided to duplicate one of the articles, and thus obtain the claimed for results. Or so we fondly believed.

In the course of the quest for a chirp free V.F.O. six types of oscillators were tried, ranging from the simple triode to push-pull low frequency jobs. All of these had good stability—until they were keyed—then chirps and keyclicks were evident in the monitor. It should be mentioned that in all cases except the very low frequency oscillators, the fundamental was 3.5 Mc. followed by an untuned isolator stage, and tuned amplifier on the same frequency. Doubling was accomplished in the main transmitter.

If one of the stages of the transmitter was keyed there was no trouble with any of the oscillator circuits. However as break-in was the ultimate aim here, a good stable V.F.O. that could be keyed just had to be found.

In the English "Wireless World" there appeared a cathode coupled oscillator using two 6V6 tubes. The advantage of this type of oscillator circuit over the others is the ease of adjustment. No taps are needed on the coil, thus eliminating the main source of instability when endeavouring to obtain a T9 note from a keyed E.C.O. oscillator. The position of the cathode tap having a vital bearing on the stability of the note of such oscillators.

This cathode coupled oscillator was constructed, and keyed in the cathode. Chirps were absent, but some key clicks could be heard. No doubt these could have been eliminated by the use of suitable filters at the key, but it was thought that better signals could be obtained from an oscillator requiring no keying filter.

Looking for further information upon this problem an adaptation of the English circuit was found in QST. This had the tuned circuit in the grid instead of the plate as in the other circuit.

With this circuit and using a 6SN7, keying was tried between the grid of the cathode follower section of the tube, and ground. This time success seemed nearer, as only slight traces of chirp and no clicks were present. The stability was excellent.

It was now decided to eliminate the chirp by using a very low voltage on the oscillator and keying the isolator. This proved to be only partially successful. Next a completely new V.F.O. was constructed embodying the lessons learned in the previous experimental models.

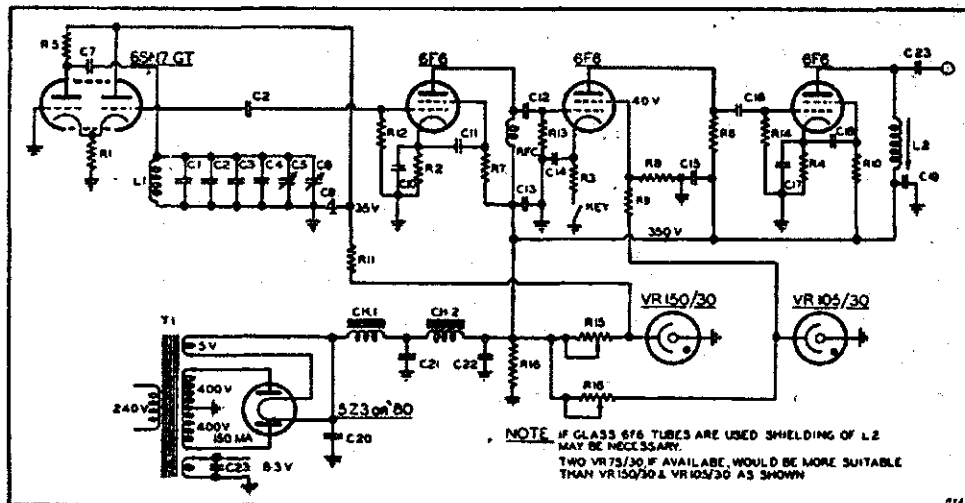
The 6SN7 cathode coupled oscillator was used on 3.5 Mc. with 35 volts from a regulated supply. It was housed in a 7" square metal box of $\frac{1}{8}$ " steel mounted on 1" rubber cushions and connected to a 7" x 18" x 4" chassis at one point only by a heavy copper strip.

In order to keep stray R.F. from appearing in the receiver when the oscillator is running, all leads into the oscillator compartment are by-passed for R.F. by means of chokes and condensers. This isolation is essential when the V.F.O. is placed alongside the receiver. Too great an emphasis cannot be placed upon the importance of completely shielding the oscillator.

Stability of the oscillator was further enhanced by using ceramicons across the coil. Bandsetting being accomplished by the 100 pF., tuning by the three plate midget across the coil. This condenser is mounted on the back wall of the box and connected to the dial by an insulated shaft and coupler.

It will be noticed that the plate load of the second 6F6 is a 3,000 ohm resistor. It was used to prevent the interaction which occurred between the R.F. chokes in the plate circuits of the 6F6 tubes; changing to the resistor cured this trouble.

All the tubes and parts used were those on hand. This accounts for the



- C1—250 pF.
- C2—40 pF.
- C3—55 pF.
- C4—30 pF.
- C5—100 pF. variable.
- C6—15 pF. variable.
- C7—0.001 uF. mica.
- C8, C12, C16, C23—100 pF. mica.
- C9, C18—0.002 uF. mica.
- C10, C14, C15, C17, C19—0.01 uF. mica.
- C11, C13, C23—0.006 uF. mica.
- C20, C21—16 uF. electrolytic.
- C22—40 uF. electrolytic, 400 v.
- R1—2,000 ohms.

- R2, R4—450 ohms.
- R3—400 ohms.
- R5, R7, R9—0.05 megohm.
- R6—3,000 ohms.
- R8—35,000 ohms.
- R10, R11, R12, R13, R14—0.1 megohm.
- R15, R17—10,000 ohms pot., W.W.
- R16—25,000 ohms V.D.
- L1—17 turns 18 gauge $1\frac{1}{2}$ " long, 1" diam.
- L2—28 turns 24 gauge, $1\frac{1}{2}$ " diam., tuned with 1" brass slug 3" long.
- T1—400/400 at 150 Ma. Power Transformer, 6.3 v. at 3 amp., 5 v. at 3 amp.
- CH1, CH2—100 Ma. Filter Chokes.

Following the oscillator were two isolators and then the final amplifier. All of these stages used 6F6 tubes. These were used for two reasons. Firstly they were to hand, and secondly, they have better isolation between the grid and plate than the 6V6. These stages were operated at Class A. The final stage was slug tuned to 3.5 Mc. Keying was accomplished by keying the cathode of the second 6F6.

By means of a resistor network across the output of a 150 volts of regulated supply, the screen voltage was kept down to 40 volts. This produced chirpless and click free keying.

resistance used in series with the VR105 to drop the voltage to 35 for the oscillator, which is definitely not done in the best of VR circles.

It is very important to see that the V.F.O. power supply has a two section filter, and that the capacity used across the chokes is high. This applies to a lesser degree to the supply of the transmitter.

The final slug tuned stage is broad enough to cover the band without adjustment, once it is set for the middle of the band. It is capacity coupled to the grid of a 6L6 in the transmitter by a 100 pF. condenser and a length of co-

* Gill Street, Charters Towers, Qld.

ax. Excitation is sufficient with this stage to operate the 6L6 as a doubler to drive 807 to 14 Mc. direct, or as a quadrupler to the same frequency.

After tests were run the oscillator drift was further reduced by reducing the oscillator plate voltage to 22 volts and the heater voltage to 3.3 volts.

A series of tests with about 40 stations, both VK and DX, since the completion of the unit, showed the reports were invariably T9 or T9X. In fact only four stations reported the signal as being T8, indicating that providing you take the trouble a V.F.O. can be keyed without sounding like a bad disposals job.

CONTEST NEWS.

VK2 Wins Remembrance Day

The average of the six highest logs for the Perpetual Trophy are as follows:

VK2	219.66	Points
VK6	199.35	"
VK3	183.66	"
VK5	142.66	"
VK7	120.66	"
VK4	110.66	"

Congratulations to the VK2 boys for their fine effort.

The first Remembrance Day was very successful and everyone participating enjoyed it to the full. It is a pity that more stations did not take part, but probably insufficient publicity contributed to this. Eighty-eight scoring logs were received and several check logs. A large receiving log was to hand from Eric Trebilcock and if more listeners were as enthusiastic as he, a listeners' section would be possible.

Many letters were received from participants congratulating the W.I.A. on the spirit behind the Contest. These letters were appreciated and it is hoped that in this, and future, years this Contest will perpetuate the memory of the "Silent Keys" in Amateur Radio throughout Australia.

INDIVIDUAL SCORES

New South Wales

2ZH	245	Pts.	2VA	104	Pts.
2PA	244	"	2YC	89	"
2VN	212	"	2ZX	81	"
2AHA	211	"	2ARH	78	"
2EO	203	"	2HZ	61	"
2RA	203	"	2WD	55	"
2GW	202	"	2OW	52	"
2QL	184	"	2MT	41	"
2CI	174	"	2AKO	35	"
2NY	170	"	2PN	33	"
2OE	153	"	2OV	20	"
2JX	152	"	2HC	16	"
2DO	145	"			

Victoria

3XK	228	Pts.	3BB	85	Pts.
3MC	191	"	3ZC	84	"
3UM	182	"	3VQ	82	"
3YS	181	"	3ADG	73	"
3IG	162	"	3WH	69	"
3AWW	158	"	3AGF	62	"
3BD	155	"	3DS	49	"
3JZ	154	"	3KV	48	"
3XB	153	"	3TX	46	"
3JI	129	"	3ZR	45	"
3DG	118	"	3RJ	42	"
3JE	100	"	3GZ	40	"
3QK	99	"	3YF	33	"
3FF	88	"	3KB	24	"

Queensland

4XJ	169	Pts.	4SN	89	Pts.
4CG	122	"	4HZ	87	"
4NO	102	"	4TB	72	"
4JF	95	"	4AW	36	"

South Australia

5OU	176	Pts.	5HN	83	Pts.
5FX	171	"	5RX	61	"
5KE	152	"	5RK	58	"
5JE	138	"	5JT	56	"
5IW	111	"	5BP	14	"
5RR	108	"			

Western Australia

6RU	284	Pts.	6GA	110	Pts.
6KW	253	"	6WT	98	"
6DX	188	"	6CF	72	"
6RF	182	"	6FA	55	"
6RW	134	"	6DJ	52	"

Tasmania

7AB	205	Pts.	7AL	101	"
7DS	156	"	7SJ	90	"
7OM	142	"	7BJ	30	"

PRIZES IN DX CONTEST

For the 3.5 Mc. Section, an Extension Speaker with adaptor has been allotted. This prize was, by error, allocated to the Receiving Section in last month's list of prizes.

S.O.S. SPECIALS

Collins V.F.O. Units,
10 to 80 metres
calibrated... £26 10 0

IN34 Sylvania Ger-
manium Crystal
Diodes ... 1 5 0

National 50 P.F. Isola-
ntite Variable Con-
densers ... 5 0

6AK5 Valves ... 1 10 0

S.O.S. Universal
Stroboscopes ... 9

I.R.C. Resistoguide... 1 0

Ohmite Ohms Law
Calculators ... 2 6

465 Kc. I.F. Crystals 1 19 6

1600 I.F. Crystals ... 2 5 6

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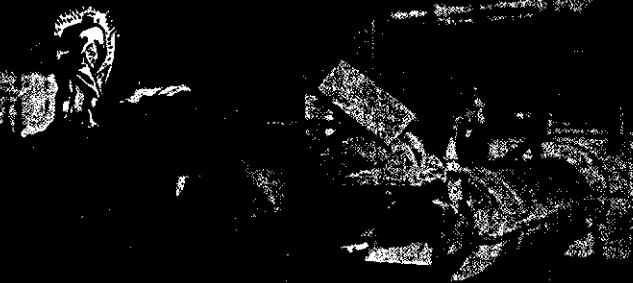
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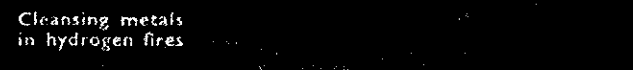
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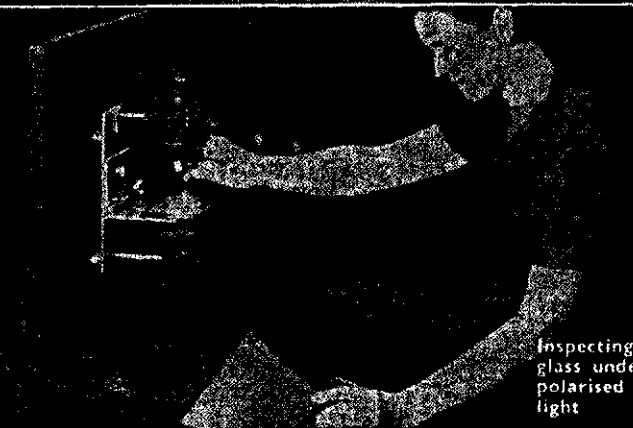
RAW MATERIALS



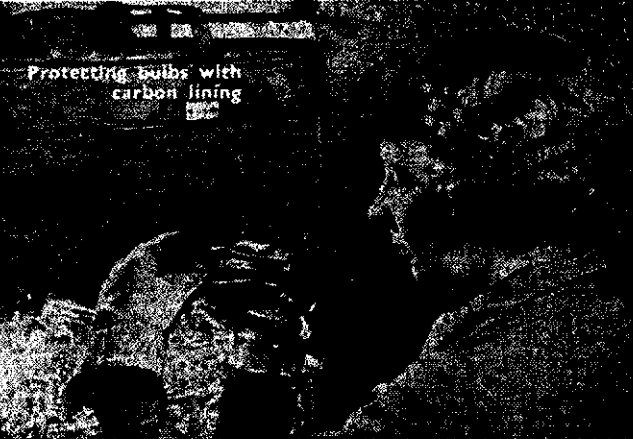
Chemical analysis of materials



Cleansing metals in hydrogen fires



Inspecting glass under polarised light



Protecting bulbs with carbon lining

FEDERAL, QSL and DIVISIONAL NOTES



Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Wai Nye (VK2XU), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor: H. F. Treharne, VK2BM, 5 Walmea St., Burwood.

Zona Correspondents.—North Coast and Tablelands:
P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coastfields and Lakes: H. Hawkins, VK2YL, 27 Cornfort Ave., Cessnock; Western: G. J. Russell, VK2QA, 116 Began St., Nyngan; **South Coast and Tablelands:** R. H. Rayner, VK2DO, 42 Pettit St., Yass; **Southern:** E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury. **Western Suburbs:** A. C. Pearce, VK2AHB, 48 Harrabrook Ave., Five Docks. **Eastern Suburbs:** H. Kerr, VK2AX, No. 4 Flat, 144 Hewlett St., Bronte. **North Sydney:** L. D. Cuffe, VK2AM, 779 Military Rd., Mosman. **St. George:** J. A. Ackerman, VK2ALG, 32 Park Rd., Carlton. **South Sydney:** V. H. Wilson, VK2VW, Cr. Wilson St. and Marine Pde., Maroubra.

VICTORIA

Secretary.—C. C. Quin, VK3WQ.

Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.I.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zona Correspondents.—North Western: B. R. Mann, VK3BA, Quambatook; **Western:** C. C. Waring, VK3YW, 12 Skene St., Stawell; **South Western:** B. Seccrine, VK3BI, 17a Raglan Street North, Ballarat; **North Eastern:** J. A. Miller, VK3ABG, "Erinvie," Avenel. **Far North-Western Zone:** Harry Dobbyn, VK3WF, 42 Walnut Ave., Mildura; **Eastern Zone:** J. D. Chilver, VK3DI, 20 Smith St., Laongatha.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 638J, Brisbane.

Meeting Night.—Last Friday in each month at State Service Building, Elizabeth St., City.

Divisional Sub-Editor: F. H. Shannon, VK4SN, Manden, via Rosewood.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P. Adelaide.

Meeting Night.—Second Tuesday of each month, 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Night.—Second Monday in each month, the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—VK6WT, Mr. D. Couch, 11 Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Mt. town, Telephone: W 1328.

Meeting Night.—First Wednesday of each month, the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, Knight St., Launceston.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7106 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7900 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

AUSTRALIAN AMATEUR CALL SIGNS

New Issues:—

- VK2ABA—F. A. Barry, 274 Victoria St., Darlinghurst.
- 2ACH—H. O. Hickin, 3 Mount St., Hunter's Hill.
- 2AGE—I. N. MacLachlan, 75 Weston St., Harris Park.
- 2AGE—A. B. Girling, Cobbara St., Dunedoo.
- 2AGP—G. E. Lewis, No. 7 Flat, 14 Kangaroo St., Manly.
- 2AGT—J. K. Langley, 37 Acton St., Hurlstone Park.
- 2AII—R. L. Finney, 78 Eastern Road, Tarramurra.
- 2AIC—K. Connor, 104 The Boulevarde, Lakemba.
- 2AID—R. Smith, Soywell Rd., Macquarie Fields.
- 2AIM—H. V. Booth, Kembra St., Wollongong.
- 2AIME—L. A. McPherson, 89 Addison Ave., Roseville.
- 2AIN—N. T. Buchanan, 41 Sir Thomas Mitchell Rd., Bondi.
- 2AIO—Rev. J. B. Doran, The Presbytery, Lampton.
- 2APA—C. Allen, 2 Univ. Sig. Regt., Moore Park Rd., Paddington.
- 2ARS—J. J. O'Callaghan, 25 Ilka St., Leichhardt.
- 2ASB—S. E. Brown, The Vaie, Pitt St., Manly Vale, Balgowlah.
- 2ASG—R. O. Chapman, 67 Arabella St., Longueville (Mobile).
- 2AWL—W. S. Arnold, 4 Terry Rd., Eastwood.
- 2AYI—H. W. Blue, 55 Leura Rd., Auburn.
- VK3AAB—A. B. Monk, Railway Cafe, Diamond Creek.
- 3ACK—J. A. Woodward, Main St., Mooroopna.
- 3AHL—L. W. Harding, 25 Guthrie St., West Brunswick.
- 3AKR—K. L. O'Rourke, "Killigrew," Westmere.
- 3AMP—G. M. Fowles, Halfway House, Ferntree Gully Rd., Wheeler's Hill.
- 3ARX—C. Serle, 2 The Avenue, Windsor.
- 3ASM—S. F. Macauley, Lower Bogong, via Woodonga.
- 3AWH—W. Hampson, 147 Bayne St., Bendigo.
- 3AWR—W. E. Knapp, 13 Chatham Rd., Canterbury.
- 3AZH—N. B. O'Brien, Flat 3, 27 Dolphin St., Randwick.
- 3NZ—R. H. Hall, 26 High St., St. Kilda.

- 3OD—O. W. Welsh, 14 McPherson St., North Horsham.
- 3OW—C. B. Robinson, c/o SLK, Lubeck.
- VK4LF—L. B. Simpson, Beatty Rd., Coopers Plains, Brisbane.
- 4LU—D. Y. Beynolds, Flying Boat Base, Kumba.
- VK5DL—D. A. Crowley, 24 Parade, Norwood.
- 5LO—D. A. Millar, 195 Robin Rd., Semaphore.
- 5PQ—P. Muscat, South St., Margill.
- 5QP—K. M. Theel, 3 Caulfield Ave., Clarendon Park.
- 5RN—D. S. Robertson, Maroonika, Mt. Liffy.
- VK6LD—C. E. Bishop, 14 Weld St., Claremont.
- VK9WL—J. Widdup, c/o O.T.O., Kavieng, N. Ireland, N.G.

- Alterations:—
- VK2ACG—A. Morris Bees, Kingston Guest House, Kingston, A.C.T.
 - 2ADC—G. S. McLeod, "Modwina," Stony Creek Rd., Beverley Hills.
 - 2ADH—F. C. Deaman, "Franklin," Fullers Guildford.
 - 2AGZ—R. C. Yates, 28 Prince Albert St., Manly.
 - 2AKB—K. B. Brown, 73 Western Cres., Glassville.
 - 2ALR—B. Hannaford, Flat Rd., Bolwana, W. Maitland.
 - 2ASF—S. C. Fletcher, Royal Hotel, Kempsey.
 - 2AM—L. D. Cuffe, 30 Bradley's Head, Mosman.
 - 2EA—L. Martin, 26 Breimbar St., Grafton.
 - 2FM—F. A. Murray, c/o M. T. Pickard, 2 Wallace Pde., Lindfield.
 - 2FR—J. F. Howarth, "Milton," Sydney B. Holbrook.
 - 2QM—S. C. Broadbent, 22 Bellevue St., Manly.
 - 2RN—T. H. Russell, Radio 2BS, Bathurst.
 - 2TH—T. R. Heilmann, 58 Dunroon St., Hurlstone Park.
 - 2UN—R. J. Scott, 49 Brae St., Inverell.
 - 2VU—G. D. Partridge, 23 Hunter St., Singleton.
 - 2WQ—R. T. Wilkins, Thomas St., South Grafton.
 - 2WW—J. M. Woodward, "Aston," 13 Jones St., Blakehurst.
 - 2YA—R. C. Black, 23 George St., Liverpool.
 - 2ZO—W. W. Jenvey, 9 Forsyth St., Willoughby.
 - VK3ALF—A. T. G. Hansen, 4 Henry St., Bawthorpe.
 - 3ARB—R. A. Bouchier, 61 Primrose St., Epsom.

FEDERAL

OX C.C. LISTING

PHONE:
NIL
OW:

VK3CN (8)	125
VK3BZ (14)	114
VK3EK (10)	112
VK3VW (12)	111
VK3EO (7)	103
VK3QL (18)	101

OPEN:

VK3BZ (5)	137
VK3EK (1)	136
VK3DI (2)	125
VK3HO (4)	121
VK3MO (6)	117
VK3RU (11)	112
VK4HR (9)	111
VK3JE (12)	110
VK3YL (17)	106
VK4EL (16)	104
VK3AOX (8)	100
VK2AHA (15)	100

Figures in parenthesis indicate the membership number to the DX C.C.

Cards from the following stations have been received and are being checked:—VK6EW, VK4DO, VK4DA and VK2ADT.

It has been decided to list in future the number of Zones worked by DX Century Club members. Would the members therefore kindly drop a note to the Federal Secretary mentioning their Zones worked total for inclusion in next month's notes.

REMEMBRANCE DAY CONTEST

Elsewhere in this issue appears the results of the first R.D. Contest. Judging by the number of participants and the logs received, it looks like becoming THE Contest of the year for Australia. It is indeed gratifying to F.E. and the Contest Committee to see so many entries, but there are still a number who did not participate. Please do not hesitate to send in your log as it aids in the checking. Congratulations to New South Wales—the winners! We trust that the interest shown in this Contest augurs well for the National Field Day Contest to be held early next year. Watch for the details in December "A.B."

- 8ARL—O. L. Brown, 33 Ward St., Ashburton.
 8ARV—R. G. Henderson, 261 Bourverie St.,
 Carlton.
 8BG—R. B. Jones, "Leesebray," 25 Panoramic
 Rd., North Balwyn.
 8BH—C. R. Whitelaw, Box 92, P.O., Dandenong.
 8HI—L. G. Reynolds, 21 Nirvana Ave., East
 Malvern.
 2HU—C. G. Burke, 97 Riversdale Rd., Cam-
 berwell.
 3SD—C. D. Wordsworth, Calulu, via Hillside.
 3ZH—C. H. Hyatt, 30 View St., Alphington.
 3ZF—G. G. Coventry, Warwick Rd., Greens-
 borough.
 VK4HF—H. A. Fitzalan, Highland St., Wavell
 Heights, Brisbane.
 4SD—A. H. Sharland, Boondall, Brisbane.
 4XE—F. H. Doherty, 3 Oxford St., Hyde Park,
 Townsville.
 VK5AZ—H. R. McGrath, c/o. Dept. Civil Aviation,
 Daly Waters, N.T.
 5BW—A. W. H. Wright, c/o. A. E. Wilson,
 Miltalie, via Cowell.
 5EZ—L. E. Hauber, 220 Goodwood Rd., Colonel
 Light Gardens.
 5MA—A. J. Martins, c/o. Electricity Trust of
 S.A., Berri.
 5NZ—A. M. Tonkin, 23 Third St., Salisbury.
 5RF—P. R. Parasceis, 1188 Anzac Highway,
 Glandore.
 5XX—R. de E. Minchin, 14 McGillp Ave., East
 Glenelg.
 VK6RE—E. F. Robins, 4 Egina St., Mt. Hawthorn.
 6SR—Radio Society of W.A. Inc., 8 View St.,
 Subiaco.
 VK7GC—C. D. P. Clarke, c/o. Station 7HO, Hobart.
 7MY—A. H. Morrisby, 48 Central Ave., Moonah.
 VK9DF—B. P. O'Connor, Dept. Civil Aviation,
 Rabaul, N.G.
 9NR—N. G. Roberts, c/o. Dept. Civil Aviation
 Norfolk Island.

Cancellations:—

- VK2ABE—A. E. Misdale, Barrenjoey Rd., Newport
 Beach.
 2AJO—R. A. Joscelyne, 71 Cheltenham Rd.,
 Cheltenham.
 VK3ACB—O. F. Curboon, 26 Jersey St., Balwyn.
 3OW—S. L. Hammock, 67 Delaware St., Reser-
 voir.
 VK4PB—J. P. Broome, 111 Days Rd., Grange,
 Brisbane.
 4SA—A. S. Smith, 35 Whynot St., West End,
 Brisbane.
 VK7AH—F. W. Medhurst (deceased), 9 Beach Rd.,
 Lower Sandy Bay, Hobart.
 VK9JO—T. S. Hefner, Aust. Petroleum Co., Port
 Moresby, Papua.

FEDERAL QSL BUREAU

RAY JONES (VK3RJ), MANAGER

The QSL address for Morocco is Service QSL
 A.A.E.M., Postbox 50, Casablanca, Morocco.

Alfredo Quintana, QSL Manager for Chile, advises
 that for better service all cards should be addressed
 to P.O. Box 761, Santiago, Chile. Alfredo also
 desires to exchange stamps with any Australian
 philatelist.

Recently a paragraph in these notes gave a new
 address for the Italian QSL Bureau. The General
 Secretary of the A.R.I. has now written stating
 that the new address given is not authentic and
 emanated from an unauthorised Radio Club. The
 QSL address for Italy therefore remains as A.R.I.,
 via San Paolo 10, Milan, Italy.

W1JL ex-CN8EG Joe Kazokas, 34-15 94th St.,
 APT, B28, Jackson Heights, N.Y., U.S.A., solicits
 all cards regarding contacts with CN8EG be sent
 to the above QTH. Joe was at the U.S. Naval Air
 Station, Port Lyantey, but is now back at the
 C.R.A. Station WSY situate on La Guardia Field,
 New York.

Mail addressed to KA1FT, care Institute of Techno-
 logic, Manila, PI, which was the QTH given by
 KA1FT, has been returned unclaimed and unknown.

The Radio Club of Chile has instituted a Certi-
 ficate to be awarded to any foreign Amateur who
 has worked at least one station in each of the seven
 radio districts of Chile. CW or phone contacts
 made after 19th November, 1945, will be accepted.
 The seven cards should be sent to Radio Club
 Chile, Box 761, Santiago. After checking they will
 be returned with the Certificate.

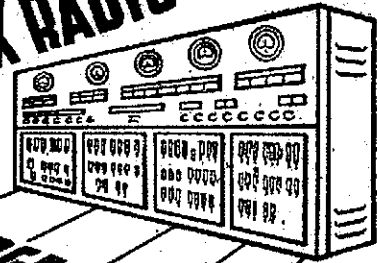
Notice has been received of the re-organised
 National Amateur Society in Hungary, styled the
 M.H.R.E., which in English means Hungarian Short-
 wave Amateur League, with the address as Box
 185, Budapest 4, Hungary. The QSL Bureau is
 situate at the same address.

Notes suitable for inclusion in this column are
 solicited and should be sent to the Federal QSL
 Manager.

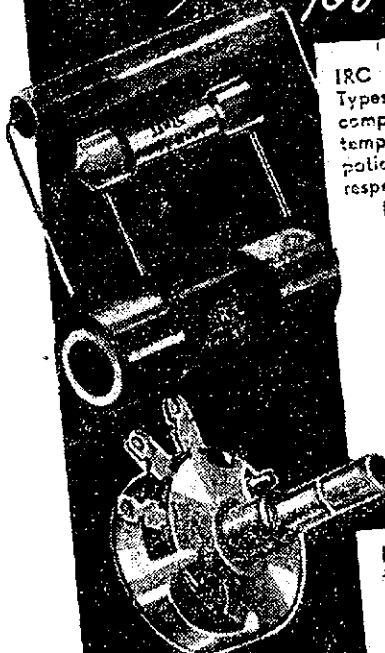
From Reg Jepson (VK3J1) comes the information
 that Frank Soltis, ex-HL1BA and J2AAY, is now

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back in U.S.A. with QTH as W2QMD, 14 Van Cleve Ave., Clifton, N.J., U.S.A. Frank had the misfortune prior to leaving Japan to have all his DX cards stolen by one of the local thieves. These cards are valued by Frank as pleasant mementoes of contacts made from HLIBA and J2AAY, and Frank requests that any VK who worked him at either of the above calls please send a duplicate card either direct or via A.B.R.L.

VK2NF has received through the mail from Colombia, South America, a QSL from HK3IR, Dr. William Elasmur, for a contact on 4 Mc. As he has never used 4 Mc. and has never worked a HK guess that HK3IR either misheard the call or was the victim of a pirate who kindly supplied him with his call and address. If the caller was genuine he can collect his card from VK2NF. Any pirate who should apply will receive a suitable welcome.

NEW SOUTH WALES

Mr. N. H. Hicks 2ANA gave members a very instructive lecture on "Industrial Electronic Control" at Science House under the chairmanship of the President. Two fine films, which were an eye opener to most of us, were used by Mr. Hicks to illustrate his lecture. These gave convincing proof of the wide range and ramifications of electronics in industry and showed what a lusty youth has grown up from the little baby that the early radio experimenters fostered a few years ago. Such lectures as these broaden the outlook of members and are very welcome.

EASTERN ZONE

Activities in the Eastern Suburbs limited this month. A few stations heard on CW in the Contest. Guess the boys are waiting for phone section. 3CE active on 40 phone after an absence of two years on that band. All is keeping his fingers crossed and hoping for the best re B.C.I. 2DV rebuilding his mod. and P.A., after a spell off the air, due to study and exams. Alex also has a new receiver. 2ALW active on 40 and 20 phone, using QRP rig with indoor antenna. Laurie manages to work a little DX. 2AFZ heard on rare occasions on 20 phone. Eric is content to just listen. 2NO in addition to his VHF gear has three separate rigs, on the popular communications bands, each using 813 in final. 2CF rebuilt during the winter, now putting out a nice sig. 2FG lives within 20 yards of the surf, when the winds are high John loses his beam and the rig gets salted up, however he is still able to work plenty of DX. 2AHQ changed his QTH and has rebuilt the rig making it smaller. Would like to know what has happened to quite a lot of the chaps in this zone, such as 2TN, 2JO, 2AHJ. Quite a number of fellows seem to have given it away. I would be pleased to hear from any of the chaps in this zone regarding their doings, keep a look out for 2AX on 7 Mc.

WESTERN SUBURBS ACTIVITIES

While the writer has been busy at his work and unable to fully report on local doings, a number of good friends have come to the rescue. Any contributions of news would be greatly appreciated and may be passed over the land-line to BQ309, Ext. 327 any week night after 8 p.m.

You can't beat the old-timers! Alec Robinson 2GR is back in circulation once again after several months in Yaralla Military Hospital. No late nights for Alec but he still works his share of Gs on 20. 2WB was heard going to town on the South Americans. Speaking of South Americans, 2JP has a keen interest in the lady Hams and is always on the lookout for Sara in Antofagasta, Chile, not mention Gert, the Canadian girl with the come-hither laugh. You young devil Jack! That Collins job must be sparking well. 2AGU, the DX king of Abbotsford, has not been heard lately. Harry must be cooking up something special!

The Burwood Experimental Radio Club, moves into new premises at Greenwood Hall, Liverpool Rd., Enfield, and will have 6 metre and other gear available. In addition there is a well equipped workshop. A big supper is planned for the opening night, Thursday, 14th October. Gladesville Radio Club will conduct a Field Day second week in November. The hunt will be on 40 for a hidden transmitter. The change is from VHF to prove that they haven't got lost up in the Sporadic E.

2AER comes on 40 phone to chew the rag and can he chew it! Just as well rationing is a thing of the past, else Max wouldn't be able to buy new henkies. No offence Max! 2AGW testing mikes with a '03 received the following reply in rich Stanley O'loway accents: "Better stick to old one bud! Sounds like talking into two pint joogs!" All ended well. 2OQ still works the DX on 20. 2DW not heard often. 2NM still on 144 with a 40 ft. high dipole, gets out well. Harry also goes mobile with a 522. 2TD works some DX on 7 Mc. OW

when he can tear himself away from that old cement mixer. No, not the rig, its business. Don't forget to pass the word! Thanks chaps.

SYDNEY SOUTH ZONE

It takes a super sleuth to find out what the chaps in this area are doing. Most seem to be inactive at present but a few of the regulars can be heard nightly. The VHF Contest opened with a bang and 2ABC, 2WJ, and 2VW are active on 50 Mc. and 144 Mc. piling up the points. John, 2WJ, is leading at the moment, but there is a long way to go yet. 2ABB is heard on 20 and 40, and 2AB is busy rebuilding the rig. 2AX is on all bands, but Leo is badly handicapped by lack of space for an antenna. Now chaps if you want these notes to continue what about letting me know what you are doing so that I can include some really interesting news next month.

NORTH SHORE ZONE

Spring, and the usual upsurge of activity is with us again. The spate of rebuilding that has been going on during the winter is showing results in many a shack, and well-known signals that have been missing for a few months are back on the air. All in all, it looks like a good season ahead. U.N.O. permitting. 2HL is mad with the activity on 144 and 288 Mc. two bands which are claiming many of the old-timers these days. Another is 2ZAGO is the proud possessor of a pansy 8-element 20 beam, which is paying handsome dividends. 2HG doesn't get much time at the game nowadays, but chases the odd bit of DX on 20 with a 40 watt rig. 2SV another with a 3-element beam which points madly in all directions at once, according to reports. 2ARR stirring up a mild cyclone—what's happened to the garbage man, Graham? The Manly stalwart. 2DA, still going strong. Has a new AMR100 receiver now and was very active in the Contest, with the receiver doing an FB job. 2BA is in the throes of bunging together a new receiver with double conversation and hot and cold water laid on. A new one down that way is 2AMG, heard on quite frequently. 2JX had very bad luck in the Contest. One of the tubes in his new push-pull final gave up the ghost right at the start of the Contest, and in the flurry of changing over to a single-ended job with the other tube his neutralising condenser flashed over and scuppered the remaining one. A dim view with the consistency of a pea-soup fog has settled down on Avalon. Fooey to Contests!! 2ES and his rotary dipole are still doing good business at the old stand. He provides good DX for 2BQ occasionally. 2BQ incidentally is undecided whether to erect a beam, or chop down his existing mast and string a couple of wires in the attic. Shore is a mess, ain't it, matey! 2AGZ, long one of the Wollongong boys, is now

settled in Mosman, and punching out a nice signal on 20 phone. 2AM and 2PV still rebuilding. Have not heard 2ADV for a while. When is that beam going up, Mac? 2JG is in process of rebuilding the rig into a beaut rack and panel layout. 2ZZ heard working 11MT, his new folded dipole lending quite a hand. 2AQQ is practically the mainstay of 40 phone these days—am thinking of signing him up as a marker for the band!

ST. GEORGE

2FQ not very active, uses 6V6-59-807, zepp antenna and 8 tube super, mainly on CW on 40. 2GM works all bands and is using 802 ECO, 6L6 buffers, pair 807s in final, 6L6s in AB1, home-made 10 tube super and zepp antenna. 2AVT will be on air shortly using 6V6-807-807 running 50 watts ARS receiver and antenna is zepp. While rebuilding 2AGA is using a Type 3 Mk. 2 on 80 and 40, zepp is the antenna and a home-built super. 2US is mainly heard working 20 phone and gets out well. 2RF active on 40 CW and phone, also on VHF. 2AML working on 20 phone, 6A6-807-809, with 50 watts input, zepp antenna and 15 tube super. 2ALZ hopes to be active shortly getting some gear together, inactive since 1939. 2IY is using command transmitter on 20 CW, receiver is B38 and uses vertical antenna. 2RE trying out 3 stage pre-amp., 20 phone. 2YH heard regularly on 40 phone, trying to track down hum. 2JJ using 3 stage VFO, 4 stage band-switching exciter using 4 807s for 80, 40, 20, 11, 10 with 813 in final, 811s as modulators. No. 4 receiver and zepp antenna. A 6A6-807-809 is 2ASR's line-up, 809s in class AB serve as modulators, receiver is a Hallicrafter Sky-rider, antenna is S.W.M.I. co-ax fed with 72 ohm and works well.

DX ACTIVITY

Thanks to 2YL and 2TG for their interesting letters on their DX activities. Remember chaps, the more information you send in, the more interesting these notes will be. From 2TB we have the following suggestions. I would like you to let me have your comments and any further suggestions on them:—

1. How about forming an "S9" W.A.O. Club (either phone or CW)? Its members could contribute for a special set of cards as has been done by the Pearl Harbour, Corpus Christi, KZ5, KP4 and Frankford Clubs.
2. A 50/50 Club, 50 CW, 50 Phone. The road to DX C.C. phone is tedious for VKs. I know how hard it is as I have 141 countries, 38 zones and 84 on phone. The latter appears to be my maximum as I can't speak various languages to copy some of the harder Europeans.
3. How about a Junior DX Club for those who hit 50 countries? Many Hams take Ham Radio

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as a hobby and are not slavishly chained to the DX urge. 50 countries is a fair effort for recognition.

Well, there's something for you chaps to think over and don't forget to let me have your ideas.

2TG reports 28 Mc. as being good at Orange. G, F, OH, GW, GI, EL, UAs for Europe and Asia. South America being represented by HC1FG, HC1JW, HC1KV, HC2AS, OA4AN, VP4TO, VP3TR, HK3CU, and YV5AC. Central America T120A, T12AFC, HR1MB, VP9P, and CO2LW. Africa VQ2DH, VQ8AE, VQ4HRP, VQ6RHP, ZD4AH, ZB7JI and ZE1JH.

ZD4AH was VK2ALO and would like any spare copies of "Amateur Radio" if any of the boys have any. QTH: Sekondi, Gold Coast, West Africa.

VK2YL sends in the following: 158 countries and 40 zones worked post-war (which is a grand effort); 14 Mc. OW 138, 14 Mc. Phone 41, 28 Mc. OW 68 and Phone 82. 2DI brings his grand total to 172, having grabbed CSEA (Formosa) and MP4BAB (Oman) who is ex-VS9QT. 2QL also landed CSEA on OW after a lot of trouble with power leaks, etc. 2VN and 2RA have been on very little but can be heard there when the good DX is coming through. See the honour for their scores. No news of 2HZ this month, he is evidently having a spell. I would like to hear from the following VKs on their DX activities. 2GW, 2TF, 2AHA, 2ZC, 2DG, etc. Your DX notes for the month of October will be compiled by 2DI as I am off for three weeks on the north coast of Sunny New South, fishing, etc.

A few scores are to hand for the Honour Roll, so here they are: Phone/OW—2DI 40 zones 172 countries, 2ACX 40-164, 2YL 40-168, 2EO 40-145*, 2HZ 40-140, 2QL 40-138*, 2TG 38-141, 2RA 38-128, 2VN 37-127, 2BA 37-109. Phone only—2DI 30-95, 2TG 84 countries.

Here are a few QTHs for those who need them:—PZ1FM: P.O. Box 118, Paramaribo, Dutch Guiana. OTSAB: J. A. Ferraz, Rua de Santa Maria 261, Funchal, Madeira Island.

IS1EH: G. Marras, Villae Regina Elena 21, Cagliari, Sardinia.

PJ0X: via W8NEK.

NORTH COAST AND TABLELANDS

2ZY active on 40 only, is on the job constructing a band-switched 12 tube super around the multi-band coil unit recently announced. 2RK away on holidays. 2FN back to school again after the vacation; rather "browned off" due to a move to a village with no AO! 2ARJ experimenting with 50 Mc. gear and has had excellent cross-band contacts. No luck with 2PA who is 80 miles away, 90 per cent of the distance is over the sea so a contact should be made soon. 2JK building for 6, hearing 2ARJ at 89 and the antennae on the mend after the gale. 2AEY been enjoying visits from 2AGU who is working on the new commercial at Taree. Harry will be in the district for some weeks yet. 2ZY mainly on 40 CW but has been grid modulating the 6V6. 2ASF with 6V6 CO, 807 cathode modulated with P.P. 6V6s, housing still a problem. Both 2ZS and 2AF spent a recent Sunday visiting 2PA, 2SH and 2DS; 2ZS receiving some acclaim as a pianist. 2AFP back on 40 but line hash restricts his contacts except with 89 signals. 2XO minimized his line noise by keeping the antenna away from the H.V. line and using a twisted pair—result he now hears signals he has not heard for years.

NEWCASTLE

Best news of the month is the arrival on of Frank Cross VK2FX, what a signal! Very excellent phone using speech clipping and he will soon have a beam on 10, the envy of all. 2AGD, 2AHA and 2ZC' been lying low but watch the splash when the Contest starts, I am sure the city of coal will be represented when the final figures go up. 2DG was bowling them over at one a minute in the OW section of the test, he can surely pound the brass. 2PQ has at last his 10 metre beam going and working DX everywhere, knows now how the others used to do it—it is up 42 ft. on the side of a hill. back, would like to see a paper describing methods enough said. 2AFS spent many hours chasing feed 2TE heard on 10 and 20 and gets what he calls, of overcoming same. 2CW says he will be on soon on 10, has been on 20 with two elements when not busy doing secretarial work for the local Radio Club. 2ANG what is the matter with 10, would like to hear you. Congrats to 2ANA and 2ADS on receiving their tickets, we will be listening for you chaps. 2FP only wants three countries for his century on 10 phone.

COALFIELDS AND LAKES

2ADX active on 28 Mc. as well as 144 Mc., using new beam on 10 and only Maitland station heard. From Kurri 2KZ and 2KF keep the place on the map. 2KZ very close to realising his ambition of W.A.S. on 10 metres. 2KF liable to be heard anywhere but usually on 10. Old-timer 2JZ

going to town on 10 phone, good signal and beam bringing results. 2TY doing nicely on 10 phone, worked 19 new countries in three weeks. 2ADT settling down to some DX after the rebuild, on 6, 10, 11, 20 and 40, cards away for DX C.O. and 95 countries on 10 phone. 2MK on 10 occasionally the rig has a wog in it. 2PZ not heard, QRL work. 2QC and 2RU active on 6 metres from Wyong and Gosford. 2YL working 20 and 10, but finds the conditions patchy.

SOUTH COAST AND TABLELANDS

We welcome 2VS back to the zone. Under way giving 6V6-807 and cathode modulation. No. 11 receiver and a good signal with antenna 15 ft. high. 8JK and 2PI and the latter's XYL passed through Yass, both chatted with Z.O. 2DO en route. 2PI is set up in his new home and the rig going with 90 watts to P.P. 807s, plate modulated. Some 144 Mc. work between 2PI and 2VS to be attempted in the near future. 2AMW also has 90 watts to 807s, nice T9 signal. 2WP improving every time heard, the big sticks are close to being erected and 2O will get some attention. Reported from the Wollongong Club that a new Ham will shortly join the ranks.

3RM at Duntroon very active, and a lot of the gang are becoming acquainted with the gear used at the military college. 2AIK helps with news and 2PI on the social side. 2OW shared in a contact with KJ6AB on 40 phone, 2OW using 5.5 watts input, so that was nice going. 2ALS gone QRP, sold all his QRO equipment, also disposed of AR7 so it looks as though the AR8 plus 6V6-6V6 will remain the source of entertainment for him. 2ARE Rye Park bogged with work and no time to relax with Ham Radio, 2DO threatens to visit him one day. 2JQ made additions to the receiver, 0V6 output and new dial improved things a lot, allows the operator to wander about the house whilst listening. 2DO managed a contact per country in DX test, got up to ten in end.

SOUTHERN

Our "old reliable" for the past 15 or 16 years has moved away, Roy 2TH is now radiating from Hurlstone Park. 2GE who went to Moree has been contacted on 40. 2AD has been active on the warmer nights on 40, has a 522 on 6. 2ANT plugs away on 40 CW while fellow worker 2AKY has as yet not used his call. The latter may have to go to Holbrook and will use 40 and 6 to stop himself from going mad. Pre-war Wagga identity 2YW has never been heard since the war, very QRL we believe. The underground has it that two P.M.G. chaps will soon have calls, while "Bill" is at last sitting for his ticket. 2FN made the long trip from Tumut just to see if 2BW was on frequency in the 6 metre band—he was! Cross country checks with 2FA and 2TC of Young with 2FN have shown the need for a beam for out of town work. 2TA was heard for a short while in Wagga at 57 later at 88 to 4 by 2BW using a straight dipole. 2BW would like skeds with any Hams in the Riverina on 6 metres either transmitting or receiving, checks could be made on either 40 or 80. 2IX is doing some good work on 40 and 80. 2BW writes the above notes and he soon hopes to have a VFO on the 6 so he can get towards 50 Mc. where all the beams are peaked. 2OJ's tower withstood a 50 m.p.h. gale so he is quite happy with it.

WESTERN

2FH getting good results from the four elements wide-spaced on 20. 2EF Warrimoo been working on 10, but still busy. We thought we had a new Ham in the zone at Penrith "VK3AL" he made a big noise on 40 phone, not only not in the zone but not licensed!! 2EZ at last heard something on the VHF's when on 144 Mc., maybe the receiver is now working properly? 2LZ busy in the VHF Contest, very popular with the Sydney stations as he is extra points for them. 2LY has 813 modulated with P.P. 880Bs, he is building gear for 2ACP who is now in VK4. 2NS and 2WH both had slight interests in the DX Contest. Z.O. 2QA QRL rifle shooting, believe they pop corks as well as rifles at shoots, maybe that is taking him away from Ham Radio.

VICTORIA

An old-timer in Charlie Whitefaw VK3BH has been appointed and sworn in as a Justice of the Peace for the Central Bailiwick. His beam and tower has not yet been erected on account of delay of supplies, illness of his wife and self, but has hopes for some results early in November.

EASTERN ZONE

The fourth Eastern Zone Convention will be held at Leongatha on 27th and 28th November and a cordial invitation is extended to all Hams to attend. Those contemplating making the trip are requested

to notify 3QZ or 3DI so that arrangements for accommodation can be made. The programme will be: meet in Leongatha on Saturday afternoon, dinner at 6.30 p.m., meeting at 7.30 p.m., Sunday morning inspect local Ham shacks, and it is requested that as many as possible bring portable 50 Mc. gear with them as the rest of the day will be spent hunting for a hidden 50 Mc. transmitter.

For further information it is suggested that members and visitors listen, or better still, join in the Zone Hook-up each Sunday night at 2000 hours on 8650 Kc. A cordial invitation is extended to all Hams wherever they be to attend the Convention we can assure all, a very enjoyable week-end.

The stork has again visited this zone and deposited a junior op. (a son) at the home of 8AHK. No time for DX now Oase! 8AEP has a 50 Mc. receiver working while 8TH has purchased a converter for that band. It is to be hoped that they get transmitters going on the 6 metre band soon like 3IV who is revamping a SCR522. 3CI is doing very well with his SCR522 on both 50 Mc. and 144 Mc. and has had some very encouraging reports of his signals on the latter band during the last field day.

3DI and 3VL keep nightly skeds on 6 and rag chew for hours, they talk on anything from apples to radiol 3AKM is reported to be building a new tower for his beam. Nothing has been heard of 3BB or 3ALS lately but believe they are active on 7 Mc. Does anyone know what 3ANC is doing; he hasn't been heard for ages. 3WE still keeps Omeo on the map, your 80 metre sigs are very good now. Bill. 3SS still puts out a solid sig on 80 and is still talking of getting going on 50 Mc.

3QZ, our busy secretary, does not get much time on the air, is busy building a new home. 3ALT is a new Ham at Bairnsdale, he was originally 8FT. Welcome to the zone OM and hope to hear you on the air soon. 3ALT is another newcomer to the zone and is on a farm near Sale. 3PR is QRL with farm work and does not get much time on the air. Has a new Type 3 Mk. 2 and getting out well on all bands.

The monthly meeting of the Eastern Zone Sub-Branch was held on the 11th October when there were 21 present. Applications for membership were received from two associate and one full prospective members. Apologies were received from 3GE and 3BQ who were to have given a lecture on crystal. Business arising from a meeting at the W.I.A. Rooms was the question of banking and election of a Vice-President, which was deferred until next meeting which will be held at the Balcombe Camp on the 8th November. There was an interesting and informative lecture on VHF and UHF tubes, and tuning systems, and a demonstration of the various effects of modulation as seen on a cathode ray oscilloscope (double beam) given by Sgt. Roberts.

NORTH EASTERN ZONE

Zone hook-ups are now entirely on the 80 metre band. First Sunday 9 a.m. and third Sunday 9 p.m. net to 3690 Kc. The majority favored this arrangement, the only ones against being those too lazy to erect a balanced antenna to eliminate BCI. However, by recent developments it seems as though nobody wants the zone, and probably it will just drift apart.

3UI had a week visiting 3DI, 3CI, 3RR, 3SH, 3ABA, 3YS, 3PG and 3HT. Six metres was main interest for Alan, and he came home with many fresh ideas. Now planning a super set-up. 3DV has been on holidays also. Not much dope on them, as I only heard the last couple of hours of his contact with 3KR. Doug's antenna came down in the breeze when the strings gave way. It is now up again with string repaired. 3KR is in good form again after the flu. Ken is keeping fist in on 20 metres. 3TS had his 6 metre signals heard near Foster R5 S5 on phone; Tom is rebuilding for 80 and 40 metres.

3AFP now has W.A.C. on ten phone. Sick of DX in general and Ws in particular; is building for 144 Mc. Peter is the only Ham game to enter your scribe's shack for months. Even he kept his hands in his pockets. 3ACW is active on 40. Chas. has been running VHF tests with 3ABG. 3UI, 3AFP and 3ABG went to Mt. Major for the 144 Mc. field day, but due to abnormal weather, conditions were the worst yet. No results on 144 Mc., and patchy on 50 Mc. Seven complete stations, 9 batteries, a petrol-driven charger, and a stack of generators and vibrators were used. On 50 Mc. main rig was 3UTa home station gear, 80 watts input and about 13 tube receiver with 3 element beam. On 144 Mc. we had an SCR522 and an extra receiver with a ten element beam. We intend trying again, next time with 3ABG's home station gear with 100 watts, from a Mountain near Ararat. Would anybody like to come along, the view is excellent, and there won't be more than 5 tons of gear to load on the truck.

CENTRAL WESTERN ZONE CONVENTION AT HORSHAM

Central Western Zone Convention, although timed for 2 p.m. on Sunday, 12th September, really started with the arrival of 5PB and 8TY on Saturday afternoon. A long and lengthy session immediately started up in 8TA's shack. Another early start was the meeting on the Stawell-Horsham road of the Ararat-Stawell gang with three strange and questionable characters complete with top hats, false beards, and dirty big grins who turned out to be the Maryborough gang in their true colors, led by that shameless scamp VK5XC.

Thirty Hams, Associates, etc., met at the assembly point including 8TY, 5PB, 31F, 3ARM, 8DP, 3ARF, 8XC, 8IQ, 3AGB, 3XU, 3AWN, 3AKA, 8TA, 4FI, 8GN, 8ATR, 3EF, 3AKW, 8CH, 3ACE, VL3KR, VK8KR/3, VH5AH, 8YW and 3QL. Apologies were received from 8HL, 8TL, 8RM, 3CE and Associate John O'Halloran.

First item was the 50 Mc. field day, and we must confess keeping to the zone's usual form, the base station, although on view, was inoperative owing to Claude collecting a piece of steel in his eye. The rig was a beautiful job finishing up with an 829, and reminded us somewhat of the layout of a 522 without being so cramped; however we high-tailed it out to the country and set up the portable rig in the fond hopes of picking up 3ABG or 8CI (who had kindly, but rashly, gone to their respective mountain tops). When the big switch was thrown, wires ran hot, the generator groaned and DC (very hot) appeared on the chassis and panel, systematic and unsystematic checks failed to locate the trouble and the boys were reluctantly forced to give up. However the VL boys were thoroughly enjoying themselves all this time by keeping up their regular skeds with surrounding districts.

About 3.45 the gang pulled up to 3WV to admire and marvel at the 10 kw. rig and 680 foot stick, and our thanks are due to the staff for their courtesy, and patience, in showing us around. After this it was time to eat once more; just what some Hams can eat is a never ending source of amazement, the Maryborough gang must have starved for a week, but at last they were almost satisfied and we were able to get started on the business end of the business.

First item was a Dutch Auction in aid of the W.L.A. "Food for Britain," £16/5/- being collected from gear which had been donated by various members of the zone and ranged from 60 watt bottles to tiny zero-coefficient condensers, while it lasted the fun was fast and furious.

The annual meeting was then commenced; 3GN was re-elected President, 8ATR and 3AKW Vice-Presidents, 8YW Treasurer and Secretary; 3ARM, 8FI and 3XU Committee. Lack of attendance at zone hook-ups was discussed and it was decided to hold the hook-up at 2 p.m. on the usual second Sunday in the month on 7120 Kc. (so you sleep-in blokes will have no excuse now). Among other matters discussed was an appreciation of the good work for Amateur Radio in general done by "Grem-Jin" in the magazine, to encourage better operating procedure, and better signals.

8TA offered to donate six 807s to be awarded at the end of the year, to the zone stations who had the best operating procedure, best signal, or who had the most outstanding record for the year. The offer was accepted and the committee will be the judges, so chaps the ball is at your feet, brush up on the regulations, no funny phonetics (you will find the official ones in the Handbook) and watch your step, clean out the keyclicks and let's show the other zones what we can do.

8TY moved a vote of thanks to 8TA for his work in making arrangements at the Horsham end; he certainly deserved it because nothing can ruin a convention quicker than bad staff work. Our thanks are also due to Mrs. Hardinge for entertaining Mrs. 5PB during her stay in Horsham.

The next convention is to be held at Warracknabeal sometime towards the end of March, and members can look forward to another good show.

Among the interesting items seen at Horsham were 8TA's elements for his new 20 metre beam, they get over the worry of long supports or the possibility of getting light weight tubing such as dural; Byron had them made at the local plumber's out of ordinary galvanised iron sheet, and they consist of tapered pipes, tapering from 2½ inch diameter at one end to ½ inch at the other. They are very light, strong and can be supported quite easily by a 2 or 3 ft. support. Another eye opener was 3EF's antenna, Bert is working loads of OW DX using an inverted L (shades of the past).

Associates present became so impressed with the outstanding individuals present that four were signed up and will forward their forms with the necessary cost. VH5AH could have been roped in also but was referred to VIA.

These country conventions are certainly a great social success, voices materialise into all sorts of

surprising shapes and we return home with a better appreciation of each other's personalities and problems. Please gang don't forget the problem of the Zone Mook-up at 2 p.m. on the second Sunday in the month on 7120 Kc.

QUEENSLAND.

In spite of heavy rain, a large attendance of members was present at the September general meeting. The President (4AW) occupied the chair. Discussion on the conduct of general meetings was opened by 4KB, who expressed the opinion that Council should deal with all business and that general meetings be devoted to a report from Council, and a lecture. The motion was supported by 4FN, and was carried.

At future general meetings, members will wear identification tabs. So fellows, no more wondering who is sitting next to you; just read his disc and strike up the conversation.

On 6th October, the Brisbane gang visited the Frequency Measuring and Monitoring Station at Capalaba. Humour has it that a certain VK4 now has a twenty-four hour clock in his shack.

Those able to attend the general meetings these days are having a feast of good lectures. At the last general meeting Mr. Stroehfeld delivered a very interesting lecture on the subject of "Microphones." A suitable room for Queensland Headquarters has been found at last and it is hoped that before long to install our Library and VK4WI in a central QTH. Service in the past has left nothing to be desired and it is hoped the contemplated change will not materially alter the present service.

Results of the 1948 B.E.R.U. received from 63HH show that in the senior section, 4RT was 25th with 1,609 points and 4RF 16th with 1,045 points. In the junior section, VK4 did a little better. VK4EL running 2nd with 1,609 points, 4TY 6th with 1,069 points, and 4XJ 13th with 593 points.

BAND ACTIVITY

3.5 Mc.—4SV using command set, made the Contest boys in ZL happy. 4AF working ZL on OW, and 4KK doing a little on the band when not working on the 50 Mc. gear.

7 Mc.—Nice boost for Toowoomba Les (4ZZ) the other night when I heard you singing the praises of the "Queen City of the Downs" to 2SH. 4MR active again on OW. 4SV and 4NO on a recent visit to Sydney, met a number of VK2 Hams, and also had FB chat with VK6JS, who was also in the "Harbour City." During the past few weeks the good old 50 ft. slide has been the subject of long debates among VK4s on this band. 4GG and 4CU coming in for much chaffing. 4XP still very active on OW. Jeff has an Eddystone 640 and runs his rig off batteries. Jeff is OW only and manages to work some DX when not working in the sawmill at Numinbah.

14 Mc.—It is not often that we hear any VK4s south of Rockhampton operating on 20, but during the past month a number of stations in the southern area have been heard, among these being 4FN, 4PR, 4XR, 4PD, 4LD, 4RT, 4VP and 4MW. Last couple of weeks in September were very good for DX and VK4s were heard working a number of the not-so-well-known prefixes. 4FH was heard being serenaded by Sara. Nice work John! 4KW uses an 818 and 60 watts into a half wave window. Terrific signal at most times Harry!

28 Mc.—At last this band shows signs of opening up, signals now coming in at good strength at night. During the day the band is fast becoming a DX hunting ground. 4PG, 4HE, 4JP and 4XJ are reported to be doing very well. Countries heard fairly consistently are W, ZL, J, KG, PA, GI, HC and by far the best of all, G phone stations.

ZONE NEWS

Central Zone (VK4HZ).—We are pleased to report that in the Otago Centennial Contest (N.Z. A.R.T.) 4XJ gained first place in VK with 4HZ running second. Nice work Les and Jim! VK2ARR met the Bundaberg gang at one of the Club's weekly meetings. A newcomer to this zone is 4OR.

Townsville Zone (VK4GD).—Townsville Radio Club celebrated its first anniversary on 1st October. Office-bearers for the coming year were elected: President, Mr. R. Greenwood; Vice-President, 4GF; Secretary-Treasurer, 4GE. The Club has a membership of 22 enthusiasts made up of licenced Amateurs and future Hams.

Maokay Zone (VK4KW).—During the past month a new zone has been formed with Harry Dearness 4KW as the leading light. Members in this zone are 4HW, 4FH, 4EW, 4OW, 4KR, 4MA, 4MU, 4AM, 4ZP and 4BQ. The latter is an ex-VK9. We have it on good authority that the Mackay gang are seeking passports to Chile. A certain XYL in Antofagasta has been serenading John, and the boys are getting jealous. The other night a VE2 tried to gate-crash the party and Sara replied in a song with "Hold your hand out naughty boy." Not a

bad idea for those VFO men who use netting to bust up a DX contact.

South-West (4ER).—4UX paid a visit to Laidley during last week-end in September. Claude and 4LD showed the W.L.A. network what can be done with a piece of string soaked in brine as an antenna. 4LD is a butcher so no doubt the next antenna to be used will be a string of sausages. During first week-end in October 4TY and 4SN paid a visit to the Clifton boys. A very FB time was had with 4CU and 4AF. 4KK, although not present in the flesh, added his bit over the 50 Mc. channel. Much activity around the 4OG shack these days, as Cliff has at long last decided to give 50 Mc. a try.

Ipswich (4WS).—Not much news from here this month, but big moves are afoot in Ipswich and we hope to have a swag full of notes for the next issue.

In response to my plea for information (September notes) I am very pleased to be able to report that about a dozen VK4 Hams wrote to me

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during the past month giving details of the gear being used, activity and personal items. Many thanks, chaps.

SOUTH AUSTRALIA

The monthly general meeting of the Institute was held at the usual time and place to a very representative gathering. Max Farmer (5GF) gave a very interesting demonstration of V.H.F. working both in theory and in practice. Max gave an impromptu demonstration of 50 centimetre working, probably the first in VK5, if not in VK. This portion of the lecture was of undoubted interest, and many and varied were the questions asked. 5LF proposed a vote of thanks which was received with acclamation. Signing the visitors' book were a lot of very bad writers, but I managed to decipher the following: ZL2LT, VK2IQ, ex-G3CNSW (who by the way is settling here) and a cordial welcome was extended to 5AC, 5MY and 5LC (long time no see). Members were notified of the forthcoming Xmas Social which is always held in conjunction with the I.R.E., and which will be held this year at the Arcadia Cafe on Thursday, 9th December. The guest speaker will be the "Prof." Sir Kerr Grant.

Why is it that VK5 Hams get sat on hard for key clicks, over-modulation, etc., and yet VK3 and VK2 boys can sound like a thunderstorm working up. What have they got that we haven't? Don't answer that.

Why did Joe McAllister sound so subdued whilst doing the W.I.A. broadcast from "Doc's" QTH the other Sunday? Was it the psychological effect of the environment? Dear, dear me, sitting next to the medical profession at Council meetings does improve one's vocabulary. Thank you Ross.

Chief news from the city this month, strangely enough, concerns the country, to wit, Clare and

its very successful field day. Unfortunately I was not present, but my spies were definitely there, and I heard that the field day celebrations were officially opened by 5KC in the drawing room of 5XL Ken, taking the position very seriously, started with a splendid flourish of the wrist, and when the panic had settled down it was discovered that the fifty guinea carpet of 5XL had been the recipient of the first one. Needless to say, Ken was divested of all metals, and also his high rank of official opener, and the job was taken over by 5XL himself who did the job very scientifically in the kitchen sink. Later in the evening a most scrumptious supper was put on by Mrs. Catford (the XYI of 5XL) and you should have seen the eyes and faces of the boys light up (almost as bright as the 866a in the rig of 5LW when he is trying to work a KQ) when they saw, right in the middle of the table (out of reach) the most "beaut" sponge cake they had ever seen. It was at least one and a half wavelengths high, and four and a half wavelengths across (but what band—80 metres or 10 centimetres—Ed.). Everybody was then invited to "hop in," a somewhat unnecessary invitation, and then for the next half hour all obeyed Senor Rafferty's rules (no not you Ralph Amigo, sit down) of etiquette. When supper was finished, it was suggested that all the gang move over and meet the boys arriving on the train, then to adjourn and meet a couple of "oppers." 5GF and 5LW were heard to mutter something about hating "oppers," but you should have seen them come to life as they saw the two "oppers" seated in the back of the car (yes, you guessed it, two telephone "oppers").

Special mention should be made of the enthusiasm of the two new Hams 5PQ and 5KB, and the ingenuity of these two "scroungers de luxe." To attend the field day they had been on the borrow for weeks, they borrowed a Type A Mk. 3, borrowed a mike, borrowed a power supply, borrowed

an antenna, and blow me down if they didn't borrow a car and head for Clare. Upon arrival they borrowed a prop from the "pub's" clothes line, and then bunged a borrowed two-way adaptor into the light socket and borrowed the "juice." It has been suggested to me that it is a pity that such enthusiasm to attend a field day is not shared by some of the high "moguls" of the W.I.A., such as the Pres., Treas., Sec., and yes; the scribe (I can take it). Anyway, a good time was had by all, which is the main thing, isn't it.

I believe that at the field day, trouble was experienced in keeping 5GF's tubes cool. Fortunately for him there was a pond close handy, and every time the tubes became exhausted a trip to the pond was made. A cow was seen to take a drink from the said pond later on in the afternoon and stagger away and lean against a fence. Whether or not the cow was gassed from the effects of dipping the exhausted tubes in the pond, I would not know as I was not there.

Talking about fences, there seems to be quite an argument going on as to who is going to pay for the ten yards of fence that our organiser ripped out when his car ran backwards down hill. Never mind Joe, when the boys get the refunds from the disposal gear that they are not going to get, there will be plenty of cash around.

A recent Sunday morning broadcast by a commercial station from a suburban Church had a decided Radio Amateur flavour, with 5XU as organist and choirmaster, 5PS as relay technician, 5FQ as control technician, and 5BO as control technician at the regional station. All that was wanted was for the Minister to be "one of us" and the set-up would have been perfect. I did not hear any CQs during the Service, but some of Gordon's cross arm work on the organ sounded very close to it.

I am informed that a certain VK5 Ham nearly had to have the "Doctor" when he discovered that he had accidentally been parked on 8WI the other

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Sunday morning. Anyway it helped to balance out the many occasions that 6WJ had been the recipient of VK3 QRM. Had the said Ham been V.F.O. he could have easily moved away. You beaut!

Received from one of my spies up North, a pair of what is known as "bull protectors," and according to what is written on them they must be worn on the ears when listening to the Northern X's. My childish and innocent mind cannot imagine what it all means, so I am forwarding one to the Editor (bless his heart) and perhaps he, being much more sophisticated than I, will be able to explain. (I wonder what he means—Ed.)

Judging by the "pats on the back" a certain VK5 Ham is giving himself regarding signal strength, excellent phone quality, and general ability, he has never heard of the eleventh commandment, to wit, "Never take oneself too damned seriously."

5XO was heard to remark on the air that he had a very vicious type of QRM near his QTH, and then in the next breath said that 5YQ lived nearby. I might have misunderstood it Charlie, but those words could mean swords or pistols, hi.

The Contest and Spring woke the old hibernator 5RX from his slumbers, and I heard George snoring some choice contacts. Very foxy is George, probably one of VK5's top OW DX boys, but you would never think it. Talking of Spring, rumour has it that 5BW "in the spring a young man's fancy," etc." need I say more.

Switching from forty to six metres makes a noticeable difference to the quality of the W.I.A. Sunday morning broadcasts. On forty, the quality is good Amateur phone, whilst on six, the quality tiddles winks. What is wrong Reg? Ionospheric refractive bifocal convex collywobblers.

Rumour has it that the Northern Gang have got together and intend to print their own Ham newspaper. What about a copy for me fellows?

Released in the press this month was an announcement to the effect that the military at Keewick Barracks had purchased two 500 watt transmitters which would be available to Amateurs in the Service to use in the Amateur bands as part of recreational facilities. 500 watts, blime! I certainly am glad that I do not reside in that area.

5VM is rebuilding—that is, he is changing the shower roses from p.p. to parallel. Reckon 5BA keeps his crystals in a bottle—well the bottle had 3 Xs on it so what else could it be. Glad to meet you OM. No doubt about 5AX. Les kept us all happy looking at the one-watter.

5LC is leaving the North for Adelaide soon. 5GS went back to Kadina from the field day and had mushrooms (from Clare) and QSOs into the early hours of Monday morning. Have you heard 5AI on OW lately? It's not so good. Ron has to send with his left foot now—Nancee will sit on his right knee!

WESTERN AUSTRALIA

The October meeting was held on the 11th, and there were 48 members present. A new member, VK6AV, Ivan Norman, was elected. It was decided to hold the VK6-DX Contest at the latter end of November, the rules being obtained from an existing Contest.

We received information that we will not be able to use the present premises for meetings in the future, and all members will be advised of the new rooms as soon as arrangements have been finalised.

GSA mentioned the difficulties encountered in having "Commercial Pirates" on Amateur bands. A report will be submitted by the Council to F.E. to ascertain what can be done to overcome this problem.

6RU said that it is believed that the S.A.R.L. are destroying QSL cards received for non-members in South Africa. The I.A.R.U. will be contacted to investigate this situation.

Country members please note that the Annual Dinner will be held on 3rd December at the Marelle Tea Rooms, Hay Street, Perth, and a cordial invitation is extended to you all, to be present should the occasion permit.

6FC gave an interesting lecture on the equipment at his station. Antennae, transmitters and receivers with circuits were dealt with in detail. Frank has equipment for 7, 14, 27, 28, 50 and 144 Mc., AM and FM.

The difficulties encountered with his 144 Mc. Transmitter proved to have been of great assistance to other members intending to get on that band.

6JS produced a Wire Recorder, and we heard ourselves as others hear us on the air. It is hoped that Jack will be able to give a similar demonstration when the "bugs" are ironed out of that equipment.

6WS "Skipper" came into his own by handling an Auction Sale of junk that was brought in by the Amateur for the Amateur, at this meeting. The

sale went very late, and the meeting gradually dwindled and wound up shortly after 11 p.m.

PERSONALITIES

6ND is now putting out a signal on 28 Mc. and with his new beam, Neville is making his mark on the "Shift-Workers Band." GTX has been getting into some nice 7 Mc. phone DX. A ZE contact pleased him immensely. Hope the new QTH is OK Jack. 6DX was down town recently and did the rounds of the Disposals stores. 6WH surprised us with the news that he is going to QSL 100 per cent. We reckon Ted will wear the mill out by the time all the cards are typed.

6AQ of Toodyay. What's happened up there Leo? Don't tell us the DC mains keep you guessing! 6RL hunting the DX on 28, 14 and 7 Mc. Ralph's 8 watts is bringing him some very FB QSOs. 6WD is still on 7 Mc. phone and OW. Wally's new crystal mike sounds good too. 6XI lost his 28 Mc. beam in a recent storm. Fortunately, it didn't go far—only came to rest on the roof of the shack! 6LM puts out a whale of a signal on 7 Mc. If Lionel doesn't get S9 from VK3, he doesn't blame conditions!

6HW travels around the band with a VFO. It's a good note Harry but what about putting some speech on it now and then? 6FR is busy with other things these days but his new receiver is finished so he at least knows what is going on and where! 6OR with a new exciter, John has settled down at last—we hope! 6JN heard chasing bugs out of the new modulator. John's phone rig is doing quite a good job on 7 Mc. 6BG says 6KE knows all about bee keeping! Keith knows a good place for a bee hive and it's not in the roof of his shack either. Who got the most bites Peter OM?

6RI did a good job in the VK-ZL Contest on CW. Jim's got it all sewn up. 6KW active entrant for the phone section of the Contest. These two chaps keep VK6 well on the map. FB Ron. 6AG was popular when he announced the arrival of some long awaited Disposals gear. Just about every VK6 will be VFO now. 6FA has ideas about increasing power. How's it going Dick? Did we hear you on 28 Mc. the other day? 6SN has the antenna up at his new QTH. It's working well.

6CM came to light with his WAC. FB Bill, you have certainly earned it. Does HCLJW QSL? 6WZ has a new receiver going now. FB Harry, how about a line or two OM? 6CN tidied up the rig recently, ahem! Cyril is a going concern on all bands. 6EL also of Geraldton fame, has a fine list of post-war DX. Good show Ern! 6RT sported himself a crystal mike. Len puts out a really nice signal on 7 Mc. phone.

6DJ hasn't been heard on so much lately. Those harmonicas keep Bill busy. DX has been plentiful too! 6GS and 6RK can be heard every Sunday after the W.I.A. Broadcast on 7 Mc. How about coming up for the W.I.A. Dinner, Blake? 6XF has some FB phone on 7 Mc. They say that Katanning is the capital of VK6 on his QSL card. 6WG and 6HT: what's going on down there in Albany, Grace? Can't you put the boys into action again? Haven't heard Harry for ages. 6AK has the 'Type A Mk. 3 working well. That phone is really nice Gordon. ZS6OR now has a signal on 7 Mc. also. The gang have been looking for you Len. 6CK is going quietly for a while, but we know what one of Colin's New Year resolutions will be! 6FB still designing his new receiver. It is already working but it will be a super blooper when it's finished. FB Frank!

TASMANIA

The October meeting of the VK7 Division was attended by some thirty members and after the general business was concluded, an interesting and instructive lecture on beam construction was given by Athol Johnston 7AJ. By the way, Athol seems to have suicidal tendencies the way he describes his "diving up and down" the pole on which the beam is mounted.

During the month VK7 lost one of its newer Hams—7OL—who has been transferred to VK3. He was suitably farewelled over several glasses of the "cup wet cheers" and given a presentation by the VK7 lads. Best of luck in your new QTH Lin and hope to hear from you from time to time.

I found out a dark secret a couple of weeks ago. 7EJ hasn't even a key jack in his transmitter, what do you do Ted, flick the mains switch off and on for OW operation.

7OM has taken to swimming during the winter months, he still doesn't know whether he fell or was pushed, want to watch that "Green Label" Bob.

7BJ has built a rotatable beam, he gets out and moves the pole round to get rotation, very crude but apparently quite effective.

7CF at Lake Margaret on the West Coast is

putting in a nice signal on phone to Hobart and 7JH at Waddamana can be heard occasionally on CW.

7LJ has just rebuilt and in fact nearly every Ham in Hobart has rebuilt, is rebuilding or intends to rebuild, so I think yours truly can make enough lucre to rebuild also.

Two of our Associates sat for their tickets at the October examination, and are now anxiously awaiting a thick or a thin envelope to tell them their fate, anyway, best of luck Ken and Don.

It is hoped by the Southern Gang to make a visit to Launceston early in November and hold a Hamfest up there. The newly formed Launceston or Northern Zone is functioning very nicely now and its membership increases at every meeting, thanks to the good work put in by the organisers of the show. Anyway, get the larders stocked you chaps because if it is a hot day, I am going to be very thirsty.

FIFTY AND UP

NEW SOUTH WALES

All bands very active owing to the VHF Contest which is currently operating now and everybody very enthusiastic. Stations 2ADT and 2BZ in Newcastle and 2LZ and 2LY in Katoomba seem to be well to the fore at this stage in points scoring, but results will probably fluctuate as time goes on.

No DX break-through as yet, but everybody living and listening in high hopes that Sporadic E reflections will appear soon.

2WJ, 2LY, 2AH, 2ABZ, 2VW, 2LZ, 2ABS and 2ND can be heard nightly chasing points on 50 Mc. and at the same time carrying out the usual lengthy conversations irrespective of Contest or otherwise. While on 144 and 288 Mc. 2ABZ, 2LZ, 2AH and 2VW are very active discussing this and that at great length.

The following stations are co-operating to the best of their ability as time permits. 50 Mc.: 2ZN, 2AJR, 2YR, 2XX, 2ADW, 2LS, 2HL, 2DF, 2XK, 2BQ, 2NO, 2FO, 2MQ and 2AZ. 144 Mc.: 2ND, 2AJA, 2IY, 2AGB, 2AZO, 2HL, 2NP, 2AZ and 2ALU. 288 Mc. 2AZO, 2ND, 2LZ and 2ABZ, 2HL and 2AJR.

Summing up the position, the suggestion of a VHF Contest would appear to prove a step in the right direction and should DX break-through, there will be plenty of observers to hear it because one can note some of the pre-arranged skeds being made at all times of the day and night.

The October general meeting of VHF Section was held on Friday, 8th October, in Science House with an attendance of 33. The lecture was given by Messrs. Andrews and Maycock, engineers of A.W.A. Co. Ltd., and they chose for their subject "FM Receivers and Transmitters." The lecture was very well received and proved very interesting and instructive. 2AWW moved a vote of thanks on our behalf to Messrs. Maycock and Andrews.

Next meeting will be held on 2nd Friday of November in Science House and the lecture will be delivered by Mr. Holloway of A.W.A. on "VHF Receiver Design." All are looking forward with great interest to Mr. Holloway.

QUEENSLAND

50 Mc.—Report late in September that the Townsville Beacon was being heard in Northern Rivers about sunrise, caused many VHF men in this State to rise early, however no report of any success has been received. 4PG and 4HE have now joined the 50 Mc. fold. On 23rd September at 2000 hours, 4GD of Townsville, heard a station which sounded like W phone, on 50.1 Mc. A new channel was opened up this month with 4CU of Clifton working 4KK of Milmerran. Another Clifton 50 Mc. fan, 4AF, is looking for someone who will be game enough to shin up Arch's 60 ft. pole to replace the 50 Mc. antenna which was blown down recently. VK5KL, of Darwin, is believed to be running a signal continuously on this band and hopes to make contact with Asia soon.

144 Mc.—Brisbane VHF men 4HR, 4RY and 4ZU turned their beams westward last month in the hope that contact would be made with 4XN of Dalby. But their luck was out. Two country members, 4TY and 4KK, hope to make history by putting the first 144 Mc. sig across the bowna. Wish you luck Norm and Keith.

VK6KW's 144 Mc. EQUIPMENT

The equipment of this Station consists basically of a Bendix type SCR522, modified for use on this band. The main modifications have been carried out on the receiver, and the line-up now consists of a 9003 RF stage (original), 9003 Mixer (original), 9001 Harmonic Amplifier (original), and a 9003

Oscillator. This last type was originally a Harmonic Generator.

The I.F. stages have been left as they were, but the audio system has been altered, and although the tubes are still being used, the transformer coupling and intercommunication systems have been removed. The two ganged condensers have been ganged together, with one common dial being used. The over-all sensitivity of the receiver and audio gain seems to be quite good.

The transmitter is practically as it was originally. With the automatic frequency changing apparatus left in its entirety, four crystals being available for selection from a four-position switch, which is mounted on the rack, but provision for keying tone has been incorporated.

A pressel switched type hand-set is being used for both microphone and receiver with press-to-talk operation, relay being used for the change over.

A 12 volt battery provides DC for the relays, but the rest of the power comes normally from an AC pack providing separate supplies for filaments of the receiver and transmitter. A loud-speaker is also provided and there is ample volume from the 1235 output tube.

The station can be made portable in a few minutes, by using a portable power supply consisting of a No. 19 generator. The generator circuits have been modified, and provide approximately 240 volts when transmitting and 275 when receiving. The fixed bias for the transmitter is being obtained from the five 50 volt winding using a series drop resistor. This arrangement works out very well. The power input to the transmitter on AC is 15 watts and with No. 19 power supply, 8 watts. The frequency of operation from this station is mainly on the net frequency of 8007.09 Kc. multiplied by 18, giving a frequency of 144.138 Mc. There are also two other frequencies used which are as follows: 144.652 and 146.802 Mc.

The main antenna system consists of a three element rotary beam mounted on top of a 40 ft. steel tower, which carries both 20 and 10 metre arrays. This beam has a close-spaced director and a wide-spaced reflector. This spacing has been found to be the best on this frequency, by experiment. The feed-line of the antenna is 50 ohm co-ax. When portable, the single half-wave antenna is used, which is mounted on to the hood of the vehicle. However, for field days the three element beam is used. This can be mounted on a suitable mast of the collapsible type.

144 Mc. DIGEST by W. J. Hartley

Splendid weather conditions prevailed for the October 144 Mc. Field Day in VK3, the outlook no doubt acted as a spur to the large number of stations that were heard working over the band. The ever reliable brothers in Jim and Fred Ball (3ABA-3YS) put in an appearance with their portable gear at One Tree Hill in the Christmas Hills where they made 10 contacts, this location is 900 feet up and 22 miles out from the City. The No. 2 party consisted of 3ASG and 3HE, the combination providing 4 watts to p.p. 2C22s, three element beams and a three tube rush box, their location was also on a one tree hill but at Ferntree Gully and judging by the colossal signal put out it can only be surmised that the location is now treeless.

Added interest to the day was the advent of the Geelong boys in 3AKE, 3BU, 3VP and 3BW, while the townites were 3AJ, 3ACM, 3LH, 3EW, 3EM, 3ES, 3HR, 3TO, 3JO, 3LS, 3BQ, 3LX and 3ADC. The last three calls being newcomers to the band.

In view of the way that the low end of the band is always a football serum, 3XM went portable to Berwick where he had no trouble working 3CI who was putting out a R5 S8 signal. 3CI in this case was at Mt. Fatigue with most of his signals going up above the fog layer. Nothing was heard of 3UI-3ABG outfit at Mt. Major or any of the North-Eastern gang. It seems quite clear that if we are going to reach out on this band, a mapped programme to include the country networks is needed also a set-up as to what stations are going to use certain locations, for at present on all field days all the portable signals are always to be found concentrated on the city stations, so from a propagation point of view it would be more logical by a pooled fuel idea to provide for the best and most efficient mobile unit to be sent right out to the Never-Never and put signals to all points of the compass according to schedule and by this means it would make way for Interstate contacts.

At present there are several country groups working away without any outside help and it would

be quite fitting as a reward for their interest if the above was brought about.

During the past month 3VJ, ex-106, made the band with 522 gear providing quite a nice signal, great improvement is noticed in the increased power at 3ABA home's location. 3ZL, of Ballarat, is now on a 144 Mc. Converter and it is hoped that 3AJR will follow suit. 3TO is back on again with a temporary mast without any effect on his good phone. It is understood that the following calls will soon be heard: 3APG, 3PG, 3DZ and 3MP. 3ACU, ex-5CU, is due on at any time now and from Toorak. Colin of 3ACM fame, has a very posh portable gear in hand for the next field day and the operator himself has to wear sun glasses on account of all the gear being nickel plated.

3BU, 3AKE and 3AJF are all on with the 522 gear, all are using 4 element beams on the following frequencies respectively: 144.65, 147.0, 144.13 Mc. 3WT at present is using a 6V6 transceiver and 3APG is on receiver only. The evergreen 3BQ hit the band with a sensational signal from the following line-up: 6C4 straight CO on 8109 Kc., 6V6 doubler, RK34 trebler, RK34 ditto and a pair of TV05/12 Mullard triodes neutralised P.A. feeding a horizontal dipole 27 ft. high; input to P.A. is 12 watts at present and later will be increased to 30 watts, why! For his first field day work, 3LX got around in grand style, he is using a 522 gear for both purposes and is running 15 watts to the final, antenna is a half-wave dipole horizontal and a 60 ohm co-axial feed line up to 25 ft. high.

To date there is no progress results to hand from N.S.W. as to the three months VHF three-band Contest, the only news is that both 2NO and 2RF are having contacts over a half-mile distance on 576 Mc., equipment in use are mod. osc. using the Lighthouse tubes and super regen. receivers.

Activity on 144 Mc. is still at a high level in VK6 with about 18 stations on the job. A very interesting 50 Mc. field day was held with successful operations between the Clare Show Grounds to the top of Mount Lofty. The outfit at the Mount was in the hands of 5JO-LJ-QR and consisted of a converter hitched onto a car radio as the receiving medium, while the transmitter was a 6V6 CO, 6V6 into a 882 for 12 watts to a 4 element Edward P. 300 ohm line beam. Contact on 50 Mc. was made at 1500 hours to 5GF at the Show Grounds. 5GR's signals were R5 S8 from an antenna of three elements 12 ft. high, on this test horizontal gave better results than the vertical. 5ME while at the Mount did not get by so well probably due to having a unsuitable antenna.

Doug of 7AB, the lone VHF worker on 144 Mc. The nearest is the Launceston 144 Mc. network 100 miles away. At present he has to build a new converter, then things will come 3GI's way. The Launceston gang are using super regens. and S.E. Osc. or M.O.P.A.'s.

The Mount Gambier boys are still on the lookout and it would indeed be a help if the N.W. and S.W. Zones could play ball with them.

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FOR SALE—56 Mc. Resistance-Coupled Superhet. Receiver, tube line-up 57 Mixer and Osc., 58 1st I.F., 58 2nd I.F., 56 2nd Det., with tubes and all other components, £1/10/- or offer. Write to H. N. Stevens, VK3JO, 33 Auburn Grove, Hawthorn East, E3, Melbourne.

FOR SALE—Transceivers: 108 Mk. 2, 108 Mk. 3, £8 each. Type A Mk. 3 with power pack, spares and carrying cases, new, £10 each. FS6, complete with power unit, £10. TR1196, 9 tubes and generator, £9. All are complete with tubes, mike, phones, aerial and power units. No batteries with 108s which have been used. Transmitter: S53, a 250 watt job in steel cabinet with racks containing power supply (with low input switch), modulator, 14 sockets, exciter and amplifier, no tubes, £20. Power Unit: Type S for AT5-AR8, two new 866A tubes, £15. Microphone: Dynamic, new, £6/10/-. Headphones, single recr., S.T.C., L.R., 12/6 doz. Owing to change of Quarters I am cramped for room, hence sale. E. Kerby, VK3KK, 85 Auburn Road, Auburn, E2, Victoria.

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TRANSFORMERS OF DISTINCTION

RADIO RECEIVER TYPE

The transformers listed in this section have been designed specifically for use by manufacturers in standard types of radio receiver sets; but they may, of course, be applied to any electrical apparatus for which their specifications make them suitable. Coil temperature rise with continuous operation will not exceed 30-35 degrees Centigrade over ambient. These units are constructed to permit sub-panel wiring, and are fitted with drawn steel covers finished in smooth transmission grey. All these units are baked and impregnated with super insulating varnish and are specifically made for use under adverse climatic conditions.

Item 1. **Type No. 4212**
 Prim: 240v . . . 35vA 50cps
 H.T.: 210 CT 210v 40 mA
 Fils: 5v-2A 6.3v-3A
 Base: 3 x 2½ x 2" H Wgt 2lb. 8oz
 Mntg: H2 "S" is 1½"

Item 2. **Type No. 4282**
 Prim: 240v . . . 37vA 50 cps
 H.T.: 280 CT 280v 40 mA
 Fils: 5v-2A 6.3v-2A
 Base: 3½ x 2½ x 1½" H Wgt 2lb 13oz
 Mntg: H14 "S" is 1"

Item 3. **Type No. 6382**
 Prim: 200-230-240v . . . 45vA 50 cps
 H.T.: 385 CT 385v 60 mA
 Fils: 5v-2A 6.3v-2A
 Base: 3½ x 2½ x 1½" H Wgt 3lb 12oz
 Mntg: H14 "S" is 1½"

Item 4. **Type No. 6292**
 Prim: 200-230-240v . . . 40vA 50 cps
 H.T.: 290 CT 290v 60mA
 Fils: 5v-2A 6.3v-2A
 Base: 3½ x 2½ x 1½" H Wgt 3lb 2 oz
 Mntg: H14 "S" is 1½"

Item 5. **Type No. 8383**
 Prim: 200-230-240v . . . 60vA 50 cps
 H.T.: 385 CT 385v 80 mA
 Fils: 5v-2A 6.3v-3A 2.5v-5A
 Base: 4 x 3½ x 2½" H Wgt 4lb 14oz
 Mntg: H10 "S" is 1½"

Item 6. **Type No. 8382**
 Prim: 200-230-240v . . . 60vA 50 cps
 H.T.: 385 CT 385v 80 mA
 Fils: 5v-2A 6.3v-3A
 Base: 4 x 3½ x 2½" H Wgt 4lb 12oz
 Mntg: H10 "S" is 1½"

Item 7. **Type No. 8302**
 Prim: 200-230-240v . . . 54vA 50 cps
 H.T.: 300 CT 300v 80 mA
 Fils: 5v-2A 6.3v-3A
 Base: 4 x 3½ x 1½" H Wgt 4lb 2oz
 Mntg: H10 "S" is 1"

Item 8. **Type No. 10382**
 Prim: 200-230-240v . . . 62vA 50 cps
 H.T.: 385 CT 385v 100 mA
 Fils: 5v-2A 6.3v-3A
 Base: 4 x 3½ x 2½" H Wgt 5lb 11oz
 Mntg: H10 "S" is 1½"

Item 9. **Type No. 10302**
 Prim: 200-230-240v . . . 52vA 50 cps
 H.T.: 300 CT 300v 100 mA
 Fils: 5v-2A 6.3v-3A
 Base: 4 x 3½ x 2" H Wgt 4lb 10oz
 Mntg: H10 "S" is 1½"

Item 10. **Type No. 13282**
 Prim: 200-230-240v . . . 80vA 50 cps
 H.T.: 385 CT 385v 125 mA Cond. Input
 Fils: 5v-2A 6.3v-3A
 Base: 4 x 3½ x 4½" H Wgt 6lb 9oz
 Mntg: H10 "S" is 1½"
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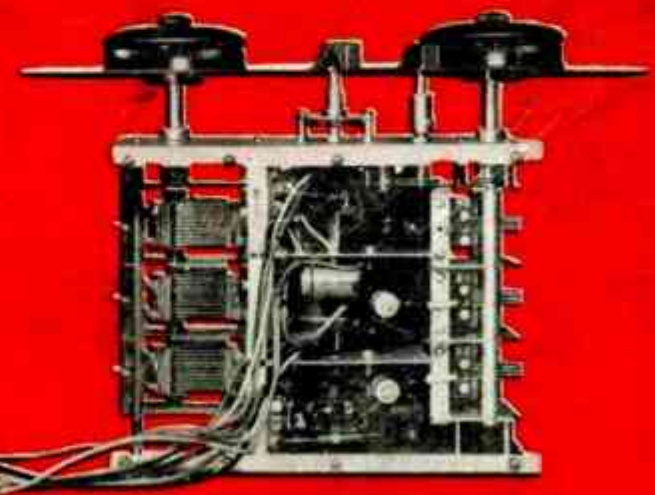
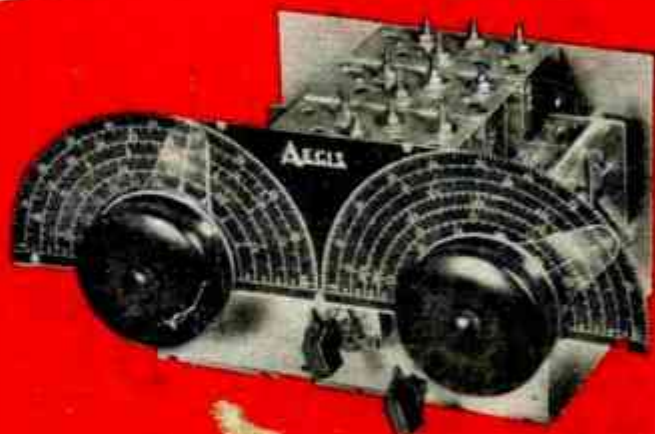
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		27.0 — 30.0 Mc.	10 Metres

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DECEMBER

1948

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EDITORIAL



Due to increases in population and changes in economic standards, modern trends are towards the decentralisation of effort and thought. This statement may well apply to the trends in Amateur radio also.

With the numbers of licenced amateurs rapidly increasing since the War, at a rate greater than ever predicted, it must inevitably lead to large proportions of such amateurs being licenced in the country areas, away from the capital cities. Up to the present time, the main social and political interest in the Institute has been maintained in the capital cities.

Now, as never before, we are confronted with bodies of amateurs in extra-urban areas anxious to band themselves together in a club, or pressing for the formation of Sub-branches, in order to promote some local activity of social or experimental interest. This fact has already been evidenced in some of the larger inland towns of New South Wales and Victoria. Our parochial outlook on centralisation must change—we must take a greater interest in the welfare of these isolated-from-the-city amateurs.

The Sub-branch or Club can be of great assistance to the Divisional Council of the Insti-

tute, in matters affecting Divisional, and even Federal policy, by providing a wider and more representative amateur feeling towards any particular question. From the social side alone, they must provide an essential part of an out-of-town amateur's existence.

So the fostering of such Sub-branches or Clubs become increasingly important; but, at the same time, it is necessary from unity alone that they be Sub-branches of, or at least affiliated with, W.I.A. In unity only is there strength, and it is strength that Amateur radio needs to-day. So for Amateur radio in general and the Divisions in particular, assistance to these bodies is essential, for a lack of individual interest will allow break-away groups to develop who can retard and disrupt the work the W.I.A. is carrying on for the well-being of the individual amateur.

You, as an individual member of the W.I.A., may assist by freely offering your services to your Divisional Council to officially develop the club feeling in your own area, where the formation of a Sub-branch is a necessity in the interests of the Institute, and most important, of local harmony.

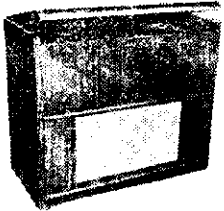
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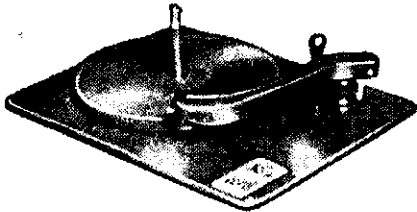
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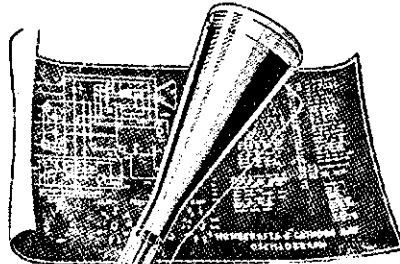
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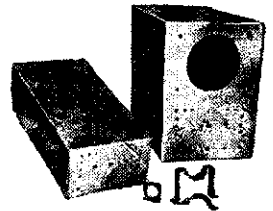
Radiogram Cabinets as illustrated. Walnut Piano Finish, Standard Model £13/19/6. Model with deep well to suit Record changer £14/7/- Country and Interstate clients add 15/- packing charge.



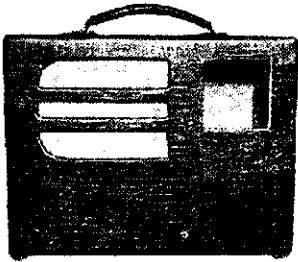
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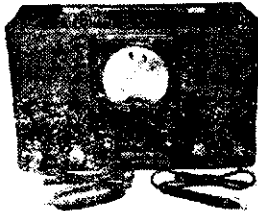
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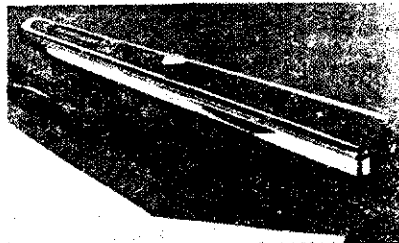
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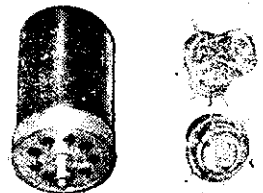
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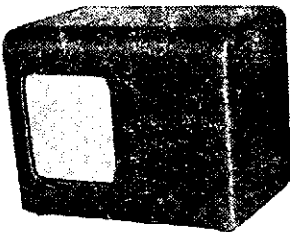


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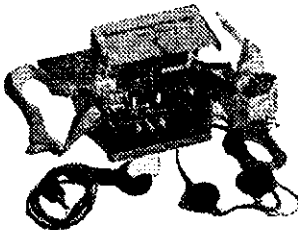


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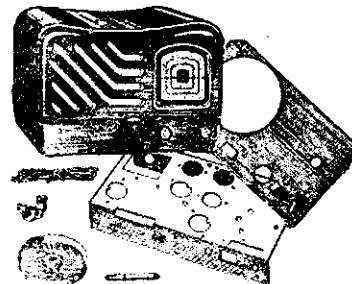
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Propagation of Waves Between 3 and 30 Mc.

BY NEIL S. SMITH*, VK3YY

PART II.†

It will be recalled that medium wave services are mainly dependent on ground wave signals and that particular attention is paid to reducing skywave radiation to a minimum. High frequency services on the other hand depend on skywave radiation and not at all on the ground wave, and design considerations are mainly related to directive skywave radiation.

THE IONOSPHERE Radio transmission over medium and long distance is rendered possible by the existence of a region of ionised layers in the earth's upper atmosphere, extending from about 40 to 260 miles above the earth's surface. These layers possess the characteristic of reflecting radio waves incident upon them, and of exercising a certain amount of frequency discrimination in the process. The arbitrarily defined frequency limits are 3 and 30 Mc. The transmission path of an h.f. signal is therefore from the transmitter to the ionosphere and back to earth, the number of times which this occurs depending on the distance between the transmitter and receiver and other factors to be discussed.

come stratified giving rise to several well defined layers. The density of each layer decreases towards the earth, and their overall density varies in a similar manner.

In order to identify them the layers have been given letters, and those termed E, F, F₁, and F₂ are those we are primarily concerned with in this paper.

The E, F₁, and F₂ ordinarily exist in the daytime. At night E decreases in effect, and F₁ and F₂ merge into F.

F₁ layer 86-155 miles—Daytime (occasionally absent in winter).

F₂ layer 155-280 miles—Daytime (summer).

F₁ layer 94-190 miles—Daytime (winter).

F layer 110-250 miles—Night (merging of F₁ and F₂).

Briefly, each layer may be regarded as reflecting a certain band of frequencies, the actual values depending on the diurnal, seasonal, and cyclic variations of density and height, as well as on the angle of transmission and the distance of the path. Three typical paths are shown in Fig. 2a; Path 1 being from T to R, via the E layer, Path 2 from T to R, via the F₁ layer, and Path 3 which is on a frequency and at angle which does not suffer reflection from any layer, and is lost in space.

The factors to be deduced from the above are of importance and may be better appreciated by reference to Fig. 3, which shows the three layers usually present during the day. In the figure T represents a transmitter and R a receiving area. Since the ray leaves

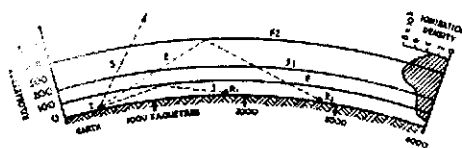


Fig. 2a.

Figure 2a shows in elementary form the ionisation structure for a typical summer day. The layers are shown with single lines for simplicity although they are really bands of varying density. Fig. 2b shows in a little more detail the variation of density with height.

The height and density of a particular layer will vary at different times of the day, at different seasons, and with the period of the sunspot cycle. Average heights suitable for estimating transmission frequencies may be taken as:—

E layer 45-90 miles—mostly useful in daytime.

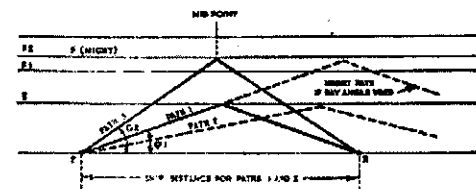


Fig. 3.

the layer at the same angle at which it entered, it is usual to consider the mid-point of the path as the reflection point. Path 1 shows the path of a signal from T to R using the E layer. If the transmission angle is too low, say Path 2, the reflection will occur beyond the mid-point and the signal will return beyond R. If the angle were doubled, R would be reached in two hops, but there would be some additional attenuation due to reflection losses both from the ionosphere and the ground. Consider the night condition when E is useless and the F layer provides the required reflection. If transmission was made the signal would take the dotted path to the F layer and be returned far beyond R. In order to keep the reflection point at the mid-point of the path, the angle must change so that the signal will follow Path 3.

Although this sounds complicated, it is usually accomplished by merely changing the frequency of the transmitted signal. It will be appreciated by now that each layer will have a "last" frequency to be reflected from it before the signal goes through to the next layer. This frequency is termed the

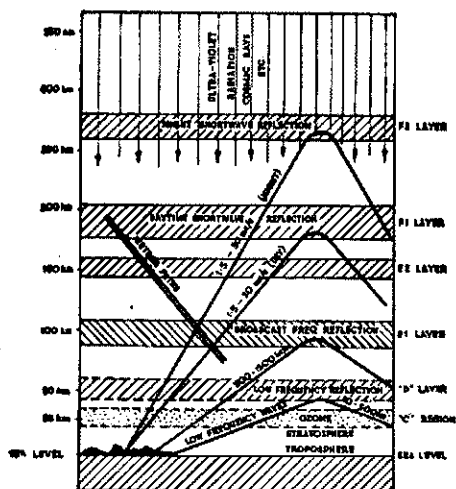


Fig. 1.

The chief factor in the formation of the ionosphere is considered to be ultra-violet radiation from the sun, which ionises air particles in this region. Fig. 1 shows in an elementary way a picture of the earth's atmosphere.

The air at this height is so rare (i.e. the particles are relatively remote) that once the particles become ionised recombination is so slow that there exists always a region of ionised particles.

This ionisation is not uniformly distributed with altitude but tends to be-

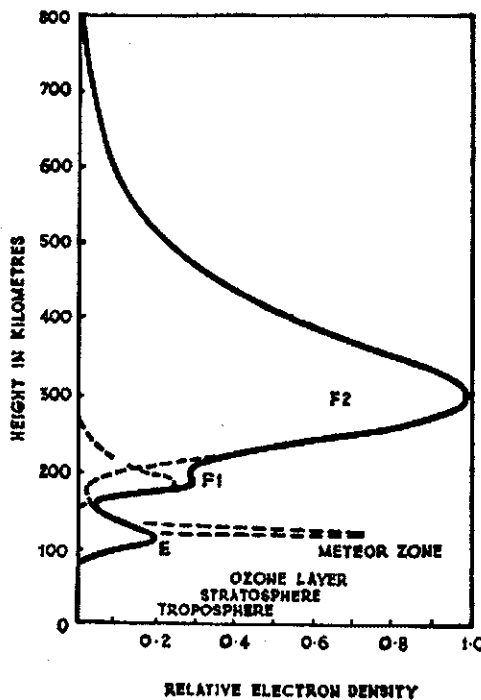


Fig. 2b.

† Part I. appeared in July, 1948.

* 14 Durham Road, Surrey Hills, E.10.

"critical" frequency for the particular layer and may be explained by reference to Fig. 4, which shows how the relative density of the layers varies from the lower edge to the upper. The depth of penetration is a function of the frequency of the signal and increases as the frequency increases. If we send a signal of increasing frequency into the ionosphere we will eventually find a frequency which goes through the first layer to the second, and ultimately one which goes through all layers and is not reflected at all. It is customary to refer to the distance covered by a once-reflected signal as a "hop," thus we have "single-hop" and "multi-hop" transmissions. The first term applies in general to internal services and the second to the overseas services.

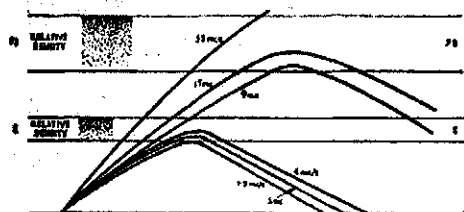


Fig. 4.—Illustrating the variation of density on signal frequencies.

SKIP DISTANCE

This is a factor of particular importance in the case of internal services since there is generally a minimum limiting distance at which reception is desired. "Skip distance" is the distance between the transmitter and the point where the signal is first reflected back to earth.

This distance will vary from 200 to over 2,000 miles according to time of day, frequency, and sunspot period, etc., and thus in the case of single-hop transmissions a constant check has to be kept on this factor to ensure reception over the areas relatively close to the transmitter.

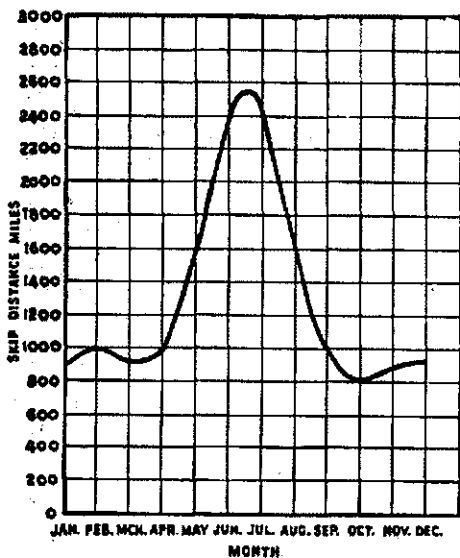


Fig. 5.—Variation of skip distance for 9 Mc., at 0600 hours E.S.T.

Fig. 5 shows how the skip distance for 9 Mc. may vary over 12 months at 6 a.m. Australian Eastern Time and for a reflection point between 25° and 35° South latitude.

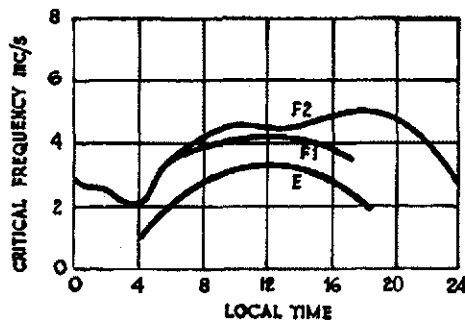
SUNSPOT CYCLES

Reference was made to the sunspot cycle which extends over a period of 10 to 12 years but is not constant either in time or number of sunspots. A detailed explanation is not requisite here, but Fig. 6 is included to show the variation to be expected in critical frequencies for summer and winter conditions at the maximum and minimum periods of sunspot activity. Particularly noticeable is the change for winter. The skip distances would vary in the same ratio.

PROPAGATION DATA

Data is regularly published enabling calculations of the frequencies required for different transmission paths and circuits to be made a month or so ahead. This data is prepared from the results of measurements made of the critical frequency for each layer. A little elaboration of this seems desirable, since many administrations co-operate in the compilation and application of this data.

Method of Ionosphere Investigation.—By means of investigations conducted concurrently throughout the world the condition of the ionosphere for radio



SUNSPOT MINIMUM

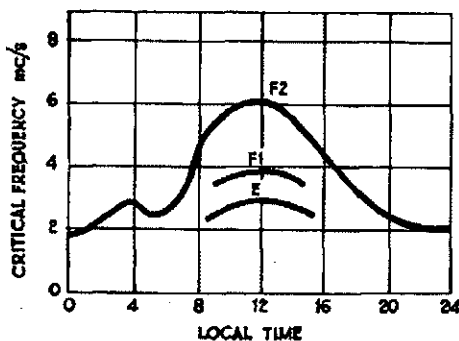


Fig. 6.

transmission between all parts of the globe is ascertained. The results of these tests are co-ordinated and radio propagation bulletins published by various authorities controlling communication services.

One of the most useful systems is, perhaps, that known as the pulse method. In this method, short wave trains lasting possibly 10^{-4} seconds are transmitted vertically upwards. A locally situated receiver picks up both the direct and reflected pulses. The out-

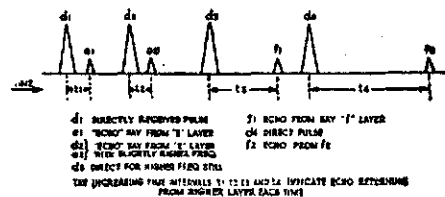
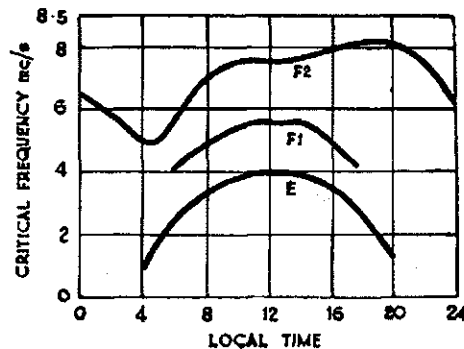


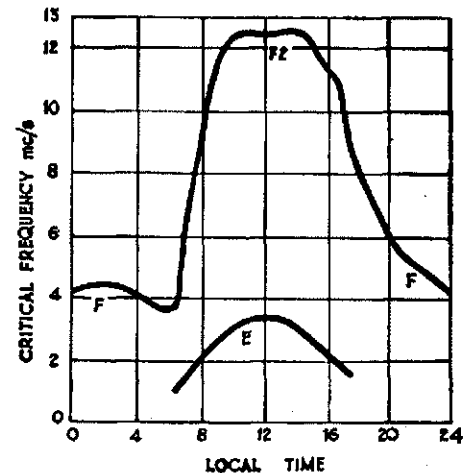
Fig. 7.

put of the receiver is applied to some form of oscillograph having a suitable time-base. The time interval between the direct pick-up and the echo signal is determined from the time-base and is readily converted into distance since the velocity of the radio wave is known (300×10^6 metres per second). Figure 7 illustrates this point.



SUMMER

SUNSPOT MAXIMUM



WINTER

Equipment developed for these measurements transmits 10 to 60 pulses per second, with the frequency changing between each group of pulses so that a range of perhaps 1 to 20 megacycles per second is swept through in about 20 minutes.

During this series of tests it is necessary that the transmitter and receiver be accurately tuned to the same frequencies. This is accomplished by a synchronising circuit. A typical set-up is illustrated in Fig. 8, while Fig. 9 shows a convenient method of representing the information obtained by this measuring technique.

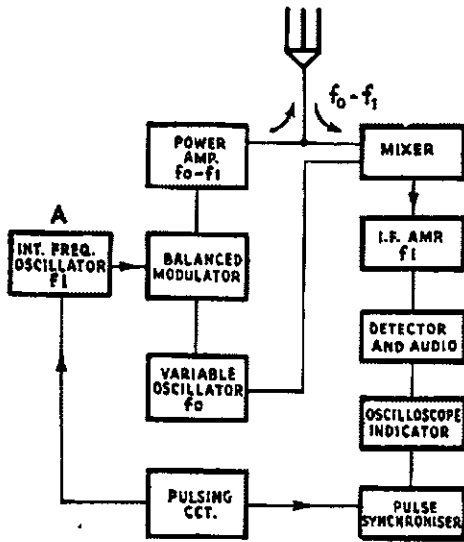


Fig. 8.

Commencing with the first frequency there will be a very slight difference only in the echo time as the frequencies penetrate more deeply into a layer, until the point at which the frequency penetrates through the layer to the next higher layer. The time interval will noticeably increase when this happens indicating that the signal has travelled to the next layer. The last signal (i.e. the one previous to this) is termed the "critical frequency" for that layer, and this frequency should not be exceeded for transmission via this layer. Actually the highest frequency it is safe to use is about 80% of this value to allow for day to day variations in layer height.

Nothing now remains but to relate these vertical incidence measurements to the practical cases where transmission takes place at angles between about 7° and 40° above the horizontal.

What is done is relatively simple; the transmission angles for distances from 500 to 2,500 miles in steps of 500 miles are determined. The vertical incidence critical frequencies are multiplied by a factor (always greater than 1) depending on this angle and the resultant frequency is the critical frequency for that particular layer and angle of transmission. The actual factor depends on latitude, longitude, time, season, and the sunspot period, thus the graphs will vary from month to month and year to

year. A typical presentation is shown in the graphs in this issue of the magazine.

Absorption limited frequency, and lowest useful high frequency.—This procedure determines the maximum usable frequency for particular conditions but does not indicate how much below this frequency satisfactory transmission may take place. It might be thought that any frequency below the m.u.f. could be used, but it is recommended that the frequency used be not less than 50% of the m.u.f.

There are other factors, however, which set the lower frequency limit, and of interest are "the absorption limited frequency" and the "lowest useful high frequency" abbreviated "a.l.f." and "l.u.f." respectfully. These represent two different approaches to the determination of the lower frequency limit.

It is generally accepted that satisfactory propagation of h.f. signals is effected only by reflections from the F layer. In long distance circuits, however, a condition can arise, where at some intermediate point, the E layer density is such that it exerts a controlling influence on the circuit. The E layer will have a maximum usable frequency and this m.u.f. may be lower than that determined by calculation at the terminal points. When the signal reaches this area it will be unable to penetrate through E to F, and in the process of reflection from E, it is very highly attenuated. Transmission can only take place when the signal frequency is higher than the m.u.f. of the E layer at this point, and it is not always possible to fulfil this condition.

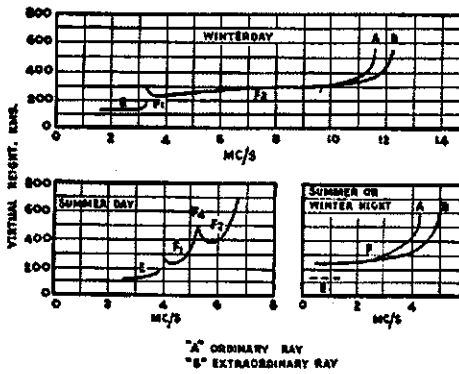


Fig. 9.

The l.u.f. is determined from a consideration of many factors, among which are: solar absorption, time of day, season, effective transmitter power, local noise conditions at receiving terminal, type of service (telegraphy, telephony, broadcasting), aerial systems, etc. It does not appear to be appreciably affected by the sunspot cycle, but investigations are still being conducted to determine more fully these characteristics.

The foregoing is a brief picture of propagation up to about 30-40 Mc. Above these values "line-of-sight" transmission predominates, the higher frequencies in general suffering no reflection from the normal layers.

THE WHY OF ODD VALUES

After listening on the bands and having discussions with various Hams, there appears to be some confusion as to why odd values of capacity and resistance are appearing in circuit diagrams. However there is a good reason for this when it is understood why.

There is a new system of numbering being used now and this is based on the idea that permissible tolerances in values are what counts. Starting with 1 (10, 100 or any decimal multiple) values increase logarithmically so that each higher value represents a constant percentage increase over the value immediately below it. In practice, the values are rounded off to two significant figures, this order of accuracy being enough to give a complete range of the smallest tolerance (5%) ordinarily required.

A summary of values from 10 to 100 is given in Table 1. Larger values are found by multiplying by 10 or any multiple of 10, smaller values by dividing by 10 and its multiples.

Many of the old numbers such as 25, 50 and other "even" values, do not appear. However, such values in themselves usually have no particular significance; they are simply convenient numbers to remember. Where no tolerance is specified it is to be understood that the largest tolerance available in that value is to be used; where two or three tolerances are available and a small tolerance is required, it will be specified. For example, if a 47,000 ohm resistor is called for, the tolerance is understood to be 20% unless otherwise specified. On the other hand the 36 value appears only in the 5% column, so it would be understood that a 3,600 ohm unit would have 5% tolerance.

Values for the capacitances of small mica condensers follow a similar table, although in this case values listed under 5% tolerance can also be obtained with 2% tolerance.—June 1946 "QST."

	20% Tolerance	10% Tolerance	5% Tolerance
	10	10	10
			11
		12	12
			13
	15	15	15
			16
		18	18
			20
	22	22	22
			24
		27	27
			30
	33	33	33
			36
		39	39
			43
	47	47	47
			51
		56	56
			62
	68	68	68
			75
		82	82
			91
	100	100	100

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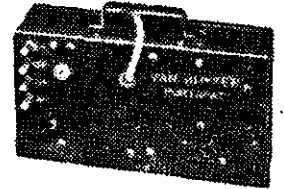
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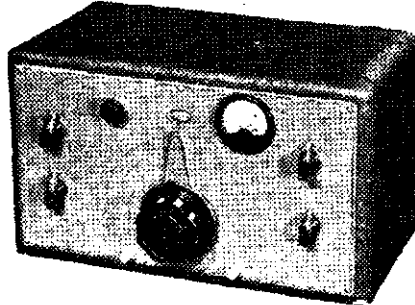
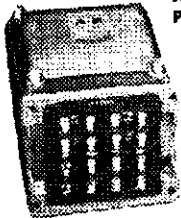
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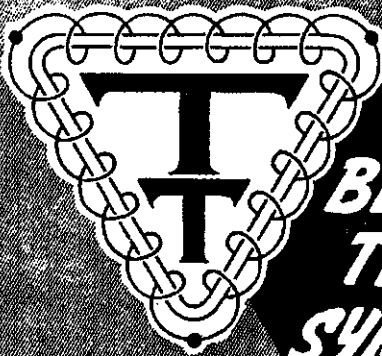
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Variable Frequency Crystal Control

BY J. G. REED*, M.I.E. (Aust.), VK2JR

This article is based on a paper read before the Wireless Institute of Australia, N.S.W. Division.

The increasing congestion in Amateur communication bands of 80, 40, and 20 metres takes considerable pleasure out of contacts particularly when local QRM assumes blanketing proportions. Under such conditions operation with orthodox crystal control is akin to an endeavour to drive down a crowded highway with a fixed steering wheel. After numerous bumps with others like afflicted, the less hardy draw into the figurative curb and wait until traffic thins down a little. If such a state of affairs existed in the motoring world none would tolerate such bedlam. Amateur Radio traffic labours under interference equally as annoying, seeking a doubtful relief by crystal change which is often "out of the frying pan into the fire."

Variable frequency valve oscillators afford some form of relief, but if not skillfully constructed and operated, signals are likely to flounder about the band.

It has been long known that it is possible to cause slight shift in the frequency of a crystal oscillator by connecting a small variable capacitor between the grid and cathode. All broadcast stations employ this connection in their frequency control circuits for precision adjustment to their assigned channel frequencies.

Frequency change of one or two hundred cycles per megacycle is possible by this means. Expressed in frequency change on the 40 metre band, this would be little more than a kilocycle, and be by no means adequate in steering past the beat note of an interfering station.

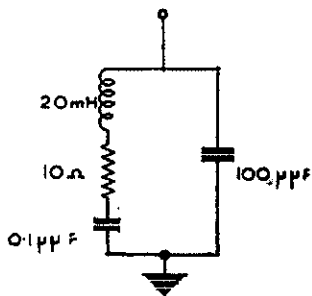


Fig. 1.—Equivalent circuit of 3.5 Mc. Crystal.

During the war years it was found that serious mutual interference occurred between stations occupying narrow communication bands. Investigation of methods of crystal control revealed the fact that it was possible by relatively simple means to secure controllable frequency shifts of at least one kilocycle per megacycle, and with some crystals,

free of spurious modes of oscillation, changes of two kilocycles per megacycle were obtainable.

Taking the conservative figure of one kilocycle per megacycle, this would give a "steerability" of seven kilocycles on the 40 metre band, fourteen kilocycles on the 20 metre band, and as much as twenty-eight kilocycles on 10 metres. With such a flexible control of operating frequency, it would seem that the experimenter's perennial dream of a rubber crystal has at last come true.

Referring to Fig. 1 it will be seen that the equivalent circuit of a typical "AT" cut crystal is a network of two arms; that to the left corresponding approximately to that of the actual distributed capacity of holder, associated crystal, and the right arm that of the valve and socket and other circuit strays paralleled to the crystal.

Reactance Neutralising of Crystal Circuit.

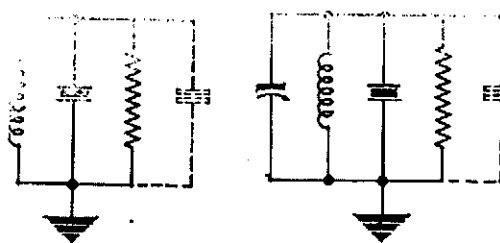


Fig. 2a. Inductor Control. Fig. 2b. Capacitor Control.

Adding capacity in parallel to the C_o element will cause a slight decrease in frequency as mentioned above. If this capacity could be reduced the frequency would be increased above normal. Little can be done as regards the actual physical reduction in capacity in the crystal circuit. However, it is possible to neutralise the negative, or capacitive reactance by the addition of positive or inductive reactance in parallel to the crystal holder.

Fig. 2 illustrates two methods of accomplishing this reduction in capacitive reactance of the crystal circuit. Use of a directly variable inductance presents mechanical complications as a suitable proportioned variometer is not a standard item. The alternative circuit in Fig. 2b employs a capacitor tuned "LC" circuit paralleled to the crystal. The latter circuit must tune—with the distributed capacity—to a higher frequency than the normal frequency of the crystal, gradually approaching resonance as the value of the variable capacity is increased. (In the inductance tuned

circuit of Fig. 2a the tuning should approach from the low frequency side.)

Full neutralisation of the shunt capacity should not be attempted, particularly with "AT" cut crystals, otherwise operation on spurious frequencies may occur. "X" cut crystals are relatively free from spurious response, and may be operated with the capacity reactance neutralising circuit much closer to crystal frequency resonance with corresponding greater frequency shift.

Care should be taken in the mechanical construction of both capacitor and inductor employed in the frequency shifting circuit. Ceramic former for the inductor and similar endplates for the capacitor will ensure high stability.

Compared with the frequency stability obtainable in a simple tuned circuit oscillator employing a similar inductor and capacitor, the stability of the variable frequency crystal oscillator is better than fifty times that of the oscillator for corresponding small changes in L or C values of the tuning circuit.

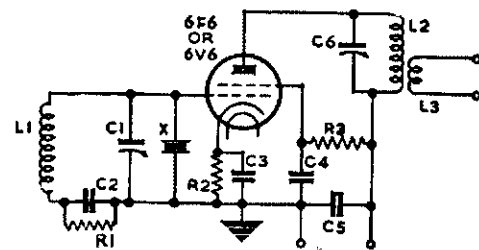


Fig. 3.—Circuit for Variable Frequency Crystal Oscillator.

- C1—50 to 100 pF. Variable.
- C2, C3, C4, C5—0.01 μ F.
- R1—100,000 ohms.
- R2—400 ohms.
- R3—10,000 ohms.
- C6—100 pF. Variable.
- L1—20 μ H. Inductance.
- L2—30 μ H. Inductance.
- X—3.5 Mc. Crystal.

A suitable circuit for operation under variable frequency crystal control is given in Fig. 3. A tetrode or pentode valve should always be employed for a crystal oscillator. The low capacity between grid and anode of such valves keeps the Miller capacity effect low. As this dynamic reflection of capacity appears in parallel with the crystal it has an influence on the generated frequency which would be relatively important in the special circuit described in this article.

Crystal oscillators should be employed for frequency stabilisation and not be depended on as power generators. Valves are relatively cheap, and it is recommended that the crystal oscillator be followed by an amplifier inductively

(Continued on Page 17)

* 57 Kameruka Rd., Northbridge, N.S.W.

Neutralising that Tetrode P.A.

BY J. N. WALKER* (G5JU)

The subject of instability in beam tetrode r.f. power amplifiers has been flogged to such a degree that one would think no more need be said about it. One has only to listen on the Amateur Bands, however, to realise that the importance of the point is not yet fully appreciated by many Amateurs, who still unwittingly emit signals other than, and in addition to, the fundamental one.

It is not the intention to discuss parasitic oscillations of the v.h.f. and low radio frequency types. Suffice to say that tests should always be made, when setting up a new transmitter, to ascertain if parasites are present and, if any signs of them are found, steps taken to eliminate the parasites, using methods which are common knowledge.

CAUSE To make our present point, let us assume a transmitter with a p.a. stage using an unneutralised beam tetrode (or perhaps two in parallel or push-pull) of the 813, 807 or KT8, etc. variety, the bias being partly or wholly fixed so that, when not driven, the anode current is zero.

Switch on the transmitter and adjust for normal excitation, load, etc. Now, in all probability, a study of the emitted unmodulated signal on one's own receiver (with the r.f. gain backed off) and on the receivers of neighbouring Amateurs, will indicate a single carrier with clean edges and no spurious "squiggles." On the strength of this, the owner will be convinced that he has and that, as the manufacturers usually state, there is no necessity for neutralisation. All well and good. Or is it?

To make quite sure, try this test. Without touching any tuning controls, "kill" the drive by any convenient method but leaving normal voltages applied to the electrodes of the p.a. valve. Or rather, if high voltages are in use, it may be wiser to reduce at least the anode voltage to something like 60% of normal.

Next, gradually reduce the grid bias voltage (care being taken to see that the operator does not come in contact with any h.t.). Soon after a standing anode current is registered on the anode current meter, it is only too likely that the current will jump suddenly to a comparatively high value and grid current will also be indicated. The stage has, in fact, gone into self-oscillation.

Again, look for the signal on your receiver. The text book will tell you that, because of the altered operating conditions, particularly as regards phase, the tuned plate tuned grid circuit we are in fact considering will oscillate at a slightly different frequency when

self-excited than when it is driven. Your receiver will confirm this fact. On the 14 Mc. band, for example, the difference may amount to 500 Kc. or even more, and the new frequency may lie outside the Amateur Band.

EFFECT Now to the point. If the feedback is sufficient to allow self-oscillation to occur, the transmitter may be operating under what amounts to a "locked" condition. For a fraction of a second when the drive is applied, the p.a. self-oscillates but very rapidly comes into lock with the drive frequency.

There are two important effects when this happens. One is the interference caused by the actual sweep of 500 Kc. or so across the band (keeping to the 14 Mc. example). The other is that a transient of this nature in itself creates sub-harmonics over a wide frequency range and interference can be caused to receivers working on frequencies well removed from the transmitter fundamental, and that over a wide area, when considerable power is employed.

Obviously, this effect will occur every time the key is pressed by a c.w. operator. Not so obviously, it will also occur if the carrier is heavily modulated, through the valve being inoperative for minute fractions of a second at negative peaks. So when you hear "funny" noises at one part of a band and find a local (or perhaps not so local) transmitter putting out a signal in another part of the band—or even another band—you will appreciate what is happening. It is then up to you to see that he reads this article and also up to you to make quite sure that your own transmitter is not "playing up" in the same way.

If, when carrying out the foregoing test, self-oscillation does not take place before the anode current reaches a value such that the rated dissipation is not exceeded, do not be satisfied. Try rotating the anode and grid tuning condensers (the latter may, of course, be the anode tuning condenser of the preceding stage) to ensure that the stability is high irrespective of the adjustments. If self-oscillation is experienced, it will be just as necessary to eradicate it.

THE CURE The cure, obviously, is proper neutralisation, so that the stability is actually, as well as apparently, high.

Neutralisation is carried out exactly as with a triode amplifier but the application is not so easy, by reason of the very much smaller capacity which has to be balanced out. A popular method with twin tetrode valves (of the QV04/20 or 829 types) is to run well insulated wires from the grids and permit them to lie near the opposing anodes, varying

length and distance until neutralisation is correct. The writer approves (and uses) this method on the v.h.f.s. as it is desirable to keep the physical mass of metal to a minimum. At the same time, it must be admitted that it is somewhat of a "hit or miss" method and becomes more difficult to apply and adjust with valves of physically greater sizes.

Some means of making a definite adjustment is desirable and the writer has found the answer in the use of a modified Eddystone Cat. No. 481 neutralising condenser (two in a push-pull stage). The modification consists of the removal of the larger of the two cups and the reversal of the metal part which holds the screw plunger so that a wider than normal gap results.

The condenser must be mounted in such a way that the two connecting wires are screened from each other—otherwise the capacities between the wires are liable to be greater than that of the condenser. It is also desirable to keep the connecting wires short, particularly at the higher frequencies. There will usually be a metal screen separating the input and output circuits and it should not be difficult to fit the condenser in a position on this screen such that it is readily accessible for adjustment and fulfils the other conditions. The fixing screw should be a counter-sunk type, when the possibility of flash-over is remote, even with a well-modulated 813. The circuit will take the normal form, with a split-stator tuning condenser in the anode circuit. The neutralising condenser should be adjusted in the direction which indicates a reduction of grid current, under self-oscillatory conditions, and a quite definite point will be found at which self-oscillation will not occur at any positions of the grid and anode tuning condensers.

On returning to the normal driven condition, with grid bias increased to its normal value, it will probably be noticed that the grid current is little less than it was in the unneutralised condition, which is accounted for by the removal of the positive feedback.

ERRATA

It is regretted that an error appeared in the drawing of Fig. 2 on page 16 of the November 1948 issue. There should be no connection between the moving arm on upper section of S1 and position A on lower section of S1 as this obviously shorts out R1 on Range A.

Also in the schematic on page 18 of the same issue two C23s appear. The output coupling condenser should be C24 and of a capacity of 100 pF. The filament by-pass condenser (C23) near T1 is a 0.006 uF mica. We suggest you make the above alterations to your copy.

* Engineer, Technical Services Department, Stratton & Co. Ltd., Birmingham, Eng., and published by special arrangement with the "Short Wave" Magazine.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

The charts accompanying this page, prepared by the Ionospheric Prediction Service of the Commonwealth Observatory, are similar to the first set published in the November, 1948, issue of this magazine. Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

The Canberra charts refer to the following world zones:—

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N.-West America	San Francisco
3a	N.-East America	New York
4	Central America	Barbados
5	South Africa	Johannesburg
6	Far East	Manila

The forecasts have actually been prepared for point-to-point circuits between Canberra and the overseas terminals mentioned in the above table. It is, however, to be expected that the charts will provide an approximate indication of ionospheric conditions for all Amateur contacts from South-Eastern Australia to the various world zones.

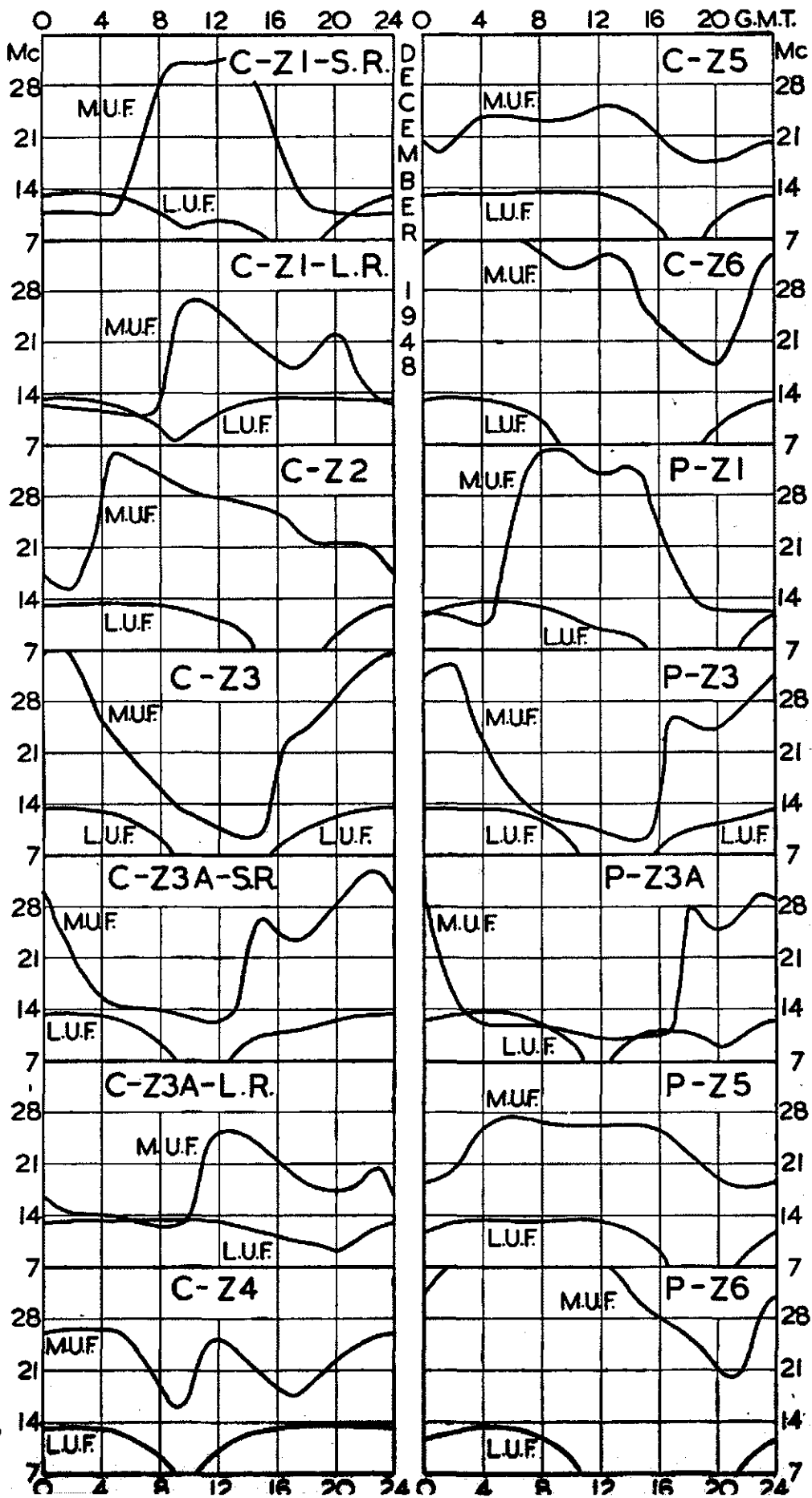
The Perth charts are similar to those based on Canberra, except that the Far East terminal is Shanghai in chart P-Z6. No forecasts are given from Perth for Zones Z2 and Z4 for the current month. Chart P-Z2 would be essentially similar to P-Z1, while chart P-Z4 would be unreliable due to auroral activity in high northern latitudes.

USE OF THE CHARTS

All that is necessary in using the charts is to select a time (G.M.T.) during which a specified Amateur band frequency is below the maximum frequency (m.u.f.) of the F region of the ionosphere but above the lowest useful frequency (l.u.f.) for the desired contact. In two cases, Zones 1 and 3a, it is necessary to consult both the short-route (s.r.) chart and the following long-route (l.r.) chart.

A practical example might be that of a contact desired between Melbourne and Manchester. The relevant charts are C-Z1-SR and C-Z1-LR. The 28 Mc. band should be open for a few hours both before and after noon G.M.T. on the short route. The 14 Mc. band should be available from sunrise to sunset in England with best conditions on short route towards the end of the English day, when the l.u.f. drops below 7 Mc. Best conditions on long route in the 14 Mc. band should be at about 0900 hours G.M.T. when the whole of the long route is in darkness. The only possibility of a contact in the 7 Mc. band is on short route during the English sunset period at which time there is a complete dark path over the Indian Ocean.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS



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Modulating the SCR211 Frequency Meter

BY F. T. HINE*, VK2QL

How many of us have often wished we had a modulated output from the SCR211 for lining up receivers in the number of ways an Amateur requires. I know I frequently did, and eventually decided the job must be done, and to my surprise it worked out all so simply.

The first requirement is an audio oscillator without a built in supply, although the built in supply can be used. Other parts required are one double pole single throw toggle switch, one banana-type plug and socket, and two 0.01 uF. mica condensers.

The audio frequency can be adjusted to the individual taste when the audio oscillator is being constructed. This oscillator should be constructed to fit in the compartment which was normally occupied by the batteries.

My instrument was the "N" model, for which I have an external voltage regulated power supply delivering 105 volts, so the main details will apply to this particular arrangement, but, basically, it will work out for most models.

One thing that must be kept in mind is the fact that you must be able to remove the instrument from its case as before.

First, remove the meter from the case, and remove the insulated strip holding both the plug and socket used for connecting supply voltages to the instrument, leaving ALL wiring in place. You now need a piece of insulating material the same thickness and width, but approximately 1" longer to replace these in both cases. Drill the new pieces, using those removed as the template, to correspond to those removed. Now take the extra plug and socket, and, at the end of each strip above the top securing screw hole, drill the hole to take the plug and socket respectively.

Assemble these strips, complete with solder lug and about 18" of wire attached to the new plug and socket. This has now given you the means of coupling the audio from the power supply compartment to the instrument itself.

The lead from the plug to the instrument, in my model, now is fed through a ready-made hole directly under the strip.

Connect one of the 0.01 uF. condensers to the h.t. side of the voltage dropping resistor of the oscillator valve. In the various models this resistor is known as: model A, R26; D, R21-2; B, R17; O, R16; M. O. R. and AC, R19; AA, AE, AG, E and N, R18; P, T, AF, AH, R21; all of 50,000 ohms.

This condenser, although doing the duties of coupling, is also keeping the high tension from being anywhere but at the junction of the condenser and the 50,000 ohm resistor in respect of this modification. Now connect the other

end of the condenser to the lead from the plug just fitted. This completes all action in respect of the meter itself.

The lead from the newly fitted socket is fed through the hole already used to get the power leads from the battery compartment to the insulated strip.

The model "N" has a narrow compartment in the front of the meter case at the bottom lower half. Remove the cover from this compartment and a dividing partition will be seen between the battery compartment and the spares compartment. In this partition drill a hole to take and mount the toggle switch.

This switch is now placed in the lead from the main filament and h.t. supply to the filament and h.t. of the audio oscillator.

If you are going to use the audio oscillator to some great extent there is no need to break the filament voltage, but the average Amateur will use the modulated section considerably less than the r.f. section so why run the filament all the time.

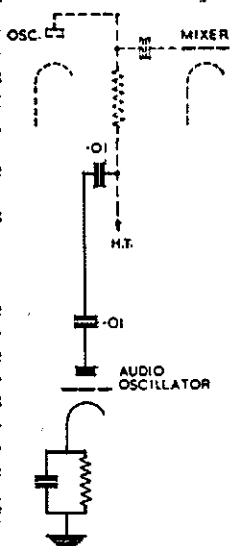
Now connect the second 0.01 uF. condenser to the anode of the audio oscillator tube. This condenser also prevents h.t. from proceeding past the tube anode as well as doing the job of coupling, so that no h.t. occurs anywhere in the coupling circuit between the audio oscillator anode coupling condenser.

This completes the modification. With the modulation switch "off," switch on the frequency meter. Check some of your crystal check points and you should see absolutely no change from previously.

Switch on the audio oscillator and you should hear the modulation come on after the tube has warmed up. This will NOT be tunable in the earphones you have plugged into the frequency meter. Remove the earphones or speaker, if you use one (mine is an earphone mounted in a cigar box), and replace with a plug which has no external connections. This will enable you to operate the meter without listening to the meter itself. Switch on your t.r.f. or AR88 and set the tuning to the beat of the frequency meter and receiver. Now switch off the b.f.o. switch on the receiver and switch on the audio oscillator. As soon as it warms up you will

hear music in your ears to the tune of audio frequency you built into the audio oscillator.

An added refinement can be made by putting a 5,000 ohm potentiometer in the h.t. lead to the audio oscillator. This will give you a variation in tone and this control can be placed on the same panel as the "on/off" switch for the modulation, although in our particular case we have found it unnecessary.



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A Turning Indicator for Rotary Beams

BY P. M. JEFFERY*, VK6PJ

While discussing turning indicators with G2IG he mentioned a system used in England in which I became rather interested.

Briefly, the system consists of a continuous circular rheostat of suitable value tapped at each 120°. Two sliders insulated from one another are placed at opposite ends of a diameter arm. This arm is pivoted in the centre and is connected to the beam. The two sliders are connected to a d.c. source of any suitable voltage available (11 volts in my case). The three tappings are now connected to the shack and into the indicator.

Inside the shack the indicator consists of three coils at 120° to one another connected in a "star" circuit. In the centre of this star is a small magnet pivoted at the centre. This magnet has a pointer attached and takes up a single unique position for each position of the slider arm at the beam.

Does this sound difficult to construct? Yes!

However faced with the excessive cost of Selsyn indicators the author produced the following solution.

Being lazy, I did not feel inclined to wind a rheostat (225 ohms in my case) so as an alternative I mounted 15 brass studs in a circle and joined each with a 15 ohm resistor. This gives 15 indicated directions only and is not as good as a continuous winding, but what a saving of energy! The slider was made from bits of bakelite and brass.

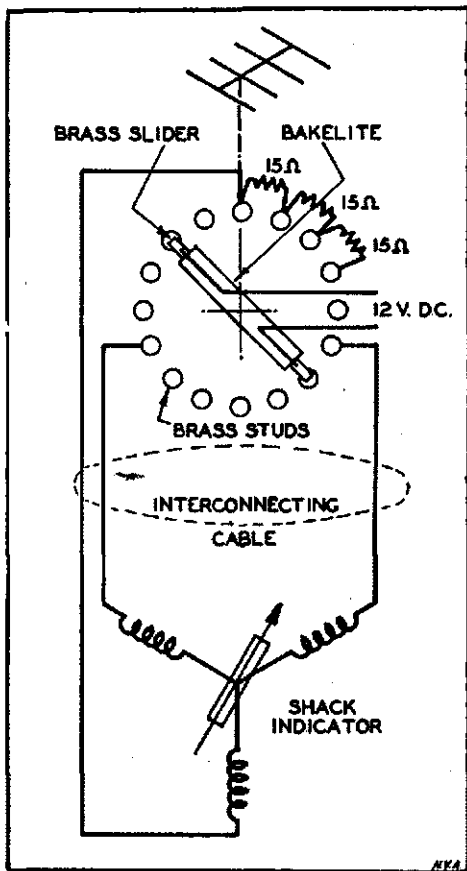
The real problem was the shack indicator, but this turned out to be easier than the rheostat.

An old aircraft indicator was obtained and modified. (I think these indicators were glide path indicators. They have degrees marked on the face starting at zero from the top and a red and green light on either side at the bottom.) To modify the instrument remove the glass face and pull off the indicating needle (straight pull only). Get inside the "works" taking care not to break the thin shaft that drives the pointer.

Remove the rotating magnet and carefully cut or break off the fixed magnet. Replace the rotating magnet and re-assemble. Two small screws, one on top of the other, will be found at the back of the case. The first one of these is a locking screw and should first be removed, then the underneath screw adjusted for smooth rotation of the needle shaft and the lock screw replaced. Connections are then made to terminals 1, 2, and 3 at the back.

Using 11 volts d.c. I have found the indicator most satisfactory. In my case a four-core cable (lead covered return) is used to inter-connect the two units

and a further refinement has been added. My beam is not of the continuous rotation type, so I wired two additional studs and a contact to the red and green lights in the shack indicator. One side of the beam reversing switch is painted red and the other green. I simply press the switch towards the colour indicated and the beam reverses in the correct direction.



The cost may be of interest to some impoverished Hams. Shack indicator, 5/-; 15 15-ohm resistors, 8/-; brass screws, etc., 2/-. Total of 15/- excluding the inter-connecting wire which in my case came to more than the indicator (18/- for 70 feet).

Most Ham shacks have a d.c. voltage of suitable magnitude and little difficulty should be experienced in this direction as no regulation is needed.

THE EDITOR AND STAFF
WISH ALL AMATEURS
A MERRY CHRISTMAS AND
A HAPPY NEW YEAR

HANDY RESISTOR WATTAGE TABLE

In modern receiver and transmitter construction much space can be saved by using carbon resistors of less than 1 watt ratings, because there is no point in using a 1 watt resistor where a ½ watt would be satisfactory, such as in an a.v.c. line for instance.

As a guide to the maximum current which can be carried by a 1 watt, ½ watt, and ¼ watt, the following table is appended.

It will be noticed that a 50 ohm resistor of 1 watt rating will carry 140 Ma., and if the current is reduced by half to 70 Ma., the wattage required is reduced to a quarter watt with a big saving in the space taken by the resistor.

Resistance in Ohms	1 Watt	½ Watt	¼ Watt
50	140 Ma.	100 Ma.	70 Ma.
100	100 "	70 "	50 "
200	70 "	50 "	35 "
300	57 "	41 "	28 "
400	50 "	35 "	25 "
500	44 "	32 "	22 "
600	41 "	29 "	21 "
700	38 "	26 "	19 "
800	35 "	25 "	17 "
900	33 "	23 "	16 "
1,000	31 "	22 "	15 "
1,500	26 "	18 "	13 "
2,000	22 "	16 "	11 "
5,000	14 "	10 "	7 "
10,000	10 "	7 "	5 "
25,000	6 "	4 "	3 "
50,000	4 "	3 "	2 "
100,000	3 "	2 "	1.5 "
500,000	1.4 "	1 "	0.7 "
1 Meg.	1 "	0.7 "	0.5 "

$$\text{Formula: } I = \sqrt{\frac{W}{R}}$$



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STATION DESCRIPTION

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VFO Unit.—This comprises a 6V6G osc. and 6F6G doubler, the oscillator being on 1.75 Mc. The unit is operated with AC on the heaters and 90 volts of B supply from batteries. This unit is link coupled by means of co-ax cable across to the exciter unit which is in the rack and panel. (The VFO is situated to the right of the receiver, which is directly in front of the operator.)

Exciter Unit.—This begins with a 6F6G on 7 Mc., then an 807 which is a doubler to 14 Mc. or a tripler to 21 Mc., and lastly another 807 which is a buffer on 21 Mc. or a further doubler to 28 Mc. Links are taken from the 7, 14, 21 and 28 Mc. stages and by a method of patching, are used to drive whichever final amplifier is being used and sufficient drive is obtained to drive to the full 100 watts on any final used. This exciter is link coupled to the following final amplifiers.

7 Mc. Final.—An old 45 tube is used on this band with 60 watts input. **14 Mc. Final.**—An 805 is used on this band with an input around 85-90 watts. **21 Mc. Final.**—When available an 834 will be used here with about 60 watts input. **28 Mc. Final.**—This uses at the present an old 808 which, when it is replaced, will also use an 834, however the 808 is at present also run to 60 watts.

The same power supply is used for each final and is switched to the final required; it is 600 volts at 150 mills., the exciter runs off a 400 volt pack. The final amplifiers are all link coupled to an aerial coupling unit and thence to the antenna.

Antenna System.—This is a vertical 33' centre-fed job with 34' feeders about 4½" spacing; the bottom of the antenna is 8' 9" off ground. The antenna is constructed of ¾" steel furniture tubing which is mounted on a wooden pole with stand-off insulators, the feed line is 7/18 stranded copper wire.

The Receiver used is a double conversion super, home-made which uses a first conversion frequency of around 1600 Kc. and this is link coupled to the second channel which is 455 Kc. The second channel has a crystal controlled HFO to guard against any frequency drift. The first or "front end" uses 9001 R.F. and 6K8 mixer using its own oscillator, the two channels are connected by means of a low impedance co-ax line. The antenna used on the receiver is an old 66' flat top zepp about 17' high.

Telephony Arrangements.—A system of grid modulation is used here and comprises as a unit, 6SJ7, 6AC7 pre-amps., with 6V6G modulators. This feeds into the grid bias supply to the final amplifiers. NOTE.—All final stages in the transmitter are biased to Class C conditions, and on CW the last driver stage is keyed, the final is never keyed directly. Mike is a home-made velocity type.

filament transformer then all the secondaries including the high voltage secondary can be removed and there will be ample space for a number of filament windings.

After rewinding is completed, the laminations are re-inserted in the coils and the terminal board refined. The complete job of altering a single winding should be finished in less than two hours.

TWIN BIAS SUPPLY A simple adaptation which will be of interest to Amateurs is the conversion of a receiver type transformer to a combined filament transformer and twin bias supply. In this case, after the transformer has been dismantled, the filament windings and all but 200 volts half wave of the high voltage secondary are removed. The required filament windings are then rewound and the combined filament transformer and bias set is wired as shown in Fig. 1.

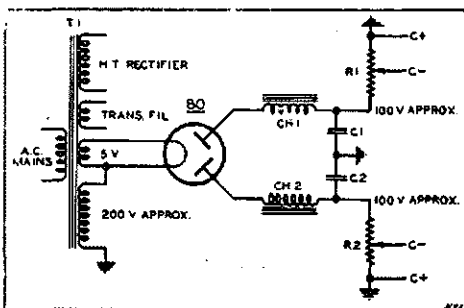


Fig. 1.

T1—Altered Power Transformer (see text).

CH1, CH2—30 Henry Filter Choke.

R1, R2—15,000 ohms Voltage Divider.

C1, C2—8 uF. Electrolytics.

The result is a filament supply plus two bias supplies for separate stages of the transmitter, the bias being applied automatically when the filaments are switched on.

The two bias supplies are virtually independent. The only common part of each circuit is the 200 volt secondary which has a low resistance (generally less than 100 ohms) and the rectifier prevents rising grid current of the output stage "backing up" the voltage to the intermediate sage.

For tubes requiring bias greater than 100 volts, which will be obtained from a 200 volt secondary with choke input, it will be necessary either to increase this winding or use condenser input.

Very often when planning the construction of Amateur gear it is found that the filament or power transformer on hand has not the required filament windings for the tubes to be used. It is, however, a relatively simple matter to alter these windings in the case of most transformers and following are some suggestions for these alterations.

Most small transformers of the broadcast receiver type have the primary winding next to the core, then over this is wound the high voltage secondary and on top of this again, on the outside, are wound the filament coils. To alter the windings it is first necessary to remove the laminations. The clamping bolts are first removed and by springing up the outside laminations it will be seen that each of these has been pushed into the core alternately from either end. It will be necessary to grip the first few laminations with the pliers to remove them, but after these are withdrawn the remainder are loose and can be easily slipped out, leaving only the windings with the terminal board attached. This board, and the outside wrapping of the coils, can then be removed; care being taken to correctly label the coil ends.

The number of turns on the outside winding, which is then exposed, can be counted and the number of turns per volt on the transformer thus found. For example if a five-volt winding is found to have 27 turns, the turns per volt are $27 \div 5 = 5.4$, and if it is required to add a four-volt winding, then it is 4×5.4 , say 22 turns will be required.

When adding or rewinding, the system of the existing windings should be followed. Transformer paper should be used between each layer of the winding and each winding should be insulated from adjacent windings with a layer of tape.

A rectifier filament winding should be insulated with additional layers of tape according to the voltage to be applied to it. Cotton covered enamel wire of the following sizes is recommended for Amateur transformers:—

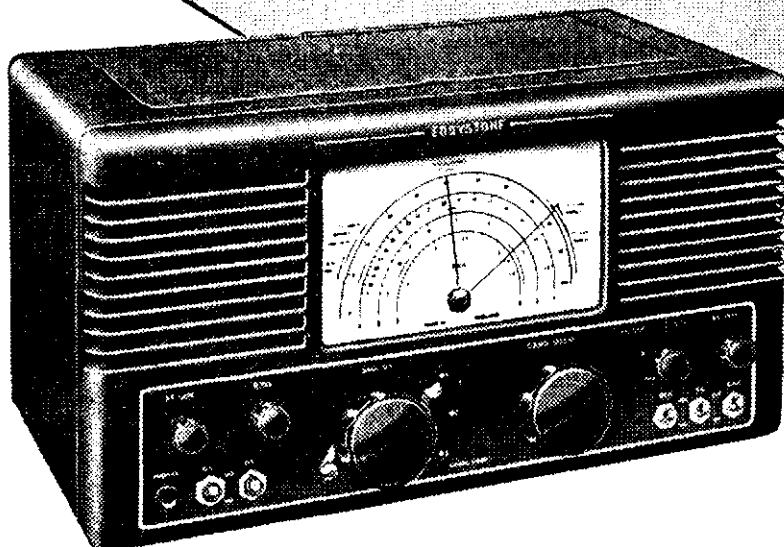
Current up to 1 amp.	—22 s.w.g.
" " " 2 "	20 "
" " " 3.5 "	18 "
" " " 6 "	16 "

Care must be taken that the finished size of the coils are not increased so much as to make them too large to fit the laminations. In many cases it will be possible to add one additional filament winding to the transformer without removing any existing windings. If the transformer is required only as a

* Member of South Australian Division.

~~£72~~

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AMATEUR BANDS
COMMUNICATIONS
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These are just some of the features which have won outstanding popularity for the Eddystone 640

1. Receiver has been designed primarily for Amateur Communication purposes, tuning range from 31 Mc/s to 1.7 Mc/s.

2. Designed to operate from Standard AC Mains with Inputs of 110 volts, 200/240 volts 40/60 cycles as well as from a 6 volt battery by use of a vibrator unit.

3. Inclusive all valves, the "640" is a 9-valve job with one tuned RF stage, FC, two IF stages, detector-AVC-audio, 2nd audio output, noise limiter. BFO and rectifier. The valves used, in that order are EF39, 6K8, EF39, EF39 6Q7, 6V6, EB34, and 6X5. These are all international octal based on the Mullard or Brimar versions and therefore easily replaceable.

4. TUNING RANGE—(1) 31 to 12.5 Mc/s (2) 12.5 to 5 Mc/s. (3) 5 to 1.7 Mc/s.

5. TUNING. An electrical band-spread arrangement is used for this purpose. Fly-wheel control is utilised on the band-spread condenser drive. The scale is clearly marked with all amateur bands, and is so arranged to enable accurate re-setting to a spot frequency.

6. I.F. FREQUENCY—1600 Kc/s.

7. CRYSTAL FILTER is vacuum mounted to provide a high degree of stability. Phasing control and "in/out" switch are brought out to the front panel.

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9. OUTPUT. Audio frequency output exceeds 3.5 watts.

10. "S" METER. A socket is provided for an external "S" Meter.

A substantial reduction on the overseas price of the "640" has brought the Australian price tumbling from £72 to £56/10/- (plus sales tax). Here is the grand opportunity many of you "Hams" have hoped for — the chance to obtain, at a very moderate price, the most outstanding distance-getter in the world today! Experienced DX men agree that the 640 has a signal to noise ratio superior to anything on the world's market. Don't waste time and money attempting to modify obsolete sets — take advantage of this startling price reduction to enjoy, right from the start, the thrilling unbeatable DX performance of the 640.

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W.I.A. 1949 National Field Day Contest

GENERAL RULES

1. The Wireless Institute of Australia's National Field Day Contest will be held over the week-end of 29th and 30th January, 1949, and will commence at 1500 hours E.A.S.T. Saturday 29th and continue through until Sunday 30th at 2359 hours.

2. The Contest is limited to portable stations operating within the Commonwealth and its mandated Territories.

3. A portable station, for the purpose of the Field Day, is defined as one whose power is not obtained from either private or public mains, shall not be located closer than 5 miles to the home location of the operators, and shall not be situated in any occupied dwelling.

4. No apparatus is to be set up or erected on the site of the portable station earlier than six hours prior to the commencement of the Contest. A station may be moved from one site to another, within the same State during the period of the Contest.

5. More than one operator may be used in the operation of the portable station, providing that all operators are licenced Amateurs.

6. Operation may be on any of the recognised Amateur Bands, and more than one transmitter may be used, providing that only one transmitter is used at any one time.

7. When calling, portable stations are to use the letters "W.I.A. N.F.D." frequently to indicate that they are portable stations. Attention is directed to the requirements for portable stations in the P.M.G.'s Handbook.

8. Sections.—The Contest is divided into three sections; namely, Open, C.W., and Phone. The Open section shall consist of both C.W. and Phone operation. Participants may enter for all sections, providing a separate log is submitted in each case.

9. Logs.—Logs must reach the Divisional Headquarters not later than 20th February, 1949, and decisions of the Federal Executive in all matters relating to the Contest will be final.

10. The operator(s) will choose the most convenient consecutive 24 hours of operation from the total operating time of 33 hours, and submit this 24 hours period as their log for the Field Day. Any lesser period than the 24 hours may be operated.

11. Logs must show the location of the portable, name and call signs of the operators in the party, a description of the transmitter(s), receiver(s), antenna(e), and the power supplies used for the transmitters and receivers. The power input to the final stage with the antenna connected (which must not exceed 50 watts) will also be shown in the log.

12. Log entries are to show, in the following order: date, time, station

worked, Amateur band used, report sent, report received, contact points claimed, and bonus points claimed. A summary at the end of the log will facilitate checking.

13. The completed log will be signed by the operators, with a statement that the rules of the Field Day have been adhered to.

14. Scoring.—For the purposes of the Field Day, the following will constitute separate districts:—New South Wales (VK2), Victoria (VK3), Queensland (VK4), South Australia (VK5), Western Australia (VK6), Tasmania (VK7), Northern Territory (VK5), and Mandated Territories (VK9).

15. A complete exchange of reports is necessary before any points can be claimed.

16. Points will be awarded as follows:

- (a) For contacts with a fixed station within the Commonwealth, outside the competitor's State—1 pt.
- (b) For contacts with portable stations within the same State—2 pts.
- (c) For contacts with stations in Asia, North America and Oceania (outside the Commonwealth)—3 pts.
- (d) For contacts with stations in Europe—5 pts.
- (e) For contacts with stations in Africa and South America—7 pts.
- (f) For contacts with other portable stations in the Contest outside the competitor's State—10 pts.
- (g) For every two-way contacts using frequency modulation, add to the above contacts 3 pts.
- (h) A bonus for each Continent worked on each band, add to the final score 25 pts.
- (i) A special bonus for each Interstate or Overseas contact on, or above, 50 Mc., add to the final score 50 pts.

17. Awards.—A suitable Certificate will be awarded to the sectional winners in each district, and to the outright winners in each section; namely, Open, Phone, and C.W. Outright winners will not be eligible for the State award.

REGRETS FROM NORFOLK ISLAND

In a letter from Noel Roberts (VK 9NR) to the Contest Committee, Noel regrets that he was unable to assist more mainland stations in the Remembrance Day Contest. He is now located at the Government Aerodrome, Norfolk Island. Following is a brief extract from his letter:—

"When first getting going on the air from over here, I stumbled in on the very last few minutes of the Remembrance Day Contest, and had the pleasure of two QSOs with VK2RA and VK2PA.

"It was tough that I only got the rig going over the last ten minutes of the

Contest, as I imagine Norfolk Island would have been quite a useful contact for the chaps over on the mainland.

"Transmitter was just a 6L6 tritron on 7 Mc. running a wheezing 15 watts. Am still very seldom on the air, as we have no regular mains supply here, and have to use batteries for operating. However I am assembling together some gear which should allow me to operate more often in the near future."

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Rotatable Beams On A Windmill Tower

BY A. H. LLEWELLYN*, VK2AH

The illustration shows the 50 and 144 Mc. beams at VK2AH, which are erected upon a 30 feet steel tower and rotatable through $360^\circ \pm 20^\circ$.

The tower was obtained from Messrs. Sidney Williams & Co., windmill tower manufacturers, of Dulwich Hill, Sydney, and is a light gauge 30 feet structure. This was erected by building up from the base, a method which calls for no heavy lifting, and is also recommended by the manufacturers. This can be done quite quickly and is comparatively easy. All erection details are supplied with the tower.

From the illustration can be seen a 1" steel plate mounted about 3 feet from the apex of the tower with the turning mechanism and reduction gearing mounted upon it. The reduction drive, of course, depends upon the motor used and a large variety of these are available. Since the writer considers anything over 24 volts dangerous when above ground this distance "up a steel tower," an IFF motor generator was used by simply lifting the generator brushes. It was found that 12 volts will operate this and give 34 turns per minute with good starting torque, when a gear ratio of 750 to 1 is used. With this particular motor, being rated at 18 volts, no ball-races are used because some friction is desirable to prevent oscillation due to wind. The tubing is steel conduit, screwed.

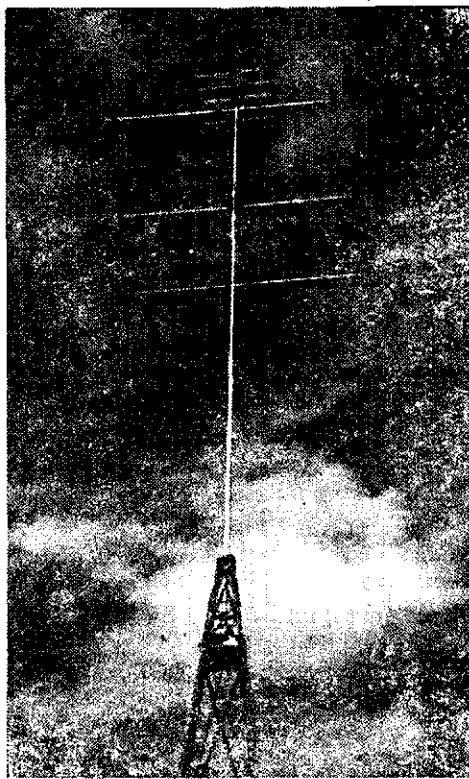
The indicator is mechanically operated and consists of a fine flexible steel cable, brought down one leg of the tower in pulleys and around a drum behind the azimuthal map and pointer, then spring loaded. This is very successful, inexpensive, and fool-proof.

When this photograph was taken no other beams were ready for erection. However, two more are being made and tested, one for 28 Mc. and one for 21 Mc. The latter being installed just above the apex of the tower.

One very interesting feature, which has proved itself, is the telescopic erection method. By simply releasing a clamp the tube comes down the inside of the tower. As each beam reaches the "apex" it is unclamped, the cable disconnected, and left straddled across the top of the tower. Since these towers are strong, two can work easily at the top and fitting the beams in this manner allows easy adjustment.

Co-axial cable is used throughout and was found to be very satisfactory. This is allowed to twist over the greatest possible length, making sure the connections do not have to "take it." Balance to unbalance transformers are used. It has been found, and proved, that "wide-spaced" beams are infinitely bet-

ter for Amateur purposes when impedance matching devices suitable to these frequencies are not available. Wide-spaced antennae are broader, and do give excellent gain with some reception possible from behind, a useful feature indeed. The close-spaced arrays, if tuned to a particular crystal and carefully adjusted, will serve splendidly for transmitting on that frequency but quickly lose their characteristics "off" frequency, we have found.



Height to the 144 Mc. beam is 57', to the 51 Mc. beam 48', and to the apex of tower 33', elements are of $\frac{3}{8}$ " aluminium tubing. The elements supporting the 51 Mc. beam are of $\frac{5}{8}$ " steel, and feed with 50 and 75 ohm co-axial cable.

The antennae shown are for operation upon 145 Mc. and 51 Mc. They are highly directional and give good gain. The 145 Mc. is close-spaced at present and is used for transmitting mainly. The elements are of $\frac{3}{8}$ " aluminium tubing.

It is important to note the difference between water pipe and steel tubing. Water pipe is very heavy and made of "wrought-iron." Its own weight usually wrecks it. This tubing is not suitable unless very much over-size. Maleable steel tubing is vastly superior and can be obtained in screwed conduit very cheaply. Dural, of course, would be ideal.

The vertical tube support consists of three different size tubes telescoping into each other, of 2", $1\frac{1}{2}$ " and $1\frac{1}{4}$ " outside diameter respectively. The 2" and $1\frac{1}{2}$ " diameter tubes require bushing to make them fit snugly. The diameter tubes used in this installation are inclined to sway a little, and a more rigid job can be made by using slightly larger diameter.

It is important to have very little "back-lash" in the drive, as this gives "jerky" operation. A most important point to observe is the "offset" drive feature, which leaves the hollow tube for co-axial cables. For those who have feathering motors, it is advisable to use a cycle sprocket ratio of 4 to 1 up, particularly if VHF work is contemplated seriously.

This tower will support half a ton of weight in a gale, and since the beams do not offer wind resistance comparable to an 8' diameter windmill, your chances of losing it are negligible. This one has been up two years now, and the beams subjected to high winds. Although there is considerable movement it is in perfect condition.

The cost, complete with two beams, has been surprisingly low and could not be obtained as cheaply any other way, all factors considered. It is hoped that the writer's experiences along these lines will be of benefit to others interested in a similar structure.

VARIABLE FREQUENCY CRYSTAL CONTROL

(Continued from Page 7)

coupled to the anode circuit. The latter circuit in the anode of the crystal oscillator should not be operated directly at resonance, but tuned to the high frequency side to present a positive reactance at the operating frequency. Circuit constants for operation with 80 metre crystals are given in the text accompanying Fig. 3.

With reactance modulators capable of control over a wide and linear range it should be possible to employ this form of variable frequency crystal control for experimental narrow band frequency modulation. It is an interesting prospect, and as Shakespeare says, "A consummation devoutly to be wished;" however, space limitations prevent an immediate treatment of this aspect so be patient for a while until the necessary information is prepared.

For those experimenters who have more than a "bread and butter" interest in crystal oscillator control, attention is drawn to an excellent article appearing in Volume 94, Part IIIa No. 12-1947 issue of the Journal of the Institution of Electrical Engineers dealing with "Variable Frequency Crystal Oscillators" by Stanesby and Fryer.

* 425 Blaxland Road, Ryde, N.S.W.

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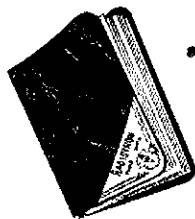
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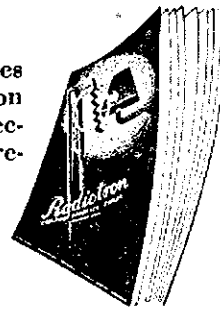
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QUESTIONS AND ANSWERS

If you have a question send it in to "Q. & A.," "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.I., and if suitable it will be published in this column. If you can answer any of the published queries you are invited to send same to the above address. All such replies will be forwarded to the questioner (if he has sent a stamped addressed envelope of suitable dimensions) and also a summary printed.

A.5.—From VK3YW: G Band—190 to 210 Mc. I Band—157 to 187 Mc.

A.7.—From A.W. Valve Co.: "The gain of a sharp cut off r.f. amplifier is preferably controlled by variation of grid bias rather than screen voltage. This will result in more linear control and less cross modulation on strong input signals."

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on Thursday, 20th January, 1949. Lectures are held on Monday and Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with the Secretary W.I.A. Victorian Division, 191 Queen Street, Melbourne (Phone FJ 6997 from 9 a.m. to 5 p.m.), or the Class Manager on either of the above evenings.

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BOOK REVIEWS

VALVE TECHNIQUE and V.H.F. TECHNIQUE

R.S.G.B. Publications

These two further booklets in the R.S.G.B. "Technique" series are first class. They should join Microwave Technique on your bookshelf as soon as possible.

Valve Technique "presents in as simple a manner as practicable the calculations associated with the application of thermionic valves. It is hoped thereby that the reader will find it possible to utilise the information published by the Valve Manufacturers to the best advantage. The simplified methods described are sufficiently accurate to obtain optimum results, bearing in mind the usual tolerances of component values and the normal spread of valve characteristics."

Subjects covered include voltage amplifiers, a.f. power amplifiers, r.f. power amplifiers, frequency multipliers, oscillators, detectors, frequency changers, power rectifiers, valve noise, and v.h.f. valves.

V.H.F. Technique describes the generation, propagation, and reception of frequencies between 30 and 300 Mc., and is full of information of practical interest to v.h.f. workers. Of particular interest is the information on English type valves and components and their methods of use, a lot of which is hard to find elsewhere. Quite a number of complete circuits of transmitters and receivers are given together with hints on practical construction.—A.K.H.

100 Kc. CRYSTAL FROM "LORAN" EQUIPMENT

Fig. 1 is a circuit recommended by R.C.A. for use with the 100 Kc. crystal, Type VC5. It will undoubtedly interest any Ham who purchased "Loran" equipment through Disposals channels.

The crystal has a low temperature coefficient being "DT" cut. They are pressure mounted between centrally located pins and for ordinary purposes do not need an oven. The crystal itself is silver plated to provide the two electrodes.

At 100 Kc. the peak voltage across the crystal should not exceed 100 volts or 70 volts r.m.s.—J. M. COULTER.

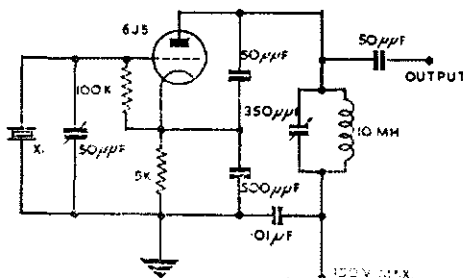


Fig. 1.

Note.—The furnishing of this information does not imply any patent license for other than Amateur or experimental use.—R.C.A.

UNWANTED RECTIFICATION

What would you do if your deaf aid started to say "Hello test, hello test, hello," with no one in the room bar yourself? The poor guy who heard it got properly windy, but as there was a Ham next door, naturally he got the blame and strangely enough, correctly. Turned out he was testing the 225 Mc. section of a No. 19 set and some rectification in the deaf aid did the rest.

Talking about ghostly voices, 3BD's XYL was startled to hear her OM's voice coming down the chimney! Tests showed that this effect only occurred when 3BD was transmitting on a certain frequency.

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Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Dick Dowe (VK2RP), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor: H. F. Treharne, VK2BM, 5 Waimea St., Burwood.

Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: G. J. Russell, VK2QA, 116 Bogan St., Nynpan; South Coast and Tablelands: R. H. Rayner, VK2DO, 42 Pettit St., Yass; Southern: E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury. Western Suburbs: A. C. Pearce, VK2AHB, 45 Harrabrook Ave., Five Docks. Eastern Suburbs: H. Kerr, VK2AX, No. 4 Flat, 144 Hewlett St., Bronte. North Sydney: L. D. Cuffe, VK2AM, 77 Military Rd., Mosman. St. George: J. A. Ackerman, VK2ALG, 32 Park Rd., Carlton. South Sydney: V. H. Wilson, VK2VW, Cr. Wilson St. and Marine Pde., Maroubra.

VICTORIA

Secretary.—C. C. Quin, VK3WQ. Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.1.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; Western: C. C. Waring, VK3YV, 12 Skene St., Stawell; South Western: B. Secrine, VK3BI, 17a Raglan Street North, Ballarat; North Eastern: J. A. Miller, VK3ABG, "Erinvale," Avenel; Far North-Western Zone: Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; Eastern Zone: J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 638J, G.P.O. Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor: F. H. Shannon, VK4SN, Minden, via Rosewood.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Place.—Padbury House, Cnr. St. George's Ter. and King St., Perth.

Meeting Night.—Watch the Monthly Bulletin.

Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7196 Kc. and 2000 hours EST, 50.4 Mc. No frequency checks available from VK2WI. Intra-State working frequency, 7175 Kc.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0930 hours EST simultaneously on 3750 Kc., 7190 Kc., 14,342 Kc., 52.4 Mc. and 144,138 Mc. Frequency checks are given two nightly weekly, and the times are announced during Sunday broadcasts. 7010 Kc. channel is used from 1000 to 1030 hours each Sunday as VK4 query service to 4WI.

VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

FEDERAL

DX C.C. LISTING

With this issue, we intend to list not only the Countries confirmed for DX C.C. but also the Zones confirmed by the members of the DX C.C. These figures have not been checked by the Awards Committee but are only included as a matter of interest. Would those members who have not already done so, please drop a line to the Federal Secretary giving total Zones worked and confirmed.

PHONE

Nil.

C.W.

	Zones	Countries
VK3CN (3)	125
VK3BZ (14)	38 118
VK3EK (10)	38 117
VK3VW (12)	39 117
VK4DA (20)	38 112
VK2EO (7)	103
VK2QL (13)	101
VK4HR (22)	100

OPEN

	Zones	Countries
VK3BZ (5)	38 143
VK3KX (1)	136
VK2DI (2)	135
VK3HG (4)	131
VK3JE (18)	39 123
VK4HR (9)	118
VK3MC (6)	117
VK6RU (11)	116
VK6KW (19)	108
VK2YL (17)	106
VK4EL (18)	104
VK2ACX (8)	100
VK2AHA (15)	100
VK2ADT (21)	100

Figures in parenthesis indicate membership number to DX C.C.

NARROW BAND FREQUENCY MODULATION

It would be appreciated by F.E. if anyone having written or practical proof of the b.c.l.-limiting capabilities of this system would send same to the Federal Secretary at the earliest.

SILENT KEYS

Arthur J. E. Shields, VK3GP, died in October at the Repatriation Hospital, Heidelberg, Victoria, after a long illness. Born in England, he served during the 1914-18 War in the A.I.F. He was on the air from 1930 to 1939 and was very active on phone and o.w. on 7 and 14 Mc. Owing to lack of a suitable QTH and, in the latter stages, illness, he was not active post-war. A likeable personality, we regret his passing.

FREQUENCY ALLOCATIONS

Listed below are the frequencies at present available for Australian Amateurs, and also types of emission that may be used:—

3.5 to 3.8 Mc.	—A1, A3.
7.0 to 7.2 Mc.	—A1, A3.
14.0 to 14.4 Mc.	—A1, A3.
26.96 to 27.23 Mc.	—A1, A3, FM.
28.0 to 30.0 Mc.	—A1, A3.
50.0 to 54.0 Mc.	—A1, A2, A3, FM.
144 to 148 Mc.	—A0 A1, A2, A3, FM, Pulse.
288 to 296 Mc.	—A0, A1, A2, A3, FM, Pulse.
576 to 585 Mc.	—A0, A1, A2, A3, FM, Pulse.
1345 to 1425 Mc.	—A0, A1, A2, A3, FM, Pulse.
2300 to 2450 Mc.	—A0, A1, A2, A3, FM, Pulse.
5650 to 5850 Mc.	—A0, A1, A2, A3, FM, Pulse.
10000 to 10500 Mc.	—A0, A1, A2, A3, FM, Pulse.
21000 to 22:00 Mc.	—A0, A1, A2, A3, FM, Pulse.
30000 and higher Mc.	—A0, A1, A2, A3, FM, Pulse.

NATIONAL FIELD DAY

Elsewhere in this issue appears the rules for the 1949 National Field Day Contest. The first post-war N.F.D. held early this year was a very poor effort, and it is expected that all Divisions will encourage their members to participate in this Contest.

This was a very popular Contest before the war and gives everyone an opportunity to try out the efficiency of their portable gear.

The v.h.f. gang are catered for so that this Contest applies equally well to allcomers. If you read last month's Editorial and want to try that rig, come out to the N.F.D. on the 29th and 30th January and help make this Contest a success. See you at the N.F.D.!!

1949 FEDERAL CONVENTION

The 1949 Federal Convention will be held sometime in April in the New Year, and as the Divisions are now collecting together matter for the Agenda, this is your opportunity to have your say. Don't hesitate to bring to the notice of your Council any matter that you consider needs attention at the Convention—do it now.

It is only by your individual interest in the administration of the Institute and its affairs that Conventions are useful and fruitful. Your problem is our problem so tell us about it.

COMMERCIAL STATION INTERFERENCE

It cannot be stressed too often the interference that is being caused by commercial stations operating in our limited bands. Part of our Editorial last month devoted space to this subject, but don't let the matter rest there—be actively interested enough to report any such off-frequency commercials as you may hear in our bands.

We must have the necessary reports before we can take the matter to the proper authorities, so write that letter now to your Council or the Federal Secretary.

F.I.A.T.S.

As previously mentioned, comments are invited on the ionospheric charts that appeared for the first time last month. Your comments and confirmation of the predictions given will be of great assistance to Dr. Green to whom we are indebted for this service.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

MP4AB is the new call sign of VS9GT. He is still at Trucial Oman, with address: R.A.F. Station, Sharjah, Persian Gulf.

An extremely ornamental and artistic card is that of ZS5JZ, Elizabeth Jordan, of Pietermaritzburg, South Africa. "Bee," as she gives her personal sign, decorates the blank spaces on her card with hand paintings of local flora, making the finished card extremely attractive.

A national society has been formed in Yugoslavia. All communications and cards for YU or YT Iams should be forwarded to the address of the Society which is Postbox 180, Ljubljana.

Mike Boyce, G2CMU, of Manchester, Lancashire, England, writes giving a description of his antenna

system and requests publication of the details as he says many VKs have requested same. There appears to be nothing new or ingenious about his antenna system which is a standard unfolded dipole fed in the centre with 40 feet of 300 ohm ribbon feeder. Apparently any outstanding success Mike has obtained on 14 Mc. with the antenna is due to his location. Legs of the dipole are 33 feet.

The A.R.R.L. again points out via the I.A.R.U. that a private enterprise calling itself the American QSL Bureau, with a Newark, New Jersey, address, has no connection whatsoever with the A.R.R.L. and that all QSLs for United States and Canadian Amateurs should be sent via the A.R.R.L. QSL Bureau. To route them in any other way may result in unnecessary delay and will require duplication of effort on the part of W/VE Amateurs in receiving their cards. Full addresses of the W/VE district QSL Managers appears in every alternate issue of "QST."

Due to the irregularity and delay on surface mails between Australia and U.S.A., the volume of cards has been greatly reduced during September and October. Surface mails between the countries mentioned are taking from two to three months to reach their destinations. Obviously the period of reduced activity is only of a temporary nature and a great deal of congestion will occur when these mails ultimately arrive.

Another ornate card is that of George Chandler, J4AFA ex-VK3AC. George is returning to Australia in November and desires all wall-paper for J4AFA to be sent to the QTH of VK3AC.

Anyone who worked EA3YK will probably get a confirmation from EA3BV. Due to some skulduggery regarding licenses, Ferrando is using many differing call signs. He desires all QSLs to be sent direct only to 323 Diagonal, Barcelona, Spain.

Glad to hear news from old friend Jack Elliott, ZL3CO, who has been on the retired list for the past four years and enjoying it immensely.

Dan Wilkinson, ZL2AB, well known to VKs recently celebrated his silver jubilee in Ham Radio. Dan has been a power in the Ham land during the quarter century of activity. His jubilee was celebrated in a fitting manner as an account in "Break In" will attest.

Best wishes to all for 1948 and for a peaceful, prosperous and happy 1949 is my closing wish for this year.

NEW SOUTH WALES

A full meeting of the Division enjoyed the bright and instructive lecture on "Automatic Transmitter/Receiver Control" given by Mr. R. A. Priddle (VK2RA) in Science House on the 22nd of October, 1948. Mr. Priddle dealt with a subject that was of great importance to Hams generally and we join him in the hope that his lecture would result in better control of transmitters and greater comfort for all concerned. Such eminently practical talks as these are extremely valuable to the rank and file and are always very welcome.

The remainder of the meeting was thrown open to members to "air their grievances" or make suggestions for the good of members and the Ham fraternity in general. A three minute limit was put on speeches and the result was a very animated discussion that was appreciated by all.

Mr. Olive Hutcheson VK2YP was appointed Social Officer to the Council and has already booked a hall for a social evening on the 3rd of December.

Mr. Wal Nye VK2XU found it necessary to resign from the position of Secretary for business reasons and his resignation was accepted with sincere regret as he has been a tower of strength to the Council. Mr. Dick Dowe VK2RP is the new Secretary.

WESTERN SUBURBS ACTIVITIES

2AHU lost a good mast in a recent breeze, busy with cement at present, but will be back on 20 at any time. 2DW putting a fine signal out on 14 Mc. these days, works his quota of DX under most conditions. Now has modulator troubles beaten. 2QC heard frequently chasing the DX on 14 Mc., doing a good job. 2ALO another 20 metre addict. Has had a lot of experience with various types of beams. 2JT, despite his interest in c.w., Charlie is to be heard on 20 metre phone now and then. Is worried by bad electrical QRN from local neon. 2KA, a recent addition to the ranks here, is an ex-G recently settled here; may be heard from Strathfield soon. 2OQ would like to erect his beam, but owing to cramped location must make the best of a bad job, but his rig does a fine job despite the location. 2IC another who is getting his share of the good stuff, has a 2 element beam on the job. 2PX operates frequently in the early a.m. on 20 metre band, works the G boys like nobody's business. 2MH works 28 Mc. exclusively, new beam proving a great success by all reports.

2AGU is temporarily located at Tares and has been heard on 7 Mc. That burnt spot on the 20 metre band is now being given rest and treatment. 2SW puts out good quality phone on 40, keep it up Stan. 2CL heard testing on 7 Mc. phone while waiting for the DX to appear. 2TD has plans for mobile marine operation; one sailor who will QSL. 2AIB worked CX6AK and VQ8AY on 7 Mc. e.w. Can't wait for the 11 year cycle peak. 2WB works them one after another on 20 metre phone. 2GR is a dyed in the wool Ham and enthusiastic as ever, currently operates on 20. 2NM has been achieving good results with 144 Mc. mobile using an SCR522. 2BF now has his quadricube conversion super on the bench, good luck Alan!

In this zone we have the Experimental Radio Society of N.S.W. which meets in Greenwood Hall, Liverpool Road, Enfield. It has some 80 members, most of whom are active Amateurs, and conducts regular meetings at the above address on alternate Thursdays. The meeting nights for December being on the 9th and 23rd of the month, while the dates for January are the 6th and 20th. New club rooms have been recently acquired, and transmitters, which will be operated under the club call of VK2LR, are being installed to enable operation on, firstly 7 and 50 Mc., and later on other bands. Regular lectures and discussions are a feature of the meetings to which prospective members and visitors are assured of a warm welcome. Future activities are being planned, a year full of interest being assured to members.

EASTERN SUBURBS ZONE

2FJ building gear for 14 Mc. and hopes for the best from his poor location. 2AHQ has finished his re-built 100 watt phone/c.w., built very small to fit his flat. 2KI and XYL 2CL active on 20 metre phone. 2ALW still using indoor antenna, and able to work a little DX. 2BC very keen on new antenna and c.r.o. 2MB busy building gear for Waverley Club 2BV; rig should soon be on the air. 2AJQ QRT for a week, confined to sick bed, OK again and pounding brass. 2SA not heard for three months. Did the phone blow up on you o.m.? 2DV has 1.b. class B mod. and 813 p.a. 2CF interested in recordings, not heard much on the air. 2KH heard testing mod. transformer.

2MY reports hearing pirate using the call 2PB, three signals come somewhere from Eastern Suburbs, any information would be appreciated. 2HH active again on 20 metre phone. 2CE active on 10 and 20 metre phone.

Suggested by party that Eastern Suburbs Hams have a get-together prior to Xmas, if interested please phone Dave Evans FW 4148. There are 63 licensed Hams in this zone, less than half of them being active, your scribe finds it hard to get around these chaps. I would be pleased to hear from the chaps in Handwick, Rose Bay, Dover Heights. I'm sure you fellows have quite a lot of dupe. Ring FW 7053 or look for 2AX on 7 Mc.

NORTH SYDNEY ZONE

By the time these notes appear in print, it will be about high time to wish all you DX kings, v.h.f. mystics, and plain natters in this good old world of Amateur Radio, all the best in the way of a Merry Xmas and a Bright and Happy New Year. I guess most of us will have the bogey of another war hanging over our shoulders for a while yet, but by the same token it's a darn pity that some of the people who make this world's politics aren't liams. We make more friends in countries all over the world, probably than anyone else, and it isn't hard, is it?

2SB is among us again, having rebuilt the rig with somewhat increased power, and is battling along on 20. 2IT feeling fine as a result of getting his AR7 perking at last, and is now dragging them in on 20—at least the receiver is, but he didn't say if he was working them! 2XI is now a member of the W.I.A., but unfortunately QRT at the moment, due to Uni. exams. 2JY, one of the old old-timers, has shown up in a new QTH at Mona Vale—very nice, being able to plunge the bottles in the surf to cool them off! 2EL the proud possessor of a BC 348, which now allows him to hear the QRM louder than anyone else.

2AND is another mad with the exams—accountancy, though, in his case. Manages to sneak in the odd contact now and again to keep himself sane. 2AMB working them merrily on 20, but would like one of those super-duper Yank receivers to help him get among the rare ones. 2YM has departed for the realms of the v.h.f. gang, joining the ear-bashers on 144. 2MQ has been busy building a brace of beams, two three-element wide spaced arrays, spaced one half wave above the other and fed in phase for 144 Mc. Claims it's that good you can hear signals with headphones on the end of the feeder—he has a three element wide-spaced on 50 Mc., so is really in the business! 2ATK, of

Ryde, recently received his new call and expects to be diving madly into the 144 Mc. pool any time now.

Correction to last month—2ZN has been active on 50 Mc. for quite a long while, but after a couple of months' silence has appeared with "noo vlgger," fighting his way out doggedly from under that mass of VIS antennae. 2AH, another of the old-timers, perking away strongly on 50 and 144 with great success. 2TF in there pounding the brass on 14 Mc. after a long silence.

SOUTH SYDNEY ZONE

The main item of interest for this month is the appearance on the air of the Kingsford District Amateur Radio Club with the call sign of VK2AKC. The club operates on 7, 14, and 144 Mc. 2VA was unlucky to have his tower blown down but a new one is well under way. Several locals have been very active in various contests, particularly those on the v.h.f. bands; 2ABC, 2WJ, 2VW still fighting for local honours with 2WJ in front at the moment.

2ABO manages to work a bit of choice DX on 10 in his spare time. 2VW now operating on 288 Mc. as well as 28, 50, and 144 Mc. 2ABB has reappeared on 144 with a very nice signal and 5 element beam. 2UV active on 144 but should be on 20 and 40 soon. 2VW spent an anxious Saturday afternoon listening to three VKs having a three way on 50 Mc. and hoping they would listen on the band. I listened to you for an hour chaps. Managed to click with VK4XD later. 2AB still rebanding but should be on again soon. 2AC not heard for some time now, must be working overtime. 2ABU heard occasionally working some nice DX on 20 phone. 2VA put up a nice score in the VK-ZL contest and later heard in "CQ" contest with temporary antenna.

DX NOTES

As 2ACX is away on vacation he has asked me to write the notes for this month. Why he picked me I don't know!

During the month, most of the week-ends were taken up by the VK-ZL Contest. Most of the well-known VKs were active in the Contest with the best score apparently being obtained by 2RA. 2VA was heard consistently but maintains he wasn't flat out, whilst 2EU did not get started till the second week-end. 2QL was busy exchanging numbers although, I believe, not a competitor. 2DG put up the best known score, 91,834, for 14 Mc. c.w. only. 2ZH excuses his low score as due to poor antennae, so I'll use the same one.

The rare ones heard on the band during the Contest were OZ2AC in Monaco on c.w. and TASFAS on phone and c.w. on 20 metres. The best on 10 metres appeared to be FFSN and ZD2RGY. The remaining week-end was taken up by the phone section of the "CQ" Contest. Most sought after stations were ZC1GL, ZC6AY, ARSBM, 4X4AA and 4X4AD. No this is not a misprint, both the latter stations are located in the newly declared state of Israel. My guess is that this country will soon appear on the official list. So much for Contests.

2XC tells me that cards are in from LZ1XX and EZ4X for QSOs as far back as 1946. The first should count for the DX C.C., but as the latter bears no information as to QTH, no credit could be allowed. Other cards coming through are FO8AA, VP1AA and ZK2AA, also a batch from TF.

In VK2 40 metres has been no good for DX due to QRN during the most of the month. A few Wa and Pacific Islands, such as KH, KM and KY are heard in early evening, but there has been no sign of Europeans. On the other hand, 10 metres has been open most evenings for Europe with plenty of good contacts available on both phone and c.w. Rare ones on 10 were ARSAB and FFSN on phone, and GU4LI and FASII on c.w. Other European countries and Gs are too numerous to mention. Twenty metres has been comparatively dead, both in the afternoons and early evenings, but for the patient a few choice ones were to be had.

Best ones QSOd from this QTH were O3EA on Formosa, YJ1AA, KU6BA, and TASFAS all on phone. Those contacted on c.w. included UF6KAB, VPSJM, VP7NK, PJOX, and MP4AB (ex-VS8GT in Oman) on c.w. ZD1AA and ZD1PW were also contacted, but by the strength of ZD1AA's signal I doubt if he is in Sierra Leone. The other most sought after station was ZD2RGY who is heard consistently, but I think his only VK since VK2HZ is VK3BZ. Those who where lucky enough to work ZS2MI on Marion Island will be pleased to know that this has been grouped with Prince Edward Island for a new country. He has already QSLd.

To 2TG and others who have written to 2ACX regarding this column, he assures me that he'll reply upon his return and that any suitable ideas will be included.

From across the Tasman, ZL1HY is the first ZL to receive a W.A.Z., also the first ZL to send his cards to the R.S.G.B. for the Empire DX C.C. ZL2GX still needs one card for a W.A.Z. as does one VK2 that I know of!

If this column appears a bit small this month don't blame me, as I don't spend as much time on the air as does your normal scribe. So that's the lot chaps, and don't forget, if you have any DX news send it along to 2AOX at 12 Shackel Ave., Kingsgrove, together with your zone and country list for inclusion in this column. 73—2DI.

Honour Roll—Phone/C.W.

VK2DI	40	178
VK2ACX	40	166
VK2YL	40	160
VK2EO	40	150
VK2HZ	40	140
VK2QL	40	140*
VK2IG	38	141
VK2RA	38	128
VK2VN	37	127
VK2BA	37	109

* C.W. only.

SEASONS GREETINGS TO VK2 HAMS

N.S.W. Country Zone Officers: 2PA, 2FP, 2YL, 2QA, 2DU, and 2OJ extend Seasons Greetings to all Country Amateurs in N.S.W.

In 1949 they would like to hear all the country news for their notes; whether it be about beams, babies, or even bottles!

NORTH COAST AND TABLELANDS

2ADE worked 2ADT on 50 Mc. (2148 to 2205 on 27th October), nice work. 2AGM not very active in October due to caravan construction job; 20 metre beam not in action after damage from high winds. Caravanning is catching, 2SL also on the job and hopes to have the house on wheels finished for Xmas; been working Doc 2LH on 6 metres—Casino-Lismore link. 2LH remodelled to obtain more drive on 10 metres, has had number of Ham visitors recently. 2RK holidaying but using 3JK to Europe on 20 occasionally. 2ZY has receiver completed using commercial band switched front end, reports it is working well. 2FN getting lying hours up, not active but listens on the new 640.

2AJB very active on 40 using Clapp v.f.o., reports it is an improvement on others tried, knows all the tricks of the Clapp now. 2AEY has rig housed in rack now, using anti-b.c.i. antenna which is proving effective. 2NY getting the Europeans on 10 metres. 2DK powered by batts, gets good results on 40. 2SH still catching big ones, troubled with high line noise in dry weather. New call at Nambucca Heads is 2WY. 2ARR visited Port Macquarie during October, operated portable. 2ZS, 2ASF, 2DS, 2SH, 2ARR, and 2PA had a get-together and the usual good time was had by all.

NEWCASTLE

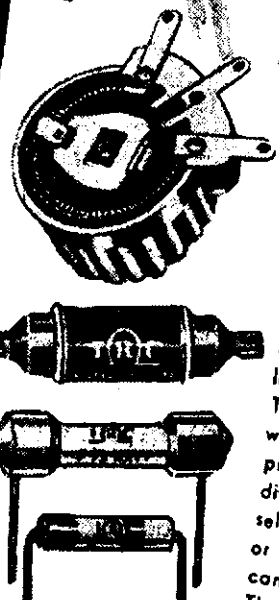
2BZ on 6 looking for v.h.f. contest contacts, has been on 10 also. 2PQ has three elements on 10 using 1 match and is now getting excellent DX results, has acquired a crystal mike. 2AFS active from daylight to dark to make up during the week-end time lost while away week days. 2ZC has built Clapp v.f.o. impressed with its simplicity and 100 per cent. reliability and stability. 2ADX now about to elevate the three elements, should be ready amongst it when these notes appear in print. 2AGD heard testing a quad antenna, shows great promise the bottom being only two feet above the ground. 2FX heard sometimes on 10, nice quality. 2AMM, 2CI, 2CW, 2ANG heard occasionally on 20 and 40 metres.

COALFIELDS AND LAKES

2YO making a comeback and has new receiver going. 2KF seems rather quiet for a change, perhaps a little busy. 2KZ busy on 6 metres but keeps an ear on 10 for Delaware on phone. 2IY has been very active on 10 metre phone with beam, but at the moment holidaying at the Lake. Old-timer 2JZ is staging a successful return judging from the amount of DX calling him. 2PZ also busy, don't waste that tower Chris—visitors from Sydney viewing it from a distance thought it was the local b.c. station. 2MK QRL also. 2ADT spends lots of time on 6 metres, nearing 100 countries on 10 metre phone, also made the DX C.C.—congrats. 2YL very quiet, may break out anytime but at the moment painting instead of DXing. 2AEZ can be heard punishing the DX on 20 most nights. 2OC and 2RU still on 6 metres and don't even come up to the lower frequencies for air. 2KR promises to supply notes from the Lakes area each month.



RIDING OUT THE STORM



Transformers are costly equipment—and there are few electrical units that have to take so many hard knocks. Heat or blizzard, rain or electric storm, they continue to function for light and power for all types of electricity undertakings. Resistors—costing little—give not only necessary applications for effective operation, but they are important contributions to the long and efficient life of the transformer.

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BX 2508

WESTERN ZONE

2ACU works mostly 40 phone in the evenings. 2YN at Bourke is trying the long wire to end all long wires, approx. four miles of it. Telephone mechanics in the district please note. 2XE has settled at Coonabarran (the place should be in Wales!) using ATR2A, the quality and signal is excellent. 2QA HAS worked 10 countries post-war! 2AMR has at last got the 20 metre beam working nicely, raised it to 55 feet. 211 concentrating on 20 metre DX. 2TG works them in all directions. 2JW has the high power rig going, sounds all right too. 2BT works everything on his 20 metre rotary.

2AIN a new Ham at Wyalong uses 10 watts with fairly good phone. 2AIK not heard during normal hours, some b.c.l. trouble. 2NS doing fine with his short long wire on 20, 141 countries up post-war with over 100 confirmed, new 20 metre rotary under construction. 2RN a new one in Bathurst almost ready to transmit. 2LY QRL at a school in Sydney and has an 813 on 6 metres. 2FI has been away on holidays. 2LZ busy in the v.h.f. contest on 50, 144 and 288 Mc. 2HZ is chasing DX. 148 post-war but a few short of the 100 confirmed still. 2EF not active. 2FH has been in trouble with his four elements wide-spaced on 20 from gales, some repairs necessary.

SOUTH COAST AND TABLELANDS

The Young gang have been active on 6 metres. 2TC been working 2GU at Canberra cross-band. 2TA visited the A.C.T. and was entertained by 2GU. 2VS, 2PI, and 2VT all active, the first two met personally and there is a possibility of another 6 metre signal from the zone shortly I hope. 2WA is active on 20, believe also there was a family addition, congrats. 2OW Tamora doing nicely with Class B linear 807s, best KJG on 40 phone. 2ASB heard on 40, nice signal, believe he is in Canberra. 2AIK has QRM in Wyalong now. 2AIN is on the latter band and has the honour of hearing the first European on 1" metres many years ago. 2WP from the 'Gong very active, nice signal and nice operating too!!

2TA has new 6 metre rig, getting S9 from Canberra and Tumut. Receiver is 6AG5 r.f., EF50 mixer, and 6C4 oscillator; has converter ahead of a BC348, new beam under way with propeller pitch motor for rotation. 2PN has modulation trouble, heard consistently in Young on 6. Yass reports—2ALS active on 40—2AKE Rye Park with a good sig from QRP. 2JQ had a visit from Bishop Ash who was introduced to Ham Radio in a 'Home to Lunch' session. 2OY been heard calling DX on 20. 2DO collected TF3EA and HPIBR on 20 and ZK1AS on 40 phone.

SOUTHERN ZONE

2EU has a rig on 7 Mc. c.w. but present antenna at 8 ft.—a bit low. 2ANQ going to VK3 Western Districts on holiday, will call on Hams en route. 2OJ pushed 10 metre beam out of reach (temporarily) of juniors and XYL, pruning and greater height to be attended to on return from holidays. 2BW working 6 metres but not heard in Albury as yet, hope to give you more co-operation soon o.m. 2QE and 2QD trying to find a way to get on the air; suggestion, build a rig!! Old Alburyite 3YD ex-2IG been heard on 20 chasing DX. Notes to 2OJ please each month.

VICTORIA

Members will regret to learn of the death of Ken Ridgway's father, Ken (3CR), many will remember, was the Technical Editor of this magazine for many years, but owing to pressure of business had to resign from such position.

EASTERN ZONE

News of the Zone's activities last month were limited owing to preparations being made for the zone's convention. 3WE has been hard at work but has found time to build up a v.f.o. using a 6A6 and by reports is very satisfactory; you will be able to dodge them now Bill, 3QZ is also QRL but hopes to get going on 60 Mc. again soon. 3ACL is a new Ham and made his first appearance in the hook-up with a very nice sig. Eric has also been doing some good work on the 50 Mc. band. Other newcomers to the 50 Mc. are 3LV and 3TH who spend quite a lot of time working and experimenting on this band. Reports they received from 3DI are very encouraging, keep the good work up fellows.

3PR has revamped his shack and has it looking very nice, Ron also has his a.c. gear ready for operation as soon as he gets the power on, which by reports, seems not too far off. He also has been doing some good work on 20 metres with his Type 3 Mark II. 3CI is still very keen on both 144 and 60 Mc. and has been doing well on both bands

when out portable. Sid also has a new rig on 80 metres which is working well. 3VL and 3US have been putting quite a lot of spare time in erecting new masts, also carrying out tests with beams at different heights and locations with very interesting results. 3BB, 3ALS, 3AKM, and 3ANC have not been in the hook-up for quite a while, but believe that 3BB is re-building. 3SS busy but finds time to build new gear for the shack which, by reports, is looking f.b. 3AEP has his Bendix transmitter and receiver going well now, can run near the 100 watts; looks like Kel will be like 3AHR and go for the DX in a big way. Oasie is kept busy on the farm these days.

The monthly meeting of the Mornington Peninsula Sub-Branch was held on 3th November and there were 16 members present. Minutes of the previous meeting were read and confirmed, banking arrangements were again deferred until next meeting. Sgt. Roberts was elected Vice-President for the Sub-Branch. 3RR moved that the appreciation of the meeting of the voluntary work done by 3ET, acting as Secretary, be placed on record; this was seconded by Sgt. Wright. It was unanimously decided on the motion of Sgt. Roberts that the name Mornington Peninsula Sub-Branch be adhered to in order that the branch may retain its identity. There was a very interesting lecture given by 3BQ on crystals and crystal grinding, and a crystal donated by 3BQ was raffled.

CHRISTMAS GREETINGS

As President of the Victorian Division I send greetings to all members and trust that a Happy Christmas will be with us all. Lots of DX and 73,

Bob Cunningham, VK3ML.

NORTH EASTERN ZONE

Your scribe has not had time to snoop on the bands this month, so little dope to go on. 3AOW reports the nurses in the hospital very interested in articles by "Gremis" in "A.R." Professional interest probably. 3UI, apart from building a six metre portable, has not been very active. A rumour from a reliable source (in Foster) says Alan has a YL. 3GD now using 6V6, 6V6, 807, with 6N7 mod. George doing well on ten, in spite of obsolete frequency control. 3AOK new station in Moorookpa. 3XZ using phone but 3AT back to e.w. 3TS active but no dope. 3APP's sister keeps him

busy washing dishes in between working Gs on ten. 3DW and 3KR are still the best earbashers in the zone. 3YV has a dry joint (not the house), and has been off colour after working I.C.A.S. ratings too long. We hope the wrist is better Howard and you are regaining emission. 3ABG removed the fan from the rig and put it at the operating position for the hot weather.

3CN has recently added a few more countries to his long list. How about duplicating it on phone, Snow? Have not heard the Mountain boys, or the North gang on the air. What is doing chaps? The v.h.f. gang are all waiting for six metre DX. The band has been open several times, but no stations heard. The weather has stopped portable activity lately. 3YV, 3JK, 3UI, 3APP, 3ACW, and 3ABG are ready on 144 Mc., but no big beams up yet. "Whiskers" Tacey is up to four switch changeover again. How about sending the surplus here Doug, so we can do away with some twisted connections.

SOUTH WESTERN ZONE CONVENTION

The South Western Zone held its half yearly Convention at Geelong on Saturday, 6th November. During the day Hams arrived from various country towns to attend the Convention. Some of them met at 3BU's shack and later proceeded to the club rooms of "The Geelong Amateur Radio Club," where everybody eventually made their way too; and had a rag chew prior to the dinner which was held at the "Garden Gate Cafe" at 6.30 p.m. Thirty-three Hams sat down and enjoyed themselves to a really good dinner. 3ASV presided at the dinner. The topic which was heard being discussed, would you believe it fellows, was Radiol

After the dinner the Hams proceeded to the Bostock Hall of the Gordon Institute of Technology where the meeting was held. In the absence of the President 3BI, 3BU, a Vice-President, took the chair with the assistance of 3ASV and 3BE. After the members of the Zone and visitors from other zones had been welcomed there was a roll call, each Ham stood up in turn and gave his call, name, and town. Those present were 3BU, 3SY, 3SW, 3AKE, 3VF, 3BW, 3ABE, 3AJF, 3ALG, 3IC, 3AML, 3APG, 3WT, 3ABK, 3SE, 3GR, 3VA, 3HW, 3UT, 3AKR, 3PS, 3AG, 3ED, 3LS, 3RT, 3VC, 3RD, 3BE, 3ASV, 3WQ, 3PW, 3ANL/7EB, and 3RU.

The trophy, which was an 832 donated by 3AJR for the longest distance contact on 144 Mc. was won by 3BW. 3AKE, got second place, the trophy for which was an 813.

Two PEO4/15A type tubes have been donated by 3PD, and it was decided to have another 144 Mc. contest. The first prize would be these pair of tubes. The Disposal Committee donated a h.f. tuning unit for second prize.

GLO-RAD

Introduced last month the Series 2090 CO-AXIAL DIPOLES for 144 Mc and 83 Mc. This month we are able to announce the availability of SERIES 2091 CO-AXIAL CONNECTORS.

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The trophy for the best piece of Ham constructed gear was won by 3ABE who had entered a r.f. frequency meter. 3WT took second place with his crystal oscillator. The first prize was an 813 and second prize was a 0-50 Ma. meter donated by 3KA. There were six entrants for this section: 3ABE, 3WT, 3BW, 3ALG, 3ABK, and 3IC.

3UT was appointed publicity officer with 3ALG as his assistant. The DX Contest was won by 3MC with 84 points, 3HG second and 3BI third. After the zone matter had been dealt with 3WQ discussed things about Disposals, and later talked about "Sub-Branches" of the W.I.A. 3LS gave us an interesting talk on the Emergency Network. The meeting closed at 11.5 p.m. when the Hams proceeded to the club rooms of the Geelong Amateur Radio Club where light refreshments were served. The Disposals Committee donated an aerial relay unit to the Ham coming the greatest distance to the Convention. This was presented to 3IT, of Balangeich, who travelled 140 miles to attend. The Disposals Committee also donated some gear which was auctioned for the funds of the zone.

Altogether everyone had an enjoyable time. Some of the Hams stopped over night, and were taken around the Ham shacks. They also visited the studio and transmitter of the local broadcast station 3GL. It was decided to hold the next Convention at Colac next April. Special thanks go to all those chaps for the work they put in to make the Convention a success.

Operating on 144 Mc. in Geelong and District are 3BW, 3VF, 3BU, 3AKE, and 3AJP.

NORTH-WESTERN ZONE

Interest in v.h.f. is growing in this zone and will reach an all-time high with the visit of 3HK to the zone bringing his 6 and 2 metre portable. In response to a long standing invitation by 3VM, Keith made the trip on 13th November. 3OA has a receiver going on 50 Mc. and hopes to have the transmitter soon (p.p. 80's), also SCR522 on 144 Mc. While lowering his 20 metre rotary recently, the mast swung sideways and a guy attached thereto nearly decapitated the lounge chimney. Fortunately not the chimney that supports the six metre four element rotary! 3TL has his lonely 10 metre rotary up and working OK. The indicator with its circle of lamps is a thing of beauty, but Treb has found it necessary to rebuild the driver stages of the rig to get enough drive for the p.p. 80's. We hope Treb will get on soon.

3ZK is on again for the first time post-war. Jim and KYL has been on a trip south and called on various Hams. Roy of SCE, loaned Jim an AT5 on condition that 3ZK come on the next zone hook-up and Jimmy made it with nice phone, plate modulated, but temporary aerial. SCE with new mike, new modulator and ARS puts out an even better signal on 80 on his 18 watts. Roy's rig is always outstanding on 80, using half wave zapp supported one end on a 80 ft. lattice tower. 3LI has left Queensland and is now home at Sea Lake. Is building a new transmitter, all band from 80 to 8, using p.p. 80's in the final. 3AWK should be in his new home by Xmas, and then will erect a decent antenna and should get out better. His converted TA12D is more frequency stable than most crystal rigs as checked on the scribe's BC221T.

3ACE is often heard on 40 and 80 but has not been in the zone hook-up lately. 3JG also has resisted all appeals to join the gang on 80 on Sunday mornings. 3HR has nearly completed the re-wind of his alternator and will join us again soon. 3BM is to attack six and two metres with the help of 3FK. The proposed antenna is stacked folded doublets with reflectors on six, and stacked pairs of halfwaves in phase on 2 metres with reflectors, all rotated with feathering motor at the head of the 70 foot mast. Proposed transmitter v.f.o. driving 80's as multipliers to 812 push-push doubler driving 35TGs in p.p., 100 watts. SCR522 for 2 metres.

GEELONG AMATEUR RADIO CLUB

There was a good attendance at the last meeting of the Geelong Amateur Radio Club. After the business reports on the activities of 3BW and 3VF on 144 Mc. were read by 3ALG. This was followed by an address by 3IC on previous years of Ham Radio. Bob gave a description of his ARS receiver and his American type, CRV52233, aircraft transmitter.

At the next meeting members of the club listened to a lecture on the Cathode Ray Oscilloscope by 3VF. Bruce used the blackboard and oscilloscope to illustrate his lecture. Mr. Oliver, of Singapore, and Mr. Reece, who were visitors to the club, were welcomed by the President.

A question night will be held on Monday night. Attending members of the Club are invited. A visitor to the club was Mr. E. Davey. It was de-

vised by the members to apply to the P.M.G.'s Department for an Amateur Licence. 3APG/WC, who described his Type 3 Mark II, finished off his lecture with a demonstration. At a later meeting 3WT was the speaker. He brought along a complete Ham Station and related his experiences as an Amateur and demonstrated receiving equipment covering all bands and low powered transmitters with a band coverage from 2 to 80 metres.

CENTRAL WESTERN ZONE

Congratulations from the zone go to 3OD at Horsham for his i.b. reception of 3BW on 144 Mc., too bad a transmitter was not in operation at Horsham to make it a two-way, however as the signals can get to 3OD no doubt they will go back next time. 3OD by the way is a new one to the zone, and together with 3OW, 3PX, and 3ALC we extend greetings, and hope for a long and happy association with the boys. 3PX has just arrived lately in Stawell from Mildura. 3ALC is busy making the name of Bunza known to a wandering world, and 3OW is demonstrating the effectiveness of QRP from Lubeck, that little spot by the way has quite a large Ham population with three active stations and a possibility of a fourth in the near future.

3AX has his series-phased beam working now but the receiver is not so hot. 3AKP has become a confirmed DX addict on 14 Mc. and can be heard diligently talking the victims with his v.f.o. Keith has now passed the 50 mark, and looking for that BX C.C. 3DP still putting out his usual workman-like c.w., but suffers at times from low battery voltage when things get a wobble up. 3GN, who is now leading a quieter life, will be turning more of his time to 50 Mc.; George has a three element beam ready and should be active soon.

That little bloke 3XC has been at it again, and generated a strong second harmonic of unsurpassable proportions, what about better filters Bill! 3YW is building a four element beam for 50 Mc. and revamping the receiver to double conversion and grounded-grid r.f. amplifiers, main snag at the present is time and the weather.

For those who did not go to the Convention or listen to 3WI broadcasts, the zone hook-up has been changed to 2 p.m. second Sunday in the month on 7120 Kc.

QUEENSLAND

The October general meeting was held on the 29th inst. in the Institute's Elizabeth Street room. The President, 4AW, presided over one of the largest gatherings of VK4 Hams since the war; there being present 53 members.

4AW welcomed visitors VK2JF, VK2AC, ZLIGE and ZL4HF. Visitors from other parts are always welcome and we hope Hams visiting Brisbane will drop in at future meetings.

Council has been fortunate in getting still another room in the city area where Hams can meet at any time for a rag chew.

Council and Student Classes will in future meet in Room 16, Victory Chambers, Adelaide Street.

In addition, these rooms will, sometime in the future, house 4WI and a reference library.

The position of Traffic Manager was relinquished by 4NO who has been transferred to VK2. We are sorry to lose you Norm and wish you all the best in your new home. The position of Traffic Manager has been offered to VK4AG.

The general business was followed with a lecture by VK4XG—the subject "The Panoroscope." Gus gave a very interesting lecture explaining very lucidly the technical points and followed up with a practical demonstration. More lectures of this type would go a long way towards increasing the attendances at general meetings. After the lecture the gathering broke into two sections. A number gathered round the blackboard and very soon graphs and equations covered the board.

"While words of learned length and thund'ring sound

Amazed the gazing rustics ranged around,"
So the writer migrated to join the other group at the far end of the room where—

"Yarns much older than the ale (coffee) went around."

Members for the first time wore identification tabs. Now we know what the guy, who owes me that QSL, looks like.

We are pleased to announce that Library Service is nearing the fifty subscribers mark now.

A D.F. Field Day was held on 17th October and from the point of view of numbers participating was very disappointing. 4RT was first in the 7 Mc. section with 41M second, 4ZU, 4XG, 4KB were the only ones in 50 Mc. section, and it is not known who found the hidden transmitter first.

4WI has added yet another band to its Sunday morning transmission. The 80 metre band is now used simultaneously with the previous four bands.

Zone news this month is very scarce and we point out that Zone Managers should get their zone news to me by the first of the month.

In concluding this section of the notes, on behalf of the Council and myself I extend to all VK4 Hams the compliments of the season and may 1949 bring us that which each of us seeks.

ZONE NEWS

Townsville Zone.—Townsville Club recently moved into new rooms and hope to get the rig on the air soon. Zone Manager is VK4GD. Associate members up there are very keen. A certain Associate rode 28 miles on a push bike to attend c.w. classes. Trouble with bike on the way was the cause of bringing him into 4RW's QTH. Bob put him on a train and saved said Associate the return trip by bike. 4FE left this Zone to become VKIAB on Macquarie Island. Arthur worked 32 Zones on 28 Me. before leaving the north.

South West Zone.—4TY has worked 123 countries with 80 veries. The Manager, Eric, reports that some members of this zone are still holding magazines and requests that these members return books immediately.

Macakw Zone.—4AW writes "Those heard operating on 20 metres are 4FH, 4BQ, 4KW. A new Ham 4AM hopes to be on very soon on c.w. 4MA still rebuilding super rig. 4FW building a new receiver. 4MU at Finch Hatton is working the boys on his low power. 4FH and 4MA very busy on Elsteddof work."

Bundaberg Zone.—We are pleased to report the formation of yet another zone. The Manager of this zone is to be appointed later. On the 21st November, the Bundaberg District Radio Club will celebrate its second anniversary. President is 4PG, Treasurer 4XJ, and Secretary 4HE.

SOUTH AUSTRALIA

The monthly general meeting saw another splendid lineup of enthusiastic Hams gathered to hear Mr. Dobell give a very interesting and instructive talk on "Acoustics." To many members the talk was surprising, inasmuch as very few realised that the study of acoustics had progressed so far and was capable of being treated in such an interesting manner. The vote of thanks which was so ably proposed by Jim Paris was received with more than the usual signs of acclamation.

5JE (Ted Cawthron) signalled his return to the fold by an impassioned delivery to the meeting of his net subject (keeping the phone signals out of the c.w. end of 7 Mc.) and 5LE (Luke Lucas) spoke his zana by an equally forceful plea on behalf of his net subject (keeping the c.w. signals out of the phone end of 7 Mc.) and between the pair of them, and their supporters, the rest of the meeting was alternately convulsed or indignant. Another matter that was brought up was that of the anonymous letter received by 5YQ and 5KO regarding their alleged splatter, overmodulation, etc. and everybody agreed that there was only one place for such epistles, the w.p.b. Apparently the writer of the said letter does not read "Amateur Radio" as there has been quite a number of technical articles appearing recently which clearly show that one could not overmodulate or splatter or something.

The samples of disposals equipment which were on show at the meeting caused quite a flutter among the gang, but more of this later. Just before putting these notes in their envelope I heard a rumour that Cec. Busby (5BZ), our stony hearted Treasurer, has tendered his resignation due to pressure of business. I could say that I hoped that this news was incorrect, but I know that Cec. has been only carrying on his duties because Council has talked him into it, and apparently he has at last taken the plunge. Cec. is a good scout, a perfect gentleman, and strangely enough a good sport (most perfect gentlemen are usually pains in the neck); anyway "Battler," we are sorry to lose you but we know you have to go, and if all this soft soap has not made up for my paragraphs of rudeness to you then I have turned out a failure. It's been a pleasure working with you Cec.

I understand that Ross Kelly (5LW) has told his harmonics that Father Xmas has shot himself, and hopes to save enough, by his shameful trick, to purchase one or two things in the radio line. Oh that such wickedness should be.

The Northern boys are a bit quiet this month, they must be recovering from the field day or spring cleaning or something, mostly something I think. The Northern Net, as they call themselves, tried a quick "break-in" get-together on a week night recently and discussed the points raised on the previous Sunday morning. It was a great suc-

cess and the boys enjoyed the "break-in" procedure, although one or two still like to bash the ear. Thank Heaven for the "Bull Protectors."

My information regarding 5AP was apparently a little previous, he is only "half hitched," sorry Ron, but my advice still holds good. 5RJ should soon have a.c., sooner or later anyway, because he has been playing around with a couple of Thyatron inverters. He can get a.c., but the voltages are a bit haywire. 5AP is going QRO to 100 watts. 5AX is busy making protectors and hasn't been heard much. 5BA is looking for a net frequency crystal. 5CD is trying out various modulators and mikes. 5CS was heard testing with a very good signal. 5CS had an extra good report from 5AP via 5PX. 5TY was also heard testing with f.b. modulation during the week. 5MA has ground a crystal for the net frequency.

The boys have been slinging off about 5UX and his modulation, so he got to work and contacted VR2BD on 7 Mc. the other night. That's showing them. Les. 5VM has two new sticks 35 ft. up in the air. Rooks! he might have to put air warning lights on them! Heard him trying to convince 5RO that they were made of malleol! 5XL seems to keep an ear on the net frequency 24 hours a day. Is that right Lance? 5XR is still QRL with military duties. 5WG has a transmitter on 7 Mc., only 5 watts and a f.b. signal. 5MN Me No hear. 5JA is still very interested in 144 Mc. and is getting ready to work DX during the summer months. 5MS at lone last has his a.c. installed and is very happy. 5CH had a bit of bad luck with his DT04, but hopes that it will be OK when it comes back from VK2. 5TW is still very busy getting things organised to work his first Q. 5CJ is now rebuilding his receiver, it probably will not be so efficient, but it will be more flexible. By the way, Col. sorry that I missed you, but it was my day off, and I was hoping that you would come back. Better luck next time for me. I hope.

I have to fill up this empty space on the bottom of the page, so very silently, very mysteriously, and with an expression on my face which is destined to catch the Editor napping (he suggests that it makes me look as if I have a bad attack of indigestion) and I say "my readers want to know, where is 'Grem'?" A'right Tom you needn't bother, I'll put it in the waste-paper basket.

Rumour Department.—I can deny the rumour that "Doc" (5MD) is a recognised authority on the new ten metre beam that everybody is talking about, namely "the cubicle quod." Just an association of ideas that's all. There is also no truth that "Tommy" (5IT) is now wearing a sarong. Just because he lapses into the KTH6 language with "ganga wunga danga" or a couple of "kinga dinga pine'a's," it doesn't mean that he has a hankering to discard his pants and coat. Only a sidddy pidddy widdy would believe that.

My paragraph last month regarding the writing on a door locker at my place of employment, to wit, 5JR and 5FQ "the dual conversion boys" was apparently taken very seriously by somebody, because the "con" now reads "per."

Heard a VK5 in the early hours of the morning calling a Z86. The VK5 was using a four element beam and modulating at about 250,000 per cent. (I know it can't be done, but there it is). The Z86 was sorry but he could hardly hear the VK5, yet only a few minutes later another VK5, using a common or garden long wire, and modulating 80,000 per cent, was given an R5 S9 report from the same Z86. Perhaps some of our local technical writers could be persuaded to dash off a couple of articles on this strange phenomena!

General opinion in VK5 this month is that "Amateur Radio" for last month was by far the best ever. Keep it up "Tomsy Womsy" and the rest of the gang, we can be just as liberal with our praise as we can with our criticism.

By the time this magazine comes to hand it will be very near the "festive season," so it now becomes my pleasure on behalf of the Council members of the VK5 Division, to extend our seasons greetings to all Hams, irrespective of birth, sex, colour, creed, or opinions. May we all unite for the furtherance of "Ham Radio," the greatest hobby of them all. Oh, and by the way, if you should be looking for a New Year resolution, what about treating Ham Radio as a hobby, and not as the be-all and end-all of everything!

To those who have helped me with these notes throughout the year, I say thank you, keep up the good work. To those who have kicked me, well you know the old saying "where there's no sense there's no feeling," please kick me some more, it's all news.

WESTERN AUSTRALIA

Due to having to vacate our meeting rooms, the November meeting was not held until the 30th of the month, in our new meeting place in Padbury House, Cnr. St. George's Terrace and King Street, Perth.

As this date was too late for us to obtain notes, these will appear in next month's issue. Members are advised to watch the Monthly Bulletin carefully, for the meeting date. Next year there will again be a regular night set, as previously.

Preparations are in hand for the formation of an Amateur Wireless Emergency Reserve, and an excellent response has been received to a questionnaire form which was prepared and sent to all members.

From the 13th November, 8WT Broadcasts will be made from the QTH of 6WH.

PERSONALITIES

Condolences are extended to 6WT for the recent loss of his father. When these notes were written, Dove was in VK3, and we trust he was able to dig up a few of the gang during his short visit. 6LW is a very busy man these days, and we have not heard much of him on the air. We guess work is getting him down. 6MB has now a new two element rotary beam working, and it seems to be doing quite a fine job. Although 6BC has not been to a meeting for some months, he seems to be a little more active on the air, as he is even heard on 10 metres.

6DU is a new call sign for an old-timer. 6DF, Maurie, has now two call signs the latest—6DU, being for his West Perth QTH. Congratulations are also extended to him on his recent addition of a second operator. 6MU, although now news from the Merredin district has been received, we still hear overseas stations calling Mal, so we presume he is still active. What about some news Mal? We believe 6HT is temporarily off the air. We trust that this is not going to be a permanent sojourn, and we will hear Harry back again shortly. 6GC has been heard on the air recently on 40 metre c.w., and it is hoped that the time will not be far distant when Bob is a regular inhabitant of the ether.

TASMANIA

Nothing remarkable seems to have happened in VK7 during the last month or so. The usual monthly meeting was held on the first Wednesday of November and as usual was well attended. Our President 7LJ was absent, suffering from a bout of the flu, but is now well again and back on deck. An interesting talk on "Radio as applied to Submarines" was given by Mr. Gee who went "under the sea in ships" in World War I.

The Food for Britain Appeal is still going strongly and letters from G land tell of the value of these parcels to the folk on the other side of the globe, so keep the good work going chaps.

The bands seem very dead down this way of late, even the locals seem to have quietened down quite a bit, maybe it's something to do with spring. By the way, can any VK7 tell me on what day spring occurs this year?

By the time this appears in print, the Hamfest in Launceston will be a thing of the past. About thirteen Southern and Country members are making the trip and all are looking forward very much to the event, personally I've been eating lots of salted peanuts to get up a really sixty-four dollar thirst!!

It looks as though we shall be losing our worthy Treasurer in the near future. Alan has decided to trek north. Fort Moresby is his destination, still as long as he takes his boomerang he should be OK.

Had a letter from 9YY a couple of days ago. Bill (ex-7YY) is still up in Wewak, but isn't doing much Ham Radio, as he is much too busy at the key punching for a living to have time for Ham Radio.

Ham chatter is in short supply this month, in fact I'm clean fresh out of news, so will see you all next month, wish you a Happy Christmas, lots of DX in the New Year and say 73 and cheerio.

NORTHERN ZONE

During the November meeting of this zone I mentioned that I possibly would not be able to write these notes in time for publication and I was immediately informed by the meeting that it didn't matter as all the zone members knew what was going on and the outside world wouldn't care anyway. On thinking this over I came to the conclusion that they were possibly right. From now on the problem becomes difficult because if I am to continue these notes what can I write about that is interesting?

Owing to the unavoidable delay between the time of compiling the notes and the distribution of the magazine, it is impossible to give advance details of future events and write-ups of meetings that took place two months ago (one month's delay only—Ed.) are as stale as Sunday night's bread. If all zone correspondents went into this matter in their zone they might get some ideas. Who knows, it might even cause major changes in the set-up of "Amateur Radio."

It may be of general interest if it is mentioned here that there are at least five Amateurs in Launceston who are active on 144 Mc. and that most of these stations are operating every night. Power used is relatively low, possibly around 25 watts and the receivers are usually of the super-regen. variety. All stations are using either three or four element beams. It might pay mainland stations to swing their beams down south occasionally.

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FIFTY AND UP

VK6 AND VK6 MAKE CONTACT

STOP PRESS.—During the early evening of the 6th November, VK5GB was listening on the 50 Mc. band. At 2020 hours he heard VK6HN of Kalgoorlie, on 50.2 Mc. calling CQ at S9. VK5GB made contact with VK6HN and reports were S9 both ways with some QSB. After concluding the QSO 5GB passed it over to 5KC who also made contact. Then 5KC handed it to 5RT who made the third VK5 to QSO VK6HN. The band was open for 1½ hours.

The band opened again at 2100 hours on the 15th November when VK6WB of Albany contacted VK5GB on the 50 Mc. band. This contact was rather astounding seeing that this QSO was 6WG's first on six metres, and when 5GB returned to 6WG's QSO 6WG was speechless. Strength reports were S9 to S5 both ways. The same night 5GB heard 6HN again and also 6SA.

On the 19th November VK2 stations were heard in Adelaide on 50 Mc.

NEW SOUTH WALES

The most important news this month has been the sudden re-appearance of the Interstate Sporadic E Layer DX signals; and VK3, VK4, VK5, and VK7 stations have been heard and worked in Sydney at various intervals and varying signal strengths on 50-54 Mc.

VK2RU in Gosford has been keeping a check on the Alirerit Beacons in the various capital cities and uses this knowledge to advantage apparently, as witnessed by his success to date in the v.h.f. contest. 2LY is another station who is well to the fore in the point scoring and looks a dangerous rival to the honours.

major disturbances were evident in and around the metropolitan area. However country stations may have noticed some changes in noise level and if so we request them to send these observations to the Secretary of the V.H.F. Section, Box 1734, G.P.O., Sydney.

This information would be very valuable indeed to the scientific people who use this data in coupling their research records on propagation and ionosphere disturbances. We would also like to stress, while on the subject of observations, the importance of reporting any Sporadic E reflections of 50 Mc. to the Radio Research Board in Sydney. The exact time of signals coming in and going out are of the utmost value to these people, who have asked us to thank you for the interesting information which they have already received. However they are always pleased to get these observations as soon as possible after the break through irrespective of the direction and are really appreciative of our activity on their behalf. Here is a phase of our hobby where we can really justify our existence as real experimenters.

QUEENSLAND

Renewed activity on this band is reported from Brisbane where the v.h.f. gang are now holding regularly Sunday night skeds from 1900 hours. On 30th October 4XD Townsville worked 2VW at 1645 hours. 2XX was also heard at about the same time. 4HD heard 4ZU at 1930 hours on 31st October but no amount of calling by Max could break through to Howard. 4HD uses a 3 element dipole with 108 ft. ribbon feeders. VK2 and 4BT were heard in Townsville during the week-end 6th November by 4XD. 4CU worked 7XL on 6th November at 1745 very strong signals both ways. 4BT worked eight VK3s on 6th November.

We understand that the newly formed club in Wollongong are very v.h.f. conscious and reports

from that area would suggest that this live-wire club will soon have some equipment going on 50 and 144 Mc. shortly.

The last meeting of the v.h.f. section of the N.S.W. Division was very well attended to hear a composite lecture by Messrs. Maycock and Andrews, of A.W.A. Ltd., their subject being "F.M. Transmitters and Receivers." The hearty vote of thanks which followed would suggest that these lectures were very well received and we look forward to hearing more from these two excellent authorities on this topical subject. The next meeting of the v.h.f. section will be held on 12th November and Mr. Holloway also of A.W.A. Ltd., will tell us all about "V.H.F. Receiver Design and Technique."

All bands from 50 to 576 Mc. are well populated each night in Sydney and the v.h.f. contest would no doubt be responsible for this activity, which we will agree was the major thought behind the organising of the effort. However we feel sure that when the contest ends in December that the stations who participated and thoroughly enjoyed the good fellowship that existed throughout will continue to be active and help keep the interest in v.h.f. alive in this State.

The N.S.W. Division Field Day will be held at Woy Woy on 5th December and for the first time in history will use v.h.f. for a hidden transmitter hunt. The frequency chosen is 144 Mc. and the Gladesville Radio Club has been asked to provide portable equipment for this event. A good time is expected to be had by all who will be fortunate enough to be able to make the trip, weather permitting of course.

During the recent eclipse in Sydney all v.h.f. stations were asked to observe any change in conditions generally while the phenomena was on, and to date reports would indicate that no apparent

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BRIGHT STAR RADIO. K. G. Allen (late R.A.N.)

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Phone: UL 55:0



WESTERN AUSTRALIA

144 Mc. DIGEST, by W. J. Hartley

CORRESPONDENCE

CALLING A PIRATE!

60 Elmatta St., Braddon,
Canberra City.

Editor, Sir,

I would be grateful if you could insert the following:—

Dear Pirate,

I am interested in the fun you are having with my call on 14 Mc., and congratulate you on your DX. Perhaps as I don't use 14 Mc. and am not likely to for some time, there is room for us both. If you send me your name and address I'll pass over your QSL cards which I don't want, but don't you feel a bit sorry for the chaps expecting a card from me?

I'm glad you are a c.w. man, and I'm very glad you have a T9 signal. It makes me a shade less hostile, though I'd like it far better if you got a call of your own. Oh I nearly forgot, if I do get hold of your name, I'll pass it along to the P.M.G. 73 c.u.l. (I hope),

—J. E. RADCLIFFE, VK2ADM.

CRITICISM AND SUGGESTIONS

73 Portrush Rd., Toorak Gardens,
South Australia.

Editor, Sir,

I wish to protest against the reduction in the allotted space for Divisional notes. I know only too well that the committee is trying to do their best for all concerned, but I do honestly think that this latest move will be a retrograde step. I feel that the function of "A.R." is to hold the W.I.A. together and strengthen its membership internally and there is no doubt whatever that the notes from each Division were steadily achieving that end. From criticism voiced in VK5 the magazine is having a harsh judgment passed upon it and but for the notes that Warwick Parsons has laboured over, there would be practically no support for it whatever.

Since we are compelled to accept it by Federal direction, agreed upon by our delegate, I can foresee a vote against it at next Convention unless radical changes occur. If you peruse "QST" very carefully you will find that sectional notes predominate, a fact that should guide your judgment.

There should always be a section for Readers' Comments, letters, etc., and this could well take the place of such articles as "Amplitude Modulation" by VK5YQ which has been amply covered by Terman and Henney and much more lucidly so.

In general also re-prints of articles should not be included because there are enough of most overseas magazines to distribute the information in Australia and our public library lending service can cope with them if needs be. Short references to very good articles and where to get them, yes.

"Questions and Answers" should be expanded if copy is forthcoming; "Fifty and Up" considerably expanded, and if technical articles are needed, then extend on this side of the activity of our hobby with details of tubes available, antennae to use, etc.

I have tried to give some constructive criticism as well as the other type with the view of biasing the magazine into a more personal affair of the doings of Australian Amateurs in all spheres of their activities, because I feel that if the interest in its publication wanes as rapidly as the temperature at the last general meeting of VK5 did, then there will soon be no official organ of the W.I.A., which would be a great tragedy.

For a start extend, not retract the notes of each Division.

—GORDON M. BOWEN, VK5XU.

[Several letters have been received on this matter. The decision to restrict Divisional Notes was made by the Magazine Committee and approved of by the proprietors, the Victorian Division.]

Some misunderstanding has arisen on the restriction of notes. Divisional Sub-Editors were requested to keep their Divisional and Zone Notes within definite limits. Such notes were not to include notes for "Fifty and Up" and "DX Notes." These were to be supplied separately for inclusion in features under those headings. The consequent result of this action will undoubtedly mean that Divisions will actually get more notes space than before except that certain notes will appear under separate headings.

Thanks for your construction criticisms o.m., but it is obvious that we cannot carry out some of your suggestions unless we receive the help of the general member.—Editor.]

50 Mc.—The highlight of the year for 50 Mc. is the news of the band at last opening up between VK6 and VK5. On the 6th November, at 1830 hours W.A. Standard Time, VK6HM at Kalgoorlie began to hear signals from VK5. A little later he was successful in establishing a contact, and altogether worked four VK5 stations, having six QSOs.

The signal strength was good both ways, being up to S9 plus. The last contact was made at 2000 hours, local time, with VK5RT giving this last mentioned station his W.A.S. on 50 Mc., the first station to make this achievement.

We thus have VK6HM, the first VK6 to work out of the State on 50 Mc., and VK5RT, the first station to W.A.S. on this band. Congratulations are offered by this Division to both stations concerned.

144 Mc.—This band as usual has been quite active amongst City Hams, it being by far the most popular v.h.f. band at present. As mentioned previously we are endeavouring to give details of each station working on this band, each month. This month VK6AG has given us details of his rig, as follows:—

Post-war 6AG entered the v.h.f. arena with the release of the 144 Mc. band, and the availability of the SCR522s. After the usual breakdown of condensers, etc., the set functioned as a transmitter using an 8007.69 Kc. fundamental crystal, and produced output on 144.138 Mc. This allowed an absorption meter to be constructed.

A "Walter" life-boat transmitter, which was tuned for about 175 Mc. was brought down (by adding a little capacity) to 144 Mc. By the use of the absorption circuit, this transmitter was then used as a modulated oscillator to adjust the 522 receiver. The fixed frequency arrangement was removed and a variable oscillator used. By the fitting of a 160 : 1 ratio dial, tuning is quite easy and once the r.f. stage is set no adjustment is needed to that, and the trouble of ganging was obviated.

The power unit is the regulation motor generator changed to a belt driven affair with remote starting and stopping.

An external pre-amplifier replaced the standard speech input. The radiator is a three element beam using aluminium angle (motor car footboard type). Adjustments were made using a remote dipole with germanium crystal and 0.1 Ma. meter in a tuned circuit coupled to dipole as a receiver. QTH is Darlington, 16 miles due west of Perth and S9 signals can be obtained at any hour with Hams with similar sets in Perth and suburbs.

TASMANIA

In anticipation of the 50 Mc. band opening for interstate contacts very shortly, the gang in Hobart have been busy putting the finishing touches to their gear and getting rid of the "bugs" and troubles that seem to accumulate on little used rigs.

Those mainland Hams anxious for Hobart contacts this coming summer on 50 Mc., are advised to watch for 7AJ, 7DH, 7CW, 7GR, and 7NC. A new comer to the band this season is TDB and he has all the necessary gear to make a good showing. An 832 in the final with 30 watts input feeding into a two element beam and a v.f.o. which, with some modifications, will give him complete band coverage. His receiver, starting with a 6AK5 (r.f.) 1852 (mixer), and 9A03 (osc.), is a line-up which in TDB's capable hands is sure to drag them in.

Another newcomer is 7AJ and has about 20 watts input to an 832. He will, he hopes, have a beam up shortly and be using m.c.w. on approximately 51 Mc. The receiver, a 13 tube all band affair, has a front end consisting of 1852 (r.f.), 1852 (mixer), and 6J5 oscillator, and this combination, with 7AJ's keenness, will give plenty of competition to other operators.

That old stalwart 7CW with his 100 watts into an 829B helped by a four element beam and an SX27 receiver is bound to be getting his share of contacts.

We are hopeful that George Richardson 7GR will be able to give a little more attention to 50 Mc.

The same transmitter as last time will be in use at 7NC. A 0L6 crystal osc./dbr. (6.25 Mc. xtal), 6A6 dbr./dbr., and an 807 final amplifier. Using cathode modulation, this set up has proved very satisfactory. Just recently a converter was successfully coupled into the main receiver and high hopes are held for its performance over the type of receiving equipment used previously. Another recent improvement (we hope) is a vertical coaxial antenna approximately 30 ft. high.

On Thursday, 4th November, at 2015 hours a VK2A—? was heard on 50 Mc. band in contact with VK2RE. QSB was rapid and signals dropped right out at intervals and correct identification was not possible. VK2RU was not heard and although a close watch was kept, the signal of VK2A—? was the only one heard.

One thing that seems rather odd, where the Victorian v.h.f. group is concerned, is the holding of field days once a month; one month for the 50 Mc. boys, and the next for the 144 Mc. gang. As it stands it really amounts to a two months break between each field day for a given band and so on the hearing it would be more to the point for the boys on their toes to make a 144 Mc. field day each month. This would quicken interest and would enable everybody to take advantage of any good conditions that may be present, but would be missed if the two month set-up is still used.

Best news over the past month on the 144 Mc. front is the reception of 3BW's phone at Horsham by 3OD, a distance of approximately 160 miles airline. This effort makes for a VK3 one-way phone record and it is a pity that 3OD was on receiver only, in this case a super-regen and two audio was used.

Next newsy bit is of 3QR, Churchill Island, who is on with a 522. 3QR's location is about 53 miles direct from Melbourne and should provide a nice bit of DX for the gang. Our Technical Editor (3VZ) made a quick pass at 2 metres but has not been heard since, however it is hoped that he will use his Bendix to sort out the muddle on the low end of the band. The glamour session of 3WI was well taken care of by re-broadcast on this band by 3ACM (east-west) and 3TO (north-south).

The following were heard on 144 Mc. 3AJ, ABA, AOM, ASC, ADC, EW, EM, EL, ES, EH, ED, JO, TO, MB, XM, YJ, LN, LS, BQ, and VZ while the Geelong Club was well represented by 3AKE, BU, BW, and YK. Good things are well in store for the future week-ends as the portable craze has caught on. 3ADC is building the 3ASG type of mod. osc. and as this is the best S.E. transmitter on the band, good signals can be expected from Leongatha at Xmas time.

Steve, of 3ASG, is too impatient to wait two months between the field days so he is making it a point, like 3XM, to always take the rig along no matter what day it is. Colin of 3AOM, having finished his portable, is now thinking of putting the big job back on the air again. Guess Dick 3AJ is still waiting for the snow at Mt. Bogong to melt before he drags the 522 issue with him. 3IS and 3ED have added to the "bottom end" by using their 144.138 rocks, this now makes eleven phones all on the one spot.

No correct scores are available as yet from the N.S.W. v.h.f. contest, however it is expected that the hard working Charlie Fryar 2NP will soon let us all know. Advice received from Vaughan Wilson 2VW is that the 144 Mc. band is that full now of stations that each one is now taking it in turns to go on, yet despite this newcomers in 2AH, AZ, AND, ASK, and AJA have managed to squeeze in. 2VW reports on the fact of hearing 3QR, RT, and GE all on 50 Mc. at S9 for a solid hour and of a two-way contact with 4XD up in Townsville.

Last minute news just to hand is of great interest, as Sunday 14th November, turned out to be quite a field day in which the National two-way phone record of 122 miles on 144 Mc. was increased to 125 miles by the same two stations 3ABA-YS and 3CI. The formers were located at Mt. Callins, Avenel, while 3CI was operating at Mt. Fatigue near Foster. Signals exchanged were R5 S5 both ways; the Avenel station also worked 3VF who was reported as S9, the latter contacted 3ABG with the same strong signal. 3ABA made contact with 3UI of Tatura, with 5/9 signals each way; 3AJ was heard at R5 S5 and 3AKE at R3 S3.

3CI at Mt. Fatigue got through at last to Melbourne, despite the strong carrier that was running idle on 144.0 most of the afternoon. 3ED, who was at the Melbourne end of this contact, reported reception as R5 S5 for the 98 miles, quite a few of the chaps were rather annoyed at the fact of the carrier being right on top of 3CI's frequency, particularly as there was plenty of room on the rest of the band.

Things are on the move at last for a link up between the Adelaide portables from Mt. Lofly to 5JA and company at Mt. Gambier. The mainstays on 144 Mc. are 5GF, CR, GL, XE and HD, while 5FW is still using a dummy antenna; when are you going to make your debut, Eric? 5JD went mad and wrecked his 144 Mc. receiver, one job at a time Jack, however he cooled down after hearing a ZL on 56 Mc., which turned out to be a 28 Mc. harmonic and as the i.f.s. tally it was not an image. A double band rig (6 and 2 metres) is under way by the lone star 5JA at Mt. Gambier. It is lined up for a 6V6 triet, 6V6 dbr., which the 50 Mc. output, then direct to a 815 for 50 Mc. then to the 832 tripler onto a 815 for 144 Mc.; looks like John will be a push-over for the Mt. Lofly crew.

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FOR SALE.—A few Type A Mk. 3 still available at £10. The S53 sender at £20 has not yet gone. A Special—Radar Receiver Type 43AAY new and complete, 6SK7, two 6H6, two 7193 tubes, genemotor 18v. input, 450v. output, 10 new tubes, genemotor, new, wired completed less tuning unit; £5/10/-. Ted Kerby, 85 Auburn Rd., Auburn, E.3, Vic.

FOR SALE.—BC348 converted to a.c./d.c. in excellent condition, complete with instruction book, price £45. C. Patterson, VK5XR, 211 Main St., Peterborough, S.A.

FOR SALE.—Deceased Ham's gear, transmitter has been dismantled for sale in part, h.v. power transformers, etc., also Class B mod. transformers, receivers, etc. Call or write J. Symons, VK3JT, 30 Eleanor St., Ashburton, E.13. Phone during day JM 1525, Ext. 453.

FOR SALE.—Gilco Rotary Converter 110 to 240 volt d.c. input, 230 volt a.c. output a 6 amp. Also good stocks of a.c./d.c. valves. C. Patterson, VK5XR, 211 Main St., Peterborough, S.A.

FOR SALE.—Philips Triple-Wave 6 valve a.c./d.c. radio in piano finished cabinet, price £45. C. Patterson, VK5XR, 211 Main St., Peterborough, S.A.

FOR SALE.—"Thordarson" modulation transformer, tapped primary and secondary, rated 200 watts audio, shielded, £5. Pair 50 cycle Selsyn Motors, tested and new, Price £3 pair. G12 Rola Speaker, 2,500 c.t. trans., 1,000 ohm field, new, Price £4. 10 Metre Receiver, H.R.O. type dial, plug in coils, 8 tubes and built in power supply, Price £12. Eimac 250TH triode, new and unused, price £3. "University" model "D.C.M." Multimeter, nine ranges of mills, volts, and ohms, price £2. D104 Crystal Mike with stand, price £5. "Dynamike" moving coil Microphone with high impedance transformer, price £2. "Torpedo" studio type Velocity Mike, with transformer, price £2. Also complete kit of parts for 50 watt modulator, including power supply, chassis and cover plates, any reasonable offer accepted. D. C. McDonald, 16 Railway Ave., Malvern, Victoria (Phone: MW 9654).

FOR SALE.—VCR139A C.R.O. tubes and sockets (low voltage type). Price 39/6 complete. G. Laver, Fish Creek, South Gippsland, Victoria.

TA12D Transmitter for sale. Complete with tubes. £15 f.o.r. Melbourne. VK3UV, 12 Royal Crescent, Camberwell.

FOR SALE.—Valves 10/- each: 6N7 (1), RL7 (2), 807 (4), 45 (1), 83 (1), 6C6 (1), 6U7G (4), 6Z4 (1), 46 (3), 5U4G (1), 6G8G (2), 6A7 (1), 6Q7G (1), 6J7G (3), VR105 (1), VR150 (1), 6AK5 2), 2X2 (1), 955 (5), 6SA7GT (1), 7193 (5), 6SH7 (3), 30 (1), 1L5G (1), 884 (1), EK2G (1), H7220 vibrator (1), 6J5G (1), 6X5GT (1), 874 (1), 6H6 (3), VR91 (1), 6AC7 (7), 1C7G (1), 6H6GT (1), 1N5GT (1), 6L7 (1), 6SJ7 (1). Valves 15/- each: 906P1 (1), VT90 (3), RK34 (1), 866A (2), 830B (2). Meters 30/- each: 0-1 amp. Palec r.f., 0-250 Ma. Weston r.f., 0-250 Ma. Trip-lett d.c., 0-50 Ma. Palec d.c., 0-10 Ma. Slade d.c. Transformers: 550 c.t. 550 5-v. 150 Ma. 15/-, 450 c.t. 450 6-v. (2), 5-v. 200 Ma. 30/-, 1500 c.t. 1500 300 Ma. £5. 6-v./250-v. Vibrator Transformer 15/-, Filament Transformer 2.5-v. 3-8-v. 10-v. heavy duty 35/-, Audio Transformer 6600 c.t. 1500/2500/5000 ohms. Chokes 15/-: 30 Ma. 30 H., 100 Ma. 30 H., 150 Ma. 30 H., 200 Ma. 30 H., 200 Ma. 5-30 H. Condensers 10/-: 2000 v. wkg. 3 uF., 1500 v. wkg. 4 uF., 3500 v. wkg. 0.1 uF. "Radio" June '39 to Dec. '46. "Radio-electronics" 46-47. Plus hundreds of other items which are going for a song. W. A. S. Jolly, 229 Esplanade, Henley Beach, South Australia.

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Item 12. TYPE NO. 15353.

Prim: 200-230-240v. 110vA. 50 cps.
 H.T.: 350 CT 350v. 150mA. Cond. Input.
 Fils: 5v-3A 2.5v-5A 6.3v-3A
 Base: 4 1/2 x 4 x 4 1/4" H. Wgt. 9lb. 4 ozs.
 Mntg: V11 "S" is 2 1/2"

D.C. Volts	Choke Input	Cond. Input
5V4	285v	350v
83	290v	
5Z3	260v	350v

Item 13. TYPE NO. 15403.

Prim: 200-230-240v. 110vA. 50 cps.
 H.T.: 400 CT 400v. 150mA. Cond. Input.
 Fils: 5v-1A 2.5v-5A 6.3v-3A
 Base: 5 x 4 1/2 x 4 3/4" H. Wgt. 10 lb. 12 ozs.
 Mntg: V15 "S" is 1 3/4"

D.C. Volts	Choke Input	Cond. Input
5V4	320v	405v
83	335v	
5Z3	290v	400v

Item 14. TYPE NO. 20353

Prim: 200-230-240v. 140vA. 50 cps.
 H.T.: 350 CT 350v. 200mA. Cond. Input.
 Fils: 5v-3A 2.5v-10A CT 6.3v-3A
 Base: 5 x 4 3/4 x 4 3/4" H. Wgt. 12 lb. 8 ozs.
 Mntg: V15 "S" is 2"

D.C. Volts	Choke Input	Cond. Input
5Z3	240v	320v
83	300v	

Item 15. TYPE NO. 17503.

Prim: 200-230-240v. 145vA. 50 cps.
 H.T.: 500 CT 500v. 175mA. Cond. Input.
 Fils: 5v-3A 6.3v-3A 6.3v-2A.
 Base: 5 x 4 3/4 x 4 3/4" H. Wgt. 12 lb. 8 oz.
 Mntg: V15 "S" is 2"

D.C. Volts	Choke Input	Cond. Input
5V4	410v	470v
83	425v	
5Z3	375v	480v

Item 16. TYPE NO. 20453.

Prim: 200-230-240v. 150vA. 50 cps.
 H.T.: 450 CT 450v. 200mA. Choke Input.
 Fils: 5v-3A 6.3v-3A CT 6.3v-3A.
 Base: 5 x 4 3/4 x 4 3/4" H. Wgt. 12 lb. 8 oz.
 Mntg: V15 "S" is 2"

D.C. Volts	Choke Input	Cond. Input
83	380v	
5Z3	345v	460v
5V4	340v	450v

Item 17. TYPE NO. 25503.

Prim: 200-230-240v. 190vA. 50 cps.
 H.T.: 500 CT 500v. 250mA. Choke Input.
 Fils: 5v-3A 6.3v-3A 6.3v-3A.
 Base: 5 1/2 x 5 x 4 3/4" H. Wgt. 15 lb. 8 oz.
 Mntg: V15 "S" is 2 1/2"

D.C. Volts	Choke Input	Cond. Input
5Z3		355v
83		400v

Item 18. TYPE NO. 25563.

Prim: 200-230-240v. 200vA. 50 cps.
 H.T.: 565 CT 565v. 250mA. Choke Input.
 Fils: 5v-4A 6.3v-3A 6.3v-3A.
 Base: 5 1/2 x 5 x 4 3/4" H. Wgt. 15 lb. 8 oz.
 Mntg: V15 "S" is 2 1/2"

D.C. Volts	Choke Input	Cond. Input
83	475v	
5Z3	430v	
5R4GY	430v	600v

Item 19. TYPE NO. 5176

Prim: 200-230-240v. 240vA. 50 cps.
 H.T.: 730 CT 730v. 200mA.
 330 CT 330v. 100mA
 Fils: 5v-3A 5v-2A 6.3v-3A 6.3v-4A
 Base: 4 x 5 1/4 x 5 3/4" HO. Wgt. 16 lb. 12 oz.
 Mntg: V12 "S" is 3"

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As illustrated at left, a 4-valve battery operated portable 8 x 6½ x 7 ins. which weighs only 12 lbs. when assembled. All quality features including Minimax batteries, Radiatron miniature valves etc. Special price to amateurs (plus valves and sales tax) **£10/6/4**

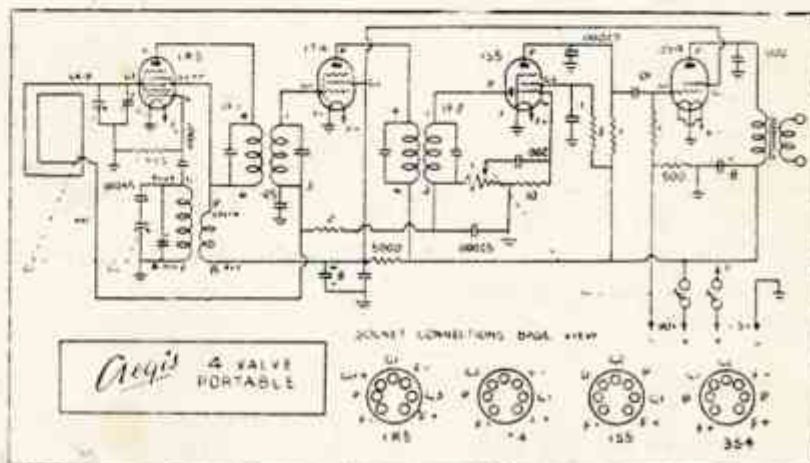
"PERSONAL" Weighs only 4½ lbs., the Aegis PP4 is a powerful 4-valve battery operated Portable only 4 x 4½ x 9 ins. A choice of colours in leatherette case, also all other quality Aegis features. Special price to amateurs plus valves and sales tax!

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A big feature of Aegis kits is their simplicity of assembly and the invariable quality of all components. These ensure added satisfaction both in assembling and in the finished job, for it will give outstanding performance for many years to come. At the right is illustrated one of the simplified Aegis circuits, full working details of which are supplied with every kit.



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