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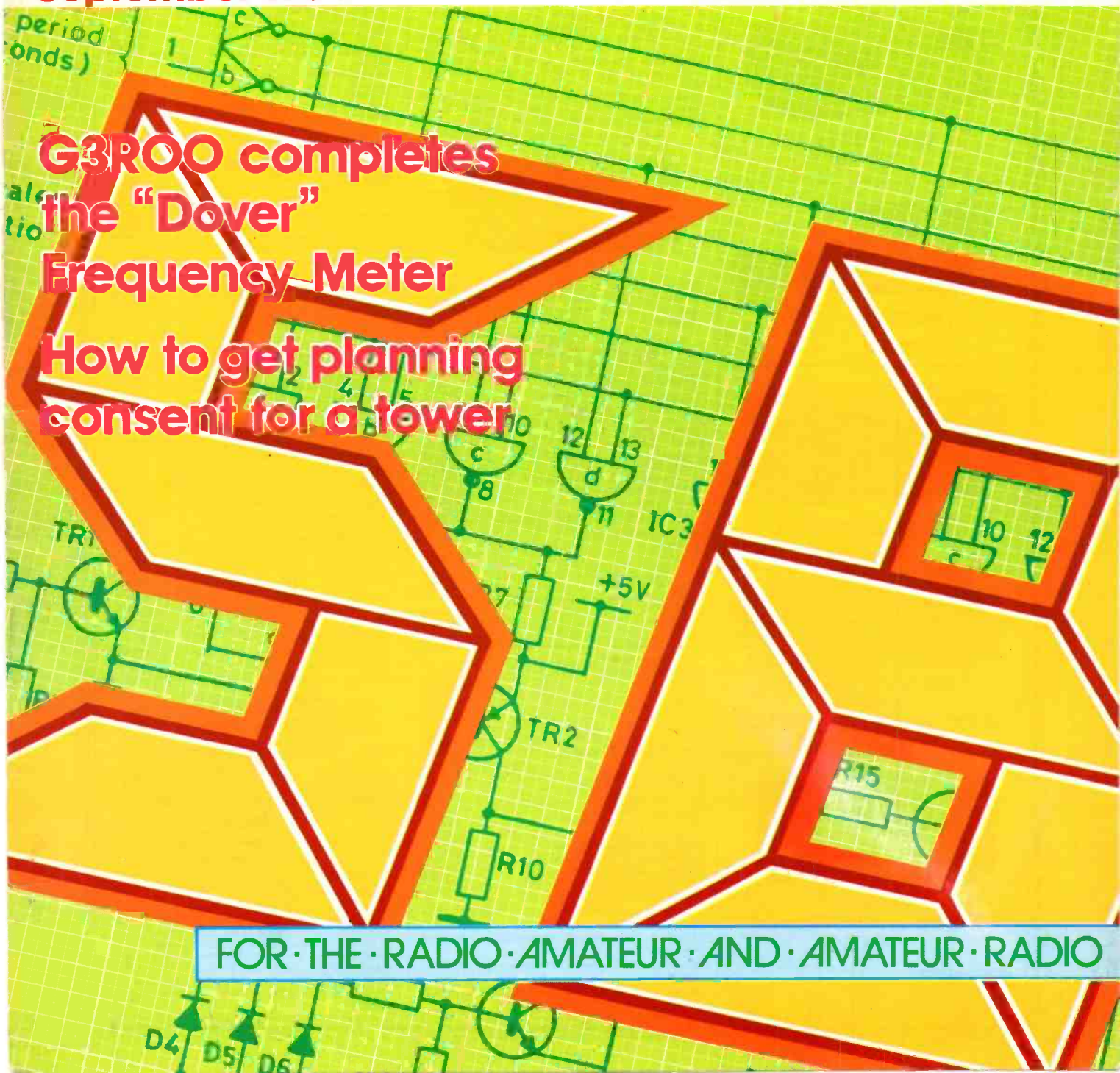
The SHORT WAVE Magazine

September 1984

Volume 42 Number 7



G3ROO completes the "Dover" Frequency Meter

How to get planning consent for a tower

FOR · THE · RADIO · AMATEUR · AND · AMATEUR · RADIO

SHORT WAVE MAGAZINE

(GB3SWM)

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AUTHOR'S MSS

Articles submitted for Editorial consideration must be typed double-spaced with wide margins on one side only of A4 sheets. Photographs should be lightly identified in pencil on the back with details on a separate sheet. All drawings and diagrams should also be shown separately, and tables of values prepared in accordance with our normal setting convention — see any issue. Payment is made at a competitive rate for all material used, and it is a condition of acceptance that full copyright passes to the Short Wave Magazine, Ltd., on publication.

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LOWE SHOPS

Whenever you enter a LOWE ELECTRONICS' shop, be it Glasgow, Darlington, Cambridge, Cardiff, London or here at Matlock, then you can be certain that, along with a courteous welcome, you will receive straightforward advice. Advice given, not with the intention of ''making'' a sale, but the sort which is given freely by one radio amateur to another. Of course, if you decide to purchase then you have the knowledge that LOWE ELECTRONICS are the company that set the standard for amateur radio after-sales service. The shops are open Tuesday to Saturday and close for lunch 12.30 till 1.30 p.m.

In Glasgow the LOWE ELECTRONICS' shop (telephone 041-945 2626) is managed by Sim GM3SAN. Its address is 4/5 Queen Margaret's Road, off Queen Margaret's Drive. That's the right turn off Great Western Road at the Botanical Gardens' traffic lights. Street parking is available outside the shop and afterwards the Botanical gardens are well worth a visit.

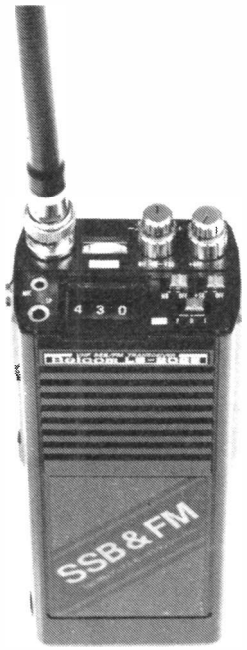
In the North East the LOWE ELECTRONICS' shop is found in the delightful market town of Darlington (telephone 0325 486121) and is managed by Don G3GEA. The shop's address is 56 North Road, Darlington. That is on the A167 Durham road out of town. A huge free car park across the road, a large supermarket and bistro restaurant combine to make a visit to Darlington a pleasure for the whole family.

Cambridge, not only a University town but the location of a LOWE ELECTRONICS' shop managed by Tony G4NBS. The address is 162 High Street, Chesterton, Cambridge (telephone 0223 311230). From the A45 just to the north of Cambridge turn off into the town on the A1039, past the science park and turn left at the first roundabout. After passing a children's playground on your left turn left again into High Street. Easy and free street parking is available outside the shop.

Cardiff now has its own LOWE ELECTRONICS' shop. Managed by Richard GW4NAD, who hails from Penarth, the shop (our telephone number is 0222 464154) is located within the premises (on the first floor) of South Wales Carpets, Clifton Street, Cardiff. Clifton Street is easily found, being a left turn off Newport Road just before the infirmary. Once in Clifton Street, South Wales Carpets is the modern red brick building at the end of the street on the right hand side. Enter the shop, follow the arrows past the carpets, up the stairs and the ''Emporium'' awaits you. Free street parking is available outside the shop.

MOVING . . . MOVING . . . MOVING . . . From the 13th September 1984 the LOWE ELECTRONICS' London shop will be located at 223/225 Field End Road, Eastcote, Middlesex (the new telephone number is 01-429 3256). the new shop, managed by Andy G4DHQ is easily found, being part of Eastcote tube station buildings. Immediately behind the shop is a large car park where you can currently park for the day for 20p. There is also free street parking outside the shop.

Finally, here in Matlock, David G4KFN is in charge. Located in an area of scenic beauty a visit to the shop can combine amateur radio with an outing for the whole family. May I suggest a meal in one of the town's inexpensive restaurants or a picnic on the hill tops followed by a spell of portable operation.



SSB AND FM FOR £225 inc vat, the **BELCOM** LS202E.

Until now, dual mode 2 metre transceivers have been designed for shack, car or shoulder operation. Mobile they may have been but convenient hand portables they were not. That situation has now changed. You will remember that I told you about the new BELCOM LS202E SSB/FM 2 metre transceiver in a previous edition of RADCOM; at the time I said the price would be around £1000. You will therefore be extremely pleased to learn that the transceiver is available for £225.00 inc VAT. Now for a few details; (if you want a colour leaflet to appreciate the full beauty of the LS202E transceiver then ring Beryl here at Matlock, alternatively you could always visit a LOWE shop).

- Full coverage of the 2 metre amateur band from 144 to 146 MHz in 5 kHz steps on both SSB (Upper and Lower) and FM, selection of frequency by means of rotary thumb wheel switches. In addition, a VXO control giving +/− 5kHz frequency shift and RIT with centre click stop are provided on the top panel. For night time operation the frequency readout and S meter can be illuminated by in internal LED.

- The use of hybrid IC's and a miniature SSB crystal filter has made the LS202E even smaller than some of the existing FM only handheld portables. The rig measures 62mm wide, 40mm deep and 165mm high, small enough for your jacket pocket and weighs only 520 grammes.

- RF power output SSB (PEP), FM 3.5 watts (at 10.8 volts)
2.5 watts (at 7.2 volts)
1.5 watts (at 6 volts)

- The LS202E is equipped for repeater operation having both frequency shift and 1750 Hz tone burst.

A comprehensive range of accessories is available . . .

NP6. . . Rechargeable battery pack (7.2 volts)	£22.65
NP9. . . Rechargeable battery pack (10.8 volts)	£31.40
CA91OE. . . AC charger (for NP6)	£8.50
CA11OE. . . AC charger (for NP9)	£8.50
CS912. . . Mobile charger (for NP6)	£6.90
CS112. . . Mobile charger (for NP9)	£6.90
SH1. . . Speaker/microphone	£14.95
SFT207. . . Soft case	£4.80
LA207. . . Mobile console with 25 watt linear	£118.00
AN2. . . 1/4 wave BNC rod aerial	£8.50

LOWE ELECTRONICS
Chesterfield Road, Matlock, Derbyshire. DE4 5LE.
Telephone 0629 2817, 2430, 4057, 4995. Telex 377482.

TR9130 TWO METRE ALL MODE TRANSCEIVER

This rig is proof, if one needed it, that TRIO do not bring out new models just for the sake of it. The TR9000 is remembered as a classic rig and today people are still asking for second hand ones, even they are a rarity on our S/H shelf. The TR9130 incorporates the improvements that all amateurs asked for, green display, reverse repeater, tune whilst transmitting, higher power, more memories and of course memory scan. TRIO's answer, the TR9130.

TR9130 ..... **£458.72 inc vat.**

TS780 DUAL BAND BASE STATION TRANSCEIVER

The TS780 is the perfect base station VHF/UHF transceiver for the enthusiastic operator. The rig has all the necessary control functions essential for operating on both today's busy two metre band and the wide spaces of seventy centimetres. Full repeater facilities plus reverse repeater are included and the transceiver has the usual memory channels (10), two VFO's, up/down frequency shift microphone, IF shift, two priority channels, memory and band scan, etc. A superb rig. I have one myself, ring for a full enthuse!

TS780 ..... **£850.00 inc vat.**

TR7930 TWO METRE FM MOBILE TRANSCEIVER

Those who have used or owned a Trio TR7800 will know what I mean when I say that Trio, with the introduction of the TR7930 have improved on the unimprovable. The Trio TR7930 improves on the TR7800 by giving a green floodlight liquid crystal display, extra memory channels, both timed and carrier scan hold, selectable priority frequency and correct mode selection (simplex or repeater). The most significant change is the liquid crystal display, but closely following this must be the ability to omit specific memory channels when scanning and the programmable scan between user designated frequencies.

TR7930 ..... **£323.30 inc vat**

R2000 GENERAL COVERAGE RECEIVER

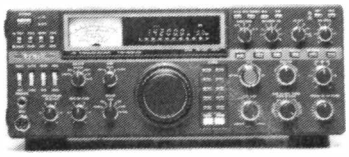
The amateur bands are only a very small part of the radio spectrum, many other transmissions are available for the short wave listener. Broadcast stations provide an alternative source of current information both political and regarding the life style of the country. Fitted with the internal VHF converter the R2000 covers continuously frequencies from 118 to 174 MHz giving access to amateur two metre transmissions (am, fm, ssb and cw) plus a lot more. Having 10 memories, memory scan and programmable scan the R2000 provides in one rig the perfect receiver.

R2000 ..... **£436.75 inc vat.**

TS930S HF TRANSCEIVER WITH GENERAL COVERAGE RECEIVE FACILITIES

Much has been said about the TS930S transceiver and it now has a place high in the affection of those amateurs fortunate enough to own one, indeed it has become the "flagship" of the TRIO range. Providing full amateur bands plus a general coverage receiver (150kHz to 30MHz), the TS930S has every conceivable operating feature for today's crowded frequencies.

TS930S ..... **£1195.00 inc vat.**



TR2500/TR3500 HANDHELD TRANSCEIVERS

Two first class hand held transceivers, one for two metres and the other for seventy centimetres. Ten memory channels, band and memory scan, repeater shift, reverse repeater and a low power position make the rigs extremely useful for the radio amateur who wishes to keep in touch with his local scene. A comprehensive range of accessories, base station charger, speaker microphone, mobile mount, etc, can be added to enhance operation, accessories used with one rig being compatible with the other.

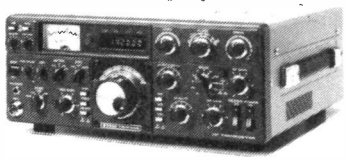
TR2500 ..... **£246.36 inc vat.**

TR3500 ..... **£265.85 inc vat.**

TS530SP HF AMATEUR BAND TRANSCEIVER

A logic progression from the reliable TS520 series the TS530SP was the most popular HF rig in the range. I use the term "was" because TRIO decided to cease production and supplies were no more, however the demand from radio amateurs worldwide for the transceiver have continued and TRIO have reintroduced the rig. A standard HF valve transceiver without the frills but providing today's amateur with all necessary facilities for reliable world wide communication, the TRIO TS530SP. Now fitted with notch filter.

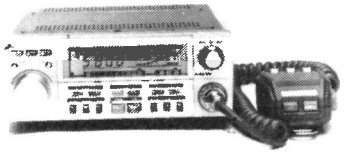
TS530SP ..... **£669.61 inc vat.**



TW4000A DUAL BAND FM TRANSCEIVER

I have been waiting for this rig for the last three years, now it is here and I am using one, words fail me. Send for details.

TW4000A ..... **£488.70 inc vat.**



just a part of the range

Securicor carriage on the above items £6.00

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FOR THE RADIO AMATEUR AND AMATEUR RADIO

The SHORT WAVE Magazine

EDITORIAL

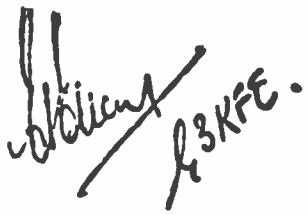
Happenings

Firstly, and most important, the new Telecommunications Act came into force on July 16. It includes power for the Police "or persons authorised by the Secretary of State" to seize apparatus in connection with alleged offences, for the purpose of legal proceedings; power for the courts to order the forfeiture of certain apparatus without initiating criminal proceedings; and power for the Secretary of State to restrict the sale and possession of specified equipment and apparatus. The position of *Short Wave Magazine* on this is quite clear — we welcome this measure, and so we believe will every duly licensed amateur: this long-overdue Act will put some teeth into the law, as it concerns the pirates and intruders who infest our bands. The RSGB is in negotiation with the DTI to ensure that the law is administered fairly (which is a matter of the greatest importance if the interests of law-abiding amateurs and SWL's are to be protected) and, we hope, used actively to clean the bands of pirates.

Secondly, we note with pleasure that astronaut Tony England, W0ORE, will be the guest speaker at the Welsh Amateur Radio Convention on September 30th. W0ORE will be operating HF/VHF during his Shuttle mission in April 1985, and we very much hope that his lecture will be taped for the benefit of members of clubs too far away to attend the Convention.

Thirdly, Operation Raleigh, that imaginative version of adventure training will, it is hoped, carry on its four-year trip some amateur radio activity; the details are being hammered out as these lines are written.

Fourthly, is the news that BARTG has enjoyed an enormous surge in membership as a result of their recruiting drive; the target of 2000 members was set for 1984, and passed last month. It just goes to show that we are not all appliance operators, as it were!



WORLD-WIDE COMMUNICATION

COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

QUITE an eventful month for the writer in the amateur radio social line. Firstly a meeting at the local club to hear G3XAP give his talk on aerials, at which it was noted that about twenty percent of the people present had made WAC on Top Band — and at that, the 'B' licensees outnumbered the Class 'A' types! Then a weekend session at the home of G4BUE, at which the guest of honour was Adrian Weiss, W0RSP, the QRP columnist in *CQ Magazine* — the man who is doing in the U.S.A. what G3RJV is doing for QRP in this country. At that session there were some real DX-ers and some real QRP merchants, all together at a most friendly chat evening from which your scribe recalls such diverse topics as the removal of hedgehogs from under the shack, the history of FOC, and why G4BUE covers his VHF beams with plastic netting. (Why? — to keep the birds off; why? — because they're right above the washing line!)

The Bands

With the fine weather of the past month, and the occasional storms to break it up, one didn't have to be a genius to guess that the prevailing problem would be *noise* (and gardening!). This situation has not been made any better by poor conditions, and of course it must be accepted that we are well on to the downward slope in terms of sunspots. It is a thought, though, that back in 1976, at the bottom of the cycle, we were being told that the peak of the cycle would only just about reach the level we are seeing now!

The Mail

Quite a big pile this time, so we might as well get on with it!

We could do worse than start by mentioning the contest and DX-pedition scene, and first we have the 1984 CQ WW DX Contest, with Phone over the weekend October 27/28 and CW over November 24/25, starting at 0001 on the Saturday for 48 hours to midnight Sunday. Categories are: single-operator single-band, single-operator all-band, multi-operator single-transmitter, multi-operator multi-transmitter, QRP and Team. A Team to consist of any five radio amateurs operating in the single-op category; a team *must* operate from two continents, and the team score will be the sum of the teams members' scores. A member of a CW team can be in a totally different team for the SSB contest. Exchange RS(T) plus your Zone, for example 579014 from U.K. Note that if a station is in a different Zone to that indicated by the call, he is required to sign portable. Multiplier of one for each Zone contacted on each band, and another of one for each different country contacted on each band. Own country and Zone can be worked for mulitplier credit. Points are: 3 for a QSO with a station on a different continent, one for a QSO with a station on the same continent; contact with one's own country score no points but acceptable for multiplier credit. Score is QSO points total times the sum of your Zone and country mulitpliers; the DXCC list, CQ Zone Map, WAE country list, and WAC boundaries are the standards. Log entries: 80 QSOs per page, 8½" x 11", plus cross check sheets (compulsory on any band on which you have 200 or more contacts, encouraged otherwise). Logs, complete with summary sheet and declaration to be postmarked not later than December 1 for Phone, and January 15 for CW, addressed to CQ Magazine, 76 North Broadway, Hicksville, NY 11801, U.S.A.

Along with the CQ WW DX Contest Rules, we received from W1WY his Contest Calendar, from which we note in September the Scandinavian Contest — CW September 15/16, Phone September 22/23, 1500z Saturday to 1800z Sunday. Logs with summary sheet and declaration, plus a dupe sheet for logs with more than 200 contacts, to be mailed by October 30, to Mgr. Gorgan Granberg, SM6EWB, Rosengatan 76, S-43400, Kungsbacka, Sweden.

In October we note October 13/14 carries the VK/ZL/Oceania Contest and the ARCI QRP contest — the CW chaps have a field day, but the Phone leg of the VK/ZL/Oceania affair is the previous week.

Also in October, but nearer home, the Yeovil club have their QRP Convention, on October 14, at Preston School, (Preston Centre), Monks Dale, Yeovil, access being *via* Preston Road and Larkhill Road. Talk-in from 0900 on S22, Convention opens at 0930, and the first lecture starts at 1000. More details from Eric Godfrey, G3GC, on Yeovil (0935) 75533. We hope this one is well supported, but we do feel that besides us, they could have passed the work on to the G-QRP Club Secretary for mention in *Sprat*.

That Mt. Athos DX-pedition by DJ5CQ is beginning to look as though it might have been above board; the QSLs are beginning to come through, and it is understood the documentation is on the way to ARRL.

Rumour has it that the second Laccadives team from last January is now getting set for another trip, to the Andamans in September; and another one has it that OH2BH is hopeful of getting his documentation and permissions all cleared for a visit to Albania — but on the other hand LA9PCA indicates he wasn't able to get permission to take a rig into that country.

If you hear a V4 callsign, have no fear; V4A-V4Z has been allocated to St. Kitts/Nevis, according to F8RU as reported in *DXNS*.

Also in *DXNS* we note the JAs operation from China coming up between the writing of this and it reaching you will be by BY5RA, Fuzhou City. QSL address to Box 730, Fuzhou, China. The same source indicates JW3NI until November, JW5IJ till 1985, and JW6BAA on Bear Island till November too.

As for the repeat of the 1S1CK operation that was being bruited, *TDXB* has it that this one is, as it were, now on the back burner.

The VK9NS DX-pedition rumoured of late seems to have gone a bit awry, as we now understand that VK9NS is going back to P29 for about a year and will be on as P29JS again.

Ten Metres

At this time in the sunspot cycle mid-summer can be expected to be a little *flat* — so what we have in the way of reports is very encouraging.

Let G4VJK have first shout; John became an SWL back in 1932, but didn't become G6ADH until 1981, and G4VJK until October 1983. So far some 91 countries have been worked on Ten since January 1 — but, of course the QSLs are very slow in coming in. Interestingly, John says that his difficult countries are Australia and New Zealand, with Greece and Spain also less than reasonable over QSLs.

At G3NOF (Yeovil) nothing outside of Europe has been worked, although Don is aware that others have worked some North and South Americans His only QSO of note was with C30LBN on SSB.

At G3OUC (Newbury) operating has had to take a back seat compared with property renovation and aerial farming. Pa[illegible]uilt a ten-metre FM box but as he

says, it is hard to work up enthusiasm for the mode as compared with SSB — true, but if we get more active on Ten, and keep the commercial and CB stations out, it may save us the loss of a band! On a different tack, G3OUC mentions a local SWL who has just obtained his RAE pass, starting from zero knowledge of the subject and with no classes to attend — all his own work. Congratulations, unknown SWL! Change of theme again, to a Top Band QSO with a special-event station, on SSB, where the operator gave Pat a report of "you are five and nine and fully quieting. Could you repeat your call because I only received the last three letters." Corblimey!

What a band it is! Thus G4PGW (North Molton) who heard most of Europe and worked some with his FT-902 plus Zepp-fed eighty-metre dipole during July. On 26th there was a back-scatter QSO on CW with F6IGO in Le Mans on 28.005 MHz, through the Italian CB QRM, with LU and PY beacons heard and PP5HI worked. July 28 gave G3ID then PP7AN, while 9L1FTN was heard on 30th with nothing else audible.

The point that G4PGW is driving at is that to put out a CQ call on an apparently dead band is often going to result in a contact at good strength. Nigel also appeals for more activity on the band, to combat the CB intrusions which he reckons are getting far worse.

If ever anyone was a dyed-in-the-wool 28 MHz addict it is G4HZW (Knutsford), still using his TS-820 and Quad on this band, mainly on SSB but with the odd one or two on CW. Tony notes QSOs with 4X6FR, CE3HFI, LX4HS, FY7AN, LU8YYO, PS7KM, UH8EWW, UF6, UA6, RB5, UC2, UQ5, HB9, EA, HG, OK, SP, I, SM, LA, OH, OZ, DK, PA, and very close ones with GM3MAT, GM3TCM, and GK0JFK; there was also a VE1 heard — but the chap went QRT before Tony could call him!

Finally for this band, G4NOZ (Colchester) who noted a couple of openings — one early in the month and the other the weekend prior to his letter, and both largely filled with thumping 59 reports from Bavaria, Lithuania and Yugoslavia.

Fifteen

There are all sorts of QRM, and G6QQ (Hoveton) found himself with a family visit which turned his shack into a bedroom and reduced him to activity on only eleven days. David used SSB to raise EL8E and W4MAT/SV9, while CW was preferred to tangle with VU2HF, 3B8FK, C30BAV, UD6DC, WD4LGE, ZS6ARK, JG1DFL, JI3QPN, ZS6BCI and 9V1TL.

G3JFS (Taunton) hasn't been long at the present spot; it is well named "Trees" as there are lots, and all protected by a preservation order, so it is likely that much RF heating is dissipating the signal going out. So far the station has gained a 150-foot end-fed wire which promptly disappeared into the foliage, and a dipole for 21 MHz which has been giving some pleasant evening CW contacts, including one to VE2 who was just readable but came back with a 599 report!

David Jones, GW3SSY, in his shack at his Abergavenny QTH. Licensed as G3SSY in 1964, David's first station comprised a converted ex-government TU-5B tuning unit (6V6 VFO, 6V6 PA), Morse only, and a 19 Set for listening, progressing later to a KW Vanguard and AR88D. GW3SSY was a police officer in Epsom, retiring from the Force in 1979 and moving to Wales where he is hon. sec. of Abergavenny & Nevill Hall A.R.C., and tutor for the club and Ebbw Vale College of Further Education R.A.E. courses. The rigs in the picture are, left to right (middle shelf), HW-8, HF and VHF VSWR's ATU, and aerial switching; lower shelf, HW-101, FT-480R, FRG-7700 and, in foreground, computer desk. Out of the picture is GW3SSY's impressive range of test equipment.

Conditions generally have been poor, says G3NOF. Don heard only one VK and a few JAs, with nothing from the Pacific, and skip often short from 0730z to 2200. The odd African was noted around 1000, the band then fading out until around 1500z before again dropping out progressively northwards around 1800z close. South America was noted 2000-2200z. It added up to SSB contacts with A24SC, C30LBO, DA2AA/OH0, EL8E, FR7CY, FR0FLO, G8KW/5N8, IT1HLO/IF9, HC1BP, HH2Q, HI3RST/KP5, HI8GB, HK0HEU, J88AB, JA2NVM, JA4EKO, JE4OFE, JH9FKI, JY5CI, KC7UU/5N6, LA6BBA/OH0, ON5NT/HB0, ON7VD/5N4, TR8CR, TR8CS, TR8IG, UI9BWF, VK4BJD/6, VP2ML, VP8AXJ (Falkland Is.), VS6CT, YC4FS, YC0BYZ, YU3GL/5B4, ZC4WW, ZD7BB, ZD8DT, ZD9CC, ZS1AAQ, ZS1AP, ZS1JD, ZS1SP, ZS3GB, ZS5BN, ZS6AN, ZS6ATA, ZS6AUB, ZS6AXC, 4K1A (Antarctica), 4S7NE, 3V8AI, 3V8ZY, 4U1ITU, 4U1VIC, and 5B4MF.

Fifteen for G4NOZ was PY2PDK followed by PY4AGR who foundered in the QRM before the contact was totally complete. Others were R5W, a 'special' from Lvov operating in the Baltic, and U5ED — a commemorative of the events of forty years ago.

Snippets

One wonders just what will result from the recent appointment of Christopher Pettit as the new Managing Director at Eddystone; he is, relatively speaking, a local person, and has been interested in radio from the age of eleven. He aims to bring Eddystone back to its rightful position as the biggest name in communications radio equipment, from its present position of some 50 people and a £3 million turnover. If the diversification and new products include things we can embody in our stations, who are we to complain?

BARTG sent along their Spring Contest results, and we note ON4UN at the top of the single-op listings with some 817028 points from 407 contacts for a score some 350K up on second placed YU7AM. The first G station was G3HJC in Hull, at 20th, in an entry of some 74; the total entry, including the SWLs and the multi-ops was 104.

From G4BUE we have a note of the TOPS CW Activity Contest, always held in the first weekend in December; that gives us 1800UT December 1 to 1800UT December 2. The 1983 contest included a QRP section, and the activity was greater than ever with some 500 stations being

operated. This one is all on Eighty, and it is to be noted that to call in the bottom 12 kHz of the band, and then work someone in your own continent results in the QSO being deducted from the log. More details from G4BUE, QTHR.

A long and interesting letter came to hand from G3EKX in Truro, who used years ago to build those 'Sphinx' transmitters — the writer recalls using one for his first bash at SSB. After some 16 years off the air, Norman has come back on with a new 'Sphinx' built out of the junk-box and a BC348 on the receive side.

From VP8ALJ we have a copy of the VP8 callsign list; it shows a total of 412 callsigns, plus another long list of 'special' two-metre calls allocated to various commercial and service organisations. That must be getting very close to the largest percentage of amateurs-to-population in the world.

Twenty

Is still, and probably always will be, where the action is, in the last analysis. However that may be, it cannot be denied that the summer weather and the summer conditions for that matter, have contributed to a certain shortage of enthusiasm and hence of reports.

However, we have some; starting with G3NOF, he didn't find many VKs and no ZLs in the mornings, but there were a few Pacific stations, notably VR6TC on 14145 kHz, most Sundays. SSB QSOs were made with A4XJV, BV0AB, CE8ABF (Tierra del Fuego), CT2CQ, CT2EJ, F0CH/TK (Corsica), HH7PV, HI3RST/KP5, HK5BCZ, HP1XJN, I2DMK/IL7, ID7AUC, J37AH, K5KG/OH0, KH6IJ, KH6JEB/KH7, NL7G, ON5NT/ON0, RV9FQ, T32AB, TR8CR, TR8CS, UA0FF, V2AZM, VE5XV, VE7ATP, VE8RCS, VK2EBX, VK2HD, VK6GX/AM, VK7GE, VP9CP, VQ9BC, WB8QPG/HP2, WL7E, 3V8AI, 3X4EX, 4U1ITU, 5B4JE, 8P60V, 9Y4NP.

G4VJK says he enjoys operating the band but doesn't mention particular QSOs, save that he is up to 172 countries worked now; John also says he would like us to include, as we used to, a listing of QSL addresses each month.

The activities at G2HKU (Sheppey) have been more to do with the garden, like cutting branches off trees and other such strenuous activities; however, W4MAT/9, OH6AD, LX1CC, 4U1ITU, NP4CC, OY2A, F6AXP on Re Island about eight miles from Cherbourg, all worked on SSB, while the CW accounted for KH6IJ, FO0KI (not in the Pacific but France!), RJ6R (Oblast 42), YV5BNR, and XO3CRG. Turning to the QRP rig, Ted managed KB1W and UA9XR with four watts input.

From G6QQ we get a picture of not much activity on the band, although David did snap up KZ3AAW, K4SSV, LU1BSN, all on CW.

The WARC Bands

G2HKU tried 10 MHz, for CW contacts with VK3MR and YU3TW. On 24 MHz, the eight watts keyed to DL8MX, OE3HGW, DF2NL, F6FZT, PA3AFF, and OE1UKU.

G4UZN (Leeds) puts in a plea for *less* in the way of mentions for these bands, lest the beams and the QRO number-swappers get on. However, G4UZA reports his own contacts; 10 MHz gave him CW contacts with CT1CO, CT2FN, C30BAN in Andorra, ON5NT/HB0, DK4AN/IS0, SV1KU, 4U1ITU, plus DX stations in DF3GX/PJ4 (Bonaire), VE7VC, VY7BXO, VK2PA, VK3MR, VP2MIX, W5TZC, W7BNK/0, K7SP, and AA0N. On 18 MHz, there were various EUs, plus IS0OMH, OY7ML, and LU1DOW; while 24 MHz gave contacts with various EU stations plus OY7ML and LU1DOW.

G3JFS says the 10 MHz band has been particularly poor whenever he looked at it — about a dozen contacts all told, all Europeans, and no DX at all even heard.

Top Band

Where the dedicated types play, this! G3OUC says his domestic renovations included getting his vertical up to sixty feet with the agency of a handy tree, but the recent tragedy when a couple of CB-ers managed to put their mast into the 11 kV lines at Pat's favourite /P spot, with fatal results, brought to mind the noticeable increase in the number of kite-flying exercises heard on the band, and the thought that these should be kept well away from all overhead mains and grid wires. At home, G3OUC used his 25 watts of SSB and vertical to work DF9ZP, DJ8WL, OE2HCS, GI4ERM, GI4MKC, and the usual locals.

G4OBK (Chorley) found the month noisy but exciting. On July 27 there was a superb, noise free evening, and VK6HD appeared, to be snapped up by G3FPQ, G3KMA, and G4OBK, to give Phil his WAC on the band. Earlier in the evening HZ1AB was heard, but not worked; it is believed that the high noise level at the HZ end was the cause of the inability of the European stations to raise him. Another one of interest was SV0AA/9 on Crete — not a big signal but workable. It added up to three contacts with 4U1ITU, one on CW and two on SSB, plus CW to SV0AA/9 (Crete, QSL *via* N20O), VG1ASJ (a special VE1 prefix), UG6GAW twice, PY1BVY, PY1JF, SV1JG, I6SNP, VK6HD, K1ZM, K2EK, OH0PA, and a long natter with G4AKY.

That fifty foot top at G4AKY is doing quite well; Dave worked CW to IK1EQF, UC1CWD, RB4IOZ, UA3UEW, UA1AMR, UL7MAN, a daffy of OK/OL stations, EA5CF, OE9JKH, UO5GQ, PA3BXC, PA3ADA/A, DL2YJ, DL9WW, DJ3HW, VE1ZZ, ON5NT/HB0 (QSL *via* ON7FK), and SP5INQ. SSB gave EA4KL, On the gotaway front, we note CP8HD, UG6GAW, HZ1AB, SB0AA/9, 9M2AX, VK6HD, and some East Coast Ws. Incidentally it seems certain that the VK6HD was a good one — Mike was on Eighty just before he popped up on Top Band and was heard to say that he thought the band had opened to Europe.

G3EKX (Truro) says he has about 100 feet of wire out, loaded up without benefit of ATU on Top Band or Eighty, and he is busy renewing friendships after his long period of inactivity.

Now G3BDQ (Hastings), who reckons his month was made by a visit from G3RJV one sunny afternoon. The main activity has been yet more aerial farming; another ten feet of height on the pole at the far end, a shortening to bring the current loop to the chosen point has brought up the commercial QRM somewhat, made the G signals go down a bit, and brought up the DX quite a bit. On a try-out, HZ1AB was worked, followed by UA9FKM. That was about it, thanks to the static, which was really bad almost all the time. Reverting to the aerial theme, John notes that a further 300 feet of counterpoise wire has been added, radiating from the aluminium greenhouse.

"CDXN" deadlines for the next three months:

October issue—September 6th
November issue—October 4th
December issue—November 8th

Please be sure to note these dates

Finally G2HKU (Minster); Ted had his usual sessions with PA0PN on SSB, plus CW with KT3M, SP5INQ, OL1BJK, DL9IQ, K5KG/OH0, OZ1W, LA4Y, DJ4IY, and DL2YJ.

Eighty and Forty

Now that G2HKU's letter is on top of the pile, we will start with him. On Eighty it was all QRP, with four watts input to work ON4WD, ON6OG, GM4SID, DJ0OS, and GM3BEX/A.

G3EKX has been on Eighty, particularly in the RAFARS nets, and is enjoying renewing old friendships, but one thing he does notice is that conditions haven't been too good, with heavy QSB. On a different tack Norman notes the long overs and reckons there is no need for this, with SSB, citing the much more relaxed operating of some of the CB types.

G4NOZ tried Forty in the mornings around 0445, when OKs and SMs were noticeable, but he also notes that others have reported VKs and such.

GW6VZW has been doing some listening on Eighty and Forty as part of his son's education; they are using a JR-310 plus ATU to a five-band vertical, between 2200 and 0200 and 0600-0800. On SSB, Eighty has shown with A71AD, A22ME, CP5RJS, C53AL, FM7WS, HH2MC, HI8JO, HC6CRC, HK0HEU, J37AH, KP4FI, KH6CC, assorted South Americans, T77V, TF3TF, DX'y Russian stations, VEs, VO1CV, VP8ML, VK9NS, VP2MF, V3FB, VU2DVP, all W call areas, ZLs, ZSs, ZB2HX, ZD7CW, 3X4EX, 3V8PS, 5T5CJ, 5Z4ED, 7P8CM, and 8P6OV. Listening times on Forty were 2100-0100 and 0630 to 0730, yielding A71AD, AP2ZR, A92P, CN8, CP6, C31BD, C53AL, South Americans, D44BC, ELs, FM7WE, HS1HO, JAs, JY9CL, JW5NM, JX5DW, TG9s, TR8IG, Asian Russians assorted, VEs, VKs, VU2JDQ, VO1s, YB2OT, OE8AJK/YK, ZSs, ZLs, 3X4EX, 4S7, 4Xs, 4K1GAG, 5R8AL, 7P8CM, 9H1s, 9K2DZ, 9J2LG, and 9M2DF, not to mention scores of smaller fry.

A new reporter is GM4XQJ (Falkirk) who uses a Heathkit SB-101 and a G5RV aerial at 35 feet. On CW Brian worked DF6PR, DK9DI, DL2YBE, DL9FDG, EA2NF, EA5CF, EA7BDK, EC2AJU, G3BEC, G3PZP, G3SRQ, G4OKB, G4SJA, G4WMI, G4VJR, G4VQJ, GW4PAF, GU4XEA, LA1DZ, LA3WIC, OH2SQ, ON2WX, OZ4TF, PA3CP, PA3DK, SM2BXI, and SP2MHB; as for SSB, it was used for DL5JP/P, EA8AHB, EI8EI, EI9FG, G3TEX, LA9PX, OK3CFA, and PA3DAF.

G6QQ cast a beady eye on to 7 MHz last time around, and as a result W3EEK, CM3HG, K2EK, W2QN, WA2ALP, KY2P, VK3MR, W2QN, HK1APN, PT2ZV, VK3VJ, KO3N, N3DWZ, N2BOG, and KC3MR were all entered into the log book. David's operating was done in the period 0430-0600z.

G3JFS found conditions somewhat unpredictable; for example at 1500z on July 13 there wasn't a G station to be heard, but lots of mittel-Europa stuff at good strength; a few days later at the same time the northern Gs were pinning the S-meter and blotting out locals less than a mile away! However, G3JFS says he hasn't the patience to dig into such a mess for the DX that is known to be underneath, nowadays.

G3BDQ is mildly addicted to Forty, and often takes a peek; he found a pile-up on F6GXB/T who was operating as though he was DX — whereby everyone thought he was on Tromelin. He came back to a first call from G3BDQ, and other CW stations worked included such as UL7TAQ, UA9COT, UL7ECH, VK2KM, VK3MR, and UA9FEX, plus a few Europeans.

We come now to G2NJ (Peterborough) who mentions interesting contacts with G2CNN/A who was getting in well with his HW-8 from Brill, Bucks; he worked F6HEW before G2NJ did. From Brill, G2CNN was going to Norfolk for a few days, and then off to Hampshire. G4KKI was another interesting QRP contact on the eighty-metre band, from Southport and using a kite aerial. PA0GG continues his QRP tests, and was audible from 2030 to 2100z at RST579 most of July, around 3550 kHz. On the maritime front, there was PA3ARC/MM, heard working ON5NO with a very potent signal from about four miles off Dungeness on the way to Spain. Another one noted was SM0KRW/MM one lunchtime, calling CQ. An unusual CW signal heard was GW4/SM5CXC/M, an XYL by the name of Gunilla who is a member of TOPS CW Club, who was heard to work GW6AQ, the club call, operated by GW8WJ, the Hon. Sec. She also worked G4GBG, net controller for the club European net on 3534 kHz on Sunday evenings.

Finishing

That seems to be about it for another month. Deadline for next time is in the 'box' in the body of the piece; it is the date by which your letters should *arrive*, addressed as ever to your conductor, "CDXN", SHORT WAVE MAGAZINE, 34 High Street, Welwyn, Herts. AL6 9EQ. Till then — cheers!

Stop Press: it appears that the Taiwan Government is now issuing amateur radio licences; it is understood that a large number of applications are being processed, and so new calls should be appearing on the bands by the time this reaches you.

An Audio Frequency Clipper/Limiter

A SIMPLE RECEIVER ADD-ON UNIT FOR IMPROVED OPERATING CONVENIENCE

P. C. COLE, G3JFS

THE circuit to be described is a simple volume compressor using a shunt type diode clipper that can be built as a separate self-contained unit for connection between a receiver output socket and a pair of headphones. Its main purpose is to protect the operator against being deafened by strong signals when searching on a crowded band; but with careful adjustment of the receiver gain controls it will also help considerably to improve the readability of weak signals in the presence of pulse type interference or high amplitude static crashes.

How it Works

A clipper is a device or circuit that limits the instantaneous level of a waveform or pulse to a predetermined value. To achieve this there are several different circuit arrangements which could be used, but for sheer simplicity and low cost the shunt diode limiter outlined in Fig. 1(a) cannot be bettered.

D1 and D2 are any general purpose silicon diodes, such as the type 1N914, connected so as to limit the amplitude of the signal at the output to the characteristic barrier voltage of the diodes. First consider D1: as the input signal rises positively the output across the headphones also increases until it reaches about 0.6 volts, at which point D1 starts to conduct and shunts the signal to ground. Further increase in the input level only serves to make D1 conduct harder but there is little or no increase in output. D2 works the same way for the negative half cycle of the input signal, so that

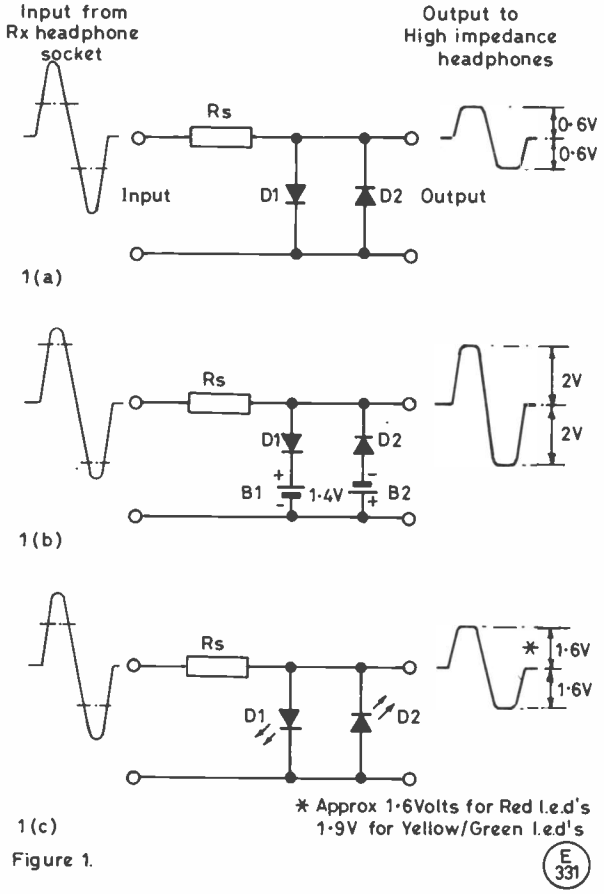


Fig. 1. (*a*), principle of operation of a shunt diode clipper/limiter circuit for connection between headphones and a receiver output; (*b*), reverse biasing of the diodes to increase the clipping threshold by the battery voltage; (*c*), using LED's as clipping diodes to take advantage of their higher forward conducting voltage — approximately 1.6v for Red LED's, and 1.9v for Green and Yellow ones.

between them D1 and D2 clip or limit the output signal to an amplitude of 0.6 volts peak (or 1.2 volts peak-to-peak).

The clipping action of this simple circuit is very effective but the resulting signal level of only 0.6 volts peak, although enough to drive most sets of headphones, is a bit on the low side for normal operating. From practical tests it was found that a signal of 1.5 to 2.0 volts was needed so as to have plenty of gain in hand, and Fig. 1(b) shows one way of raising the clipping level by reverse biasing the diodes with single-cell batteries. This idea works well, and in fact designs based on this circuit have appeared regularly in *The Radio Amateur's Handbook* for very many years but, of course, the batteries are an added complication which is best avoided if it is possible to do so.'

An easy way to do this is to replace both D1 and D2 by two or more diodes in series, and it was whilst experimenting with an assortment of diodes from the spares box that it was found that red light emitting diodes (LED's) start to conduct at about 1.6 volts (other colours at about 1.9 volts) at shown in Fig. 1(c). Hence by using LED's in place of conventional diodes at D1 and D2 the desired signal is simply obtained; in addition there is the added advantage of visual indication of the onset of clipping since the LED's light up as they start to conduct. This feature of the design has been found to be very useful for getting the correct settings of the receiver controls under actual operating conditions by (*a*) avoiding excessive clipping which can seriously degrade the overall signal/noise ratio, (*b*) achieving the best performance when using the circuit as a peak noise limiter, and (*c*) employing it as a tuning indicator when using highly selective audio frequency filters.

Table of Values
Fig. 2

R1 = 100R, but *see* text
RV1 = 10K log. pot.
P1 = jack plug to suit main receiver
J1 = open-circuit jack socket to suit headset
D1, D2 = LED's, use red for 1.6 volts, yellow or green for 1.9v.

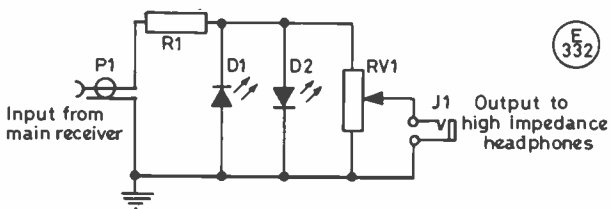


Fig. 2. Circuit of the Clipper / Limiter unit

Construction

Fig. 2 shows the final circuit of the clipper/limiter unit. The prototype was built into an *RS Components* metal-panelled plastic box about 3½ x 2¼ x 1½ inches in size (Stock No. 508-504). P1 is at one end of a flying lead for connection to the receiver headphone socket. The other end of this lead enters the side wall at one end of the box *via* a small rubber grommet tight enough to grip the cable, and the leads are secured onto a tag strip which also mounts R1. J1 is a standard open-circuit jack socket mounted at the other end of the box, whilst RV1 and the LED's are mounted on the front panel.

Operation

To get the best results from the unit the main receiver controls must be properly adjusted and the following procedure is suggested as a starting point:

(*1*) Connect up the unit and set RV1 to its mid-position.

(*2*) With the receiver RF/IF/AF gain controls at their normal settings, tune-in a strong carrier to produce an acceptable beat note.

(*3*) For CW operation set the receiver AF gain so that limiting just occurs as shown by the LED's lighting up.

(*4*) For voice operation set the receiver AF gain so that limiting occurs only on the signal peaks.

(*5*) Finally set RV1 for a comfortable listening level.

The circuit as described is intended for use with high-impedance headphones, so that where a low impedance set is in use there might not be enough audio for comfortable listening. In this case R1 should be reduced in value so as to get the correct signal level. Here the aim should be to keep R1 as large as possible in order to limit the current flowing through the LED's at high signal levels whilst passing enough signal to drive the headphones; however R1 must not be so large that the main receiver AF gain has to be advanced too far to compensate for the insertion loss of the unit.

Final Comments

The first impression on using a circuit of this type is quite likely to be that the receiver has lost its sensitivity, but this is due to the psychological effect of cutting all of the big signals down to a tolerable level. This feeling will be dispelled once some experience has been gained in using the unit and its usefulness for reducing operator fatigue can then be appreciated.

The DX-er's Guide to Planning Consent

RON STONE, G3YDX

Of the many letters we receive, a considerable proportion are queries connected with obtaining planning permission for masts and towers: recently the number of enquiries has markedly increased. To answer them, we can do no better than reprint this down-to-earth article on the subject — which first appeared in the July 1980 issue of "Short Wave Magazine". References to the Home Office should now be read, of course, as Department of Trade and Industry.

WITHOUT an efficient aerial in the clear, two things are inevitable. You won't work much, and you will get raging TVI.

In 1978 the author moved from a terraced house in East London to a 'semi' in the relative countryside of Basildon New Town. Having used a small quad in East London, with excellent results, another beam was required at the new QTH.

Enquiries from the local amateur population established that Basildon was a desert as far as amateur aerials were concerned. (The most ambitious local installation was a 30-foot pole with some small VHF aerials on it.) Outside the Borough, HF quads and yagis sprouted like weeds. The reason for the lack of aerials seemed to be the firm line taken for years by the local authority and the New Town Development Corporation. This stance was based upon a quasi-obsessional dislike of external aerials and their effect on the local 'wirescape'. Indeed, a piped TV system had been installed to rid the skyline of domestic TV aerials.

The Town and Country Planning Act, 1971, stipulates that any 'development' (and an aerial and mast constitutes 'development' within the meaning of the Act) requires planning consent. The only exception to this rule is in connection with structures which are less than three metres above ground level. These do not need permission, but they are not of much use to radio amateurs.

Do not take any notice of the many self-appointed experts who assure you that "anything connected to the house" . . . "lower than ridge height" . . . etc., is OK. Anything and everything requires planning consent if any part of it is more than three metres above ground level.

Several courses of action were therefore open: (*a*) work 2m. FM with an indoor aerial; (*b*) give up; (*c*) move; (*d*) put up tower and beam regardless; (*e*) apply for planning consent.

However (*a*) is laughable . . . it is *because* so many amateurs take this course that inadequate TV receivers are still churned out by the million: if we all went on the HF bands during TV hours, instead of creeping off to 2m. FM like mice, the statistics would show that there was a problem, and then maybe TV manufacturers would be forced to design their sets adequately; (*b*) is unthinkable; (*c*) is uneconomic; (*d*) is very risky: Councils are empowered to issue enforcement notices against unauthorised development, with heavy daily penalties for those who do not remove the offending structure; an amateur who has followed this course and who receives an enforcement notice should contact his solicitor *at once* (after a structure has been up for more than four years it acquires squatters rights, but even then permission, which is rarely refused in such cases, must be obtained to regularise the matter).

This leaves (*e*) as the only course of action that remains. To achieve one's ambitions, a full understanding of the procedures involved, determination, and a great deal of patience, are required.

How to Proceed with an Application

Get in touch with the RSGB: The Society produces an excellent broadsheet entitled "Planning Notes" by Bob Price, G4BSO. The main points of the Town and Country Act that affect amateurs are mentioned, and there is some guidance on applications and appeals. Also available from the Society is a specimen application which contains some very useful material. The Society also has amongst its membership a small number of amateurs who are solicitors. These volunteers can help members of the Society with advice on planning matters; but since they are acting in a voluntary manner, they cannot be expected to devote an inordinate amount of time and trouble to any one particular case. There would, however, be no objection to engaging any solicitor to give advice on a strictly professional basis.

Go to the next Planning Committee meeting: Your Council will be able to tell you the date and venue of the next meeting of its Planning Committee. It is worth attending, as it will give you a better idea of the procedures involved.

Meet your Council's local planning officer: The Council's local planning officer's job is to assist and advise all parties with regard to planning applications. He will give you much valuable advice. However, he is employed by the local authority, and should you eventually appeal, he will probably prepare the Council's case against you: it it therefore best to treat him with respect. It will be easier for both parties to discuss a possible application if you arrange to meet him on site. If he has been in his post for some time, the planning officer will have a good idea of how the Planning Committee will react to an application. However, they may surprise him from time to time and reject something he felt would be certain to pass! The planning officer will probably know of other masts, and this may or may not help your case. Incidentally, *never* talk to anybody about a 'tower'; always refer to a 'mast'. A 'tower' is a thing like an electricity pylon to most people, and they will not want one of *them* next door.

In the author's case, the planning officer looked at the prepared drawings and said that he thought an application *might* succeed. Do not ask a planning officer to commit himself. He is only a servant of the Committee, after all.

Go and see your neighbours: This step will require some nerve, *but it is worth it.* If you have TVI, let's hope you have put in the required amount of time, effort and firmness with the neighbours, to cure it. If you haven't got to grips with TVI you don't deserve a tower and beam anyway; you don't even deserve to hold an amateur licence.

Tell the neighbours what it is all about. Ask them what their hobbies are and express an interest in them. After all, you have invaded the privacy of their home to talk about *your* hobby and you want to get a conversation going. Show them that you are interested in what *they* think and how they feel about your proposal. Then when they bridle a little at the thought of a 60-foot monstrosity over the fence, assure them that you couldn't possibly talk to King Hussein with anything less, and how would they feel if *they* couldn't enjoy *their* hobby. Remember all the time that they can make a lot of trouble for you by writing to the Council objecting to your proposal, and that objections will tell heavily against you.

The specimen application from the RSGB contains an excellent idea which prospective applicants are advised to follow. After

discussion, neighbours are invited to sign one of three lists as follows:—

(*a*) I object to the proposed mast and aerial because . . .
(*b*) I have no objection to the proposal, provided that . .
(*c*) I have no objection to the proposed mast.

By that stage you know which one they will want to sign! If you really want your mast, they should all be converted to (*c*). The doubtfuls will put something minor into (*b*). In a face-to-face confrontation situation like this, people will only rarely sign (*a*). If they do, you have probably said something out of place. If you get signatures to (*a*), all is not lost, as at least you have an idea of how things stand and you have some evidence in case they produce a different story later on.

A tower and beam being a thing of beauty and a joy forever, the author did not bother to consult his neighbours. He just made an application.

The result was that when the local press included the author's proposal in their weekly 'planning applications received' column, a self-appointed rabble-rouser went around with a 'petition' which read "I oppose the application for a radio mast at . . .". Needless to say, they all signed it. Why not? Got him off the doorstep, didn't it?

When the author learnt that the Council had received objections, he then visited the neighbours. Unfortunately the application for consent had already been made, so to some extent the damage had been done. Discussions demonstrated just how useful a properly timed visit would have been. Three householders had signed the petition because they thought that a mini-cab firm was going to commence business and that cabs would be coming and going 24 hours a day. Another (who had gone to the Council Offices to examine the application) objected because his newly-built house was not shown on the site plan! However, they all withdrew their objections after the true nature of the application was explained. Another complainant agreed to withdraw his objection if the mast was shifted a few feet. The only failure was a woman who said "I just don't want it" and slammed the door in the author's face.

The author was asked more than once if he would cause interference. If you are asked this question, do not say "No". You may want your tower very badly, but if you lie to your neighbours, how will you manage that 100-footer in a few years' time?

The correct answer must be something like: "Breakthrough can sometimes appear because most TV receivers are not designed to work near a radio transmitter. However, a condition of the amateur licence is that amateurs must not cause any interference to other broadcasts. The Home Office will close down any amateur who does not comply with this condition. Breakthrough problems are often due to poor set design. If I cannot cure the problem by fitting a suppressor in the mains or aerial lead of your set, then I will stop transmitting while the Home Office investigates. Please come and see me if any interference appears."

You have told the truth. The Home Office can put you off the air for a month in any case, when it is investigating a TVI complaint. You have therefore lost nothing, but when TVI appears (and it will) you have started to cure it *before* it appears. Your neighbours now know that TVI is an effect and not a cause, and they also know that you are approachable and will deal with their difficulties quickly and sympathetically.

Join 'Raynet': Unfortunately, the public image of radio amateurs is, at best, vague suspicion and, at worst, "those b*** who interfere with the telly". As members of the Council's Committee are also members of the public, their ideas about amateur radio are likely to be just as vague. Besides the services that Raynet can provide, amateur radio is of virtually no direct use to the community. (Should the reader be incensed at this assertion, perhaps he should ask himself how many new frontiers he has broached recently. It's no good going back to the Empire Wireless Service and the pioneers of radio: that was sixty years ago.)

If you *must* put something in the application (*see* below), mention satellites and Raynet, but little else. Raynet is a winner. Find out if there is a Raynet station at County Hall, Police HQ, etc. Draw attention to this in your application. Official recognition lends weight to your hobby and therefore to your case.

Having joined Raynet, play fair and join in Raynet activities. Planning applications aside, Raynet is worth joining anyway.

The Application: Forms to apply for planning consent are available from the Planning Department of the local authority. When you fill them in, remember that it is important to make a good case. At the Planning Committee meeting, it is likely that a Planning Officer will read out a summary of your application. It is therefore in your interests to make your application concise whilst not omitting any important points. Do not forget to mention that the mast will have no connection with any commercial use.

The author's application read as follows:— "Proposed development: Erection of aerial support mast and aerial for use in experimental amateur radio transmission and reception. In order to minimise the visual impact of the aerial support and aerial upon neighbours' amenity, the mast will be retracted when not in use. The support structure shown on the appended sketch is to British Standard, and is purpose-built. The aerial illustrated is an example of the type of aerial to be mounted on the mast. As my main interest is in technical experimentation with aerial systems, the aerial structure could change from time to time, but the mast will not. The mast will not require additional guys."

As we will see later, there were some important ommissions which contributed to . . .

The Notice of Refusal: Having determined a planning application, the local authority is bound to issue a notice of consent or refusal. When you get a notice of refusal, do not give up. After believing that no one would refuse consent for your lovely mast, it may come as a shock, but you have just lost a battle, not the war.

The notice of refusal received by the author read as follows:— "The proposal would intrude into the landscape qualities of the area to the south and east, which is intended to be conserved and improved for open space purposes."

At this point, two essential questions are raised: "What went wrong?", and "What now?"

The first question should be fairly easy to answer. In the author's case, he had not bothered to visit his neighbours, so there was a petition against the mast, and he had not bothered to mention Raynet in the application. In addition to this, perhaps a 60-footer had been a little ambitious for a Council that had never approved a tower before.

To respond to the second question, a compromise application would be drawn up, and an appeal to the Department of the Environment (DoE) made against the Council's decision to refuse planning consent. They are to some extent interconnected.

The Compromise Proposal: Now is the time to exercise some common sense and, most importantly, to show all parties your willingness to compromise. Should you generous compromise be trampled in the dust by the Council, it is likely that the DoE Inspector will view your case more favourably if you have shown yourself to be reasonable.

A second application was therefore made, and in order to contrast it with the first one, the text is given:— "Proposed development: Erection of aerial support mast and aerial for use in amateur radio transmission and reception. The mast is required for an amateur radio station that is licensed by the Home Office. The station is also a member of the Essex Voluntary Radio Amateur Emergency Network. The network serves as a back-up for Fire, Police, Ambulance, etc., when their communications are overwhelmed, or not operational. The aerial illustrated is an example of the type to be mounted on the mast. As the applicant's main interest is in technical experimentation with aerials, the aerial may change from time to time, but the mast will not. The mast will be approximately 45 feet high when extended and about 26 feet high when retracted. Guying will not be necessary. The mast will be retracted when not in use."

This time, the application was for the same aerial, but for a 45-foot mast instead of a 60-footer. The position within the garden was also changed to accommodate an objection. Do not try to be clever and apply for the mast and then sneak the beam up later without applying for it first. (Somebody in Kent did just this and got consent for a 60-foot tower. However, he has never been able to put up a beam, as he cannot get permission.) In the author's application, there was also a clear reference to Raynet, and a covering note said that the neighbours had been consulted and that a majority were in favour!

However, if your application follows this road, do not leave it at that. Get an appeal on the boil, because this will both show the Council that you mean business, and it could result in them accepting your compromise. After all, an appeal is a serious matter and can mean a lot of extra work for a busy Planning Department. Who knows . . . the appeal may even succeed!

The Appeal: Forms for appeal are available from the Department of the Environment. They will also send a useful explanatory booklet called "Planning Appeals — a Guide to Procedure". Appeals can be made in writing, or there may be a public enquiry, which is very much like a court of law. As the author did not have the resources to brief counsel (and wanted to 'have a go' himself) he decided to elect for a written appeal.

"He's in training for next year's Field Day . . ."

It is important to understand clearly the sequence of events, which is as follows:—

(*a*) A written appeal is drawn up by the applicant, who sends it to the DoE.

(*b*) The DoE acknowledges receipt and sends a copy of the appeal papers to the local authority concerned. The local authority has six weeks within which it must respond in writing with their case.

(*c*) The Council will write to all parties who have objected, asking them to put their specific objections in writing.

(*d*) The DoE will send a you a copy of all these objections. When you visit the neighbours, it is not bad policy to let this be known, as this may moderate what they have to say. A local authority has the right to keep such things in confidence, but objectors lose this option when an objection is made during an appeal.

(*e*) The DoE will send you a copy of the local authority's case for your consideration.

(*f*) The local authority will then be able to comment, in writing, upon your case and upon any representations received. You, also, will have the right to comment upon the local authority case and upon any objections. The parties concerned have another six weeks within which to do this.

(*g*) The Inspector appointed by the Secretary of State for the Environment will consider the evidence before him. He may make a site visit, and he is not obliged to tell the appellant when he intends to do so. It is probably against your interests if you have already put up mast and aerial in anticipation of a favourable decision.

(*h*) The Inspector will issue his decision. There is normally no appeal against the decision, apart from processing the case through the House of Lords. This course, however, seems a little extreme and will certainly not come cheap.

The costs of the appeal are normally borne by the parties involved. The DoE is empowered to award costs to one of the parties if it considers that the appeal was bound to fail anyway and this was clear to all parties from the start, or if the appeal covers a matter that has already been the subject of a previous appeal, or was so closely similar to it that differences were not of a material nature.

The staff of the DoE will be ready and willing to assist with appeals. However, they are only permitted to comment upon the appeals procedure and cannot and will not comment upon the merits of any case.

As the author's appeal covered four closely-typewritten pages, it is not feasible to set it out here.

Results: The compromise application was put before the Planning Committee of Basildon Council, virtually eleven months to the day after the original application had been made. The author was present at the meeting and recorded verbatim the comments of the Committee into a hand-portable tape recorder. This procedure raised some eyebrows, but may have caused the Committee to ponder its words carefully. If the application was rejected, a concise record of the proceedings would be at hand and could be used in an appeal. In the event, planning consent was given for a temporary period of five years, provided that the mast was retracted when not in use. The appeal was subsequently dropped. The remarks of the Chairman are worth recording: "This sort of thing could be useful in an emergency; we must encourage it . . .", and another said: "Forty-five feet is not very high . . ."

Like so many things in life, presentation would seem to be of the utmost importance.

Information: When the author first approached the RSGB, it became evident that there was no file of case histories of applications, successful or not. If would be useful, especially when drawing attention to precedents during an appeal, to quote instances where consent has been given. In this connection the RSGB (Membership Services Officer) will be pleased to hear of cases so that such a file may be compiled. Such information would be invaluable in future cases and is a prime example of the way in which amateurs can help each other under the auspices of the Society.

Conclusion

Certain golden rules emerge, and they must not be neglected:—

(*a*) Never give up;

(*b*) Your neighbours can help;

(*c*) It doesn't hurt to compromise;

(*d*) For goodness' sake, join Raynet;

(*e*) Presentation is paramount;

(*f*) After-sales service to your neighbours includes dealing with TVI.

Good luck with your application. With determination, you must succeed!

• • • SWL • • • SHORT WAVE LISTENER FEATURE

By Justin Cooper

ONE of the questions we are often asked is "What is the best aerial?" — which should be re-written as "What is the best aerial for this location bearing in mind the frequencies I like to listen to?" Clearly, the first question is unanswerable in any reasonable terms, as indeed is the second one unanswerable unless one has a good deal of background data and knowledge.

Nevertheless, one can make a few generalisations which may be of some help. Most receivers have an input which is nominally 50 ohms, although some old ones are at a nominal 400 ohms impedence. The presence of an 'aerial trimmer' control on some receivers is an admission that the actual input impedance of the receiver at any specified point on the dial will vary widely from the nominal, both in resistance and, more important, in reactance, for several good reasons (which we don't mean to discuss at the moment!).

Aerials come in two types for most of us: the Marconi, which is the end-fed wire that requires an earth as an essential part of the aerial; or the Hertz aerial which has a centre-feed arrangement and takes power without help from earth in the transmitting context. However, it should be noted that the Hertz aerial is affected by the presence of earth (*i.e.* it isn't, practically, in free space) and it may also help the Hertz, therefore, to "look at" the earth.

Certainly with any form of Marconi aerial, the quality of the earthing arrangements will make or break the aerial. The same goes for any of the 'ground-plane' type of multi-band verticals which derive directly from the Marconi concept despite their use of coaxial feeder. So, if Joe Blow says his vertical wouldn't work at his QTH, cast your eyes down at his earthing system, and bear in mind that the recommendations in the instruction sheet represent *a bare minimum* at a good site.

If your interest is over the whole spectrum from the medium wave to 30 MHz, then a single aerial just has to be something in the end-fed wire line, with top priority very definitely going to improving the ground connection by way of ground radial wires and so forth. If you are only interested in a single band and your shack is under the middle of the possible span, then a dipole is possible. This arrangement can be made to serve on more than one band by means of traps or loading arrangements, but it isn't very effective as a broad-band aerial for general coverage listening.

As to direction, for the average SWL, the preferred direction of radiation is east-west which implies that a half-wave dipole should run approximately N-S over the ground, as it radiates best at right-angles to itself. This goes for the end-fed wire too, until the length of the span becomes about $\frac{5}{8}$-wavelength at the frequency in use — if it becomes longer than this the sideways pattern breaks up into several lobes and nulls. Indeed if the wire is many wavelengths long — for example a half-wave end-fed for Top Band used on 28 MHz as an end-fed long-wire — then it becomes decidedly directional towards its ends, although the multiple minor lobes still give plenty of coverage of the sides. If the long-wire used like this can be duplicated to form a vee, then we can arrange things to cause the minor lobes to reduce and the major lobes increase — but such monsters are heavy users of real-estate. But they give us the chance to at least mention the 'Rolls-Royce' of aerials, namely the *rhombic*. This is a diamond shape of several-wavelengths per leg — say, eight. It can be considered as two vees face-to-face, one feeding the other; one end is fed with twin feeder and the far end may be open-circuit or closed through a non-inductive resistor. The open version radiates towards, or away from, the fed end (*i.e.* is bidirectional) with the minor lobes well suppressed. Terminating the rhombic results in the aerial becoming unidirectional. But, as we said before, it is a monster like the rhombic or the vee which puts sense into the term 'aerial farming'!

The Letters

Our first letter from *H. M. Graham (Chesham)* who has come back to our question on WAB/HAB activities. The squares used are those of the Ordnance Survey, of 10 km. a side. Since the OS system in fact deals with 1 km. squares, the WAB number includes the letter and first digit of the OS reference; thus our bit of the Isles of Scilly known as Hugh Town, St. Mary's, is in SV9111 in the 1 km. squares notation, so for WAB purposes the designation would be SV91 after dropping the second and fourth digits of the number. The designations, it should be noted, run from west to east and from south to north, alternating. Hence the next square east of St. Mary's would be SW; the next one north of St. Mary's falls into the sea area but would be SQ. The misprint last time out (for which we hang our heads in shame!) of SV00 would have put St. Mary's some 60 km. further west of Lands End than it in fact is, and up to 10 km. further south! Owing to the scale, the *AA Book* and the *AA Road Atlas* should be used with some caution — it only needs a tiny displacement of the blue line on the *AA Book* map for a major error to be evident, whereas on the largest scale OS map, one could easily guarantee to put the rig right across the line between two (or, better, four!) adjacent squares. Now, the object is to collect squares and you hope the guy you are listening to will give his WAB reference, or at least put it on the QSL card, particularly if he is in a big city — Liverpool, Maurice notes, is spread across SJ38, SJ48, SJ39, SJ49 squares, so you need to exercise care.

Also on WAB, we have a letter from G4HPU, who is the Publicity Officer for the WAB organisation; he says that the WAB books are available from G4KSQ, for £5 to include the postage, while the actual awards cost £1. If you just want the details, contact the SWL committee member, Maurice Williams, 11 Cedar Avenue, Sleaford, Lincs. NG34 8BW — and *please* include a suitable size s.a.e.

S. Wilson (St. Andrews, Fife) has just built himself a communications receiver for Twenty and wants to know how to enter into the spirit of the HPX game — the rules appear again on p. 319 of this issue.

M. Newell (Kenilworth) started listening in November last year using an ex-Army R.1475 receiver, which would seem to have been in dire need of a service — a change to an SX-140 on April 15 resulted in the total of prefixes rising from 47 to top the 200 mark in the following month, all obtained by using the FM set's dipole on 7, 14 and 21 MHz. However, things will shortly come to a halt in favour of 'O' Level and CSE preparation, albeit the RAE was taken in May before the serious studying begins.

L. Marquardt (Hereford) runs a DX-302, talks about QSLing, and is in a bit of a problem with it. Firstly, the SWL who wishes to QSL through the bureau system must be a member of some group that runs a QSL bureau; that means RSGB or ISWL, which in its turn implies the need for Luciano to join the local club where the DX-minded amateurs and SWLs could give him assistance. Having joined the RSGB or ISWL, he will then be allocated an

SWL number, which can appear on outgoing reports, and which will be the address for the returning cards; and of course you need to keep envelopes at the bureau into which the cards can be put for forwarding on to you. In the case of the contest stations in Russia mentioned by Luciano (and indeed for any Russian station) there is only one route possible, and that *is* the bureau; Russian stations do not receive QSLs by any other route, and rarely send them any other way either. Go join the local club, Luciano, their address is in the "Clubs Roundup" piece in this issue.

The Ladies

Nice to hear from *Mrs. T. Parry (Blackpool)* again; she says the fine weather has had her out licking the garden into shape, with lots of fresh vegetables growing. Nevertheless, Tina still finds time for a listen round the bands, as the entry in the HPX Table shows.

Mrs. R. Smith (Nuneaton) notes that while she was having problems with 21 MHz listening, and wondering if the receiver had gone sick, the licensed types reporting the "CDXN" were also in problems; it's the old story again — is it the receiver, the aerial, or conditions? Many a time your J. C. has had his doubts, but a check with the lads at the club usually resolves the point one way or another!

For the gentlemen, *J. Goodrick (I.o.W.)* is next, we think — although he signed his letter just "John" — and he mentions the fall-away in conditions, with even Twenty 'off' at times. On a different tack, he wonders, having heard an EA say he was 82 years old and into radio since 1923, just who is the oldest amateur on the bands. We don't know, but there are certainly several older than that, even in U.K.

G. Carmichael (Lincoln) is a bit puzzled by the new Russian prefixes — we suggest he looks at his copy of last month's *S.W.M.* where G3TXF explains all in his article "All Change in Moscow!"

If R. J. Swann, who was asking about an EC-10 handbook back in May, should read this, then *Mr. H. Lee, Voyensvingen 20, L-531, Oslo 0458* has a copy. Henry, by the way, is English but has lived in Oslo since 1945, where he went on VE-day with the Royal Signals, found himself a wife and house, and settled there. He was G2LV in 1921, gave it up in 1930 as he was travelling in Asia, but is still actively collecting cards for his reports — and they must be good reports, since for 4200 reports sent out direct from Norway, Henry has almost 4000 QSLs, which is not a bad percentage at all. At 80, Henry reckons to be *almost* an Old-Timer! And, we could add, his old call is still in use, its present owner being Dick Leeves, down in Devon.

B. Patchett (Sheffield) has been trying his hand at 144 MHz, and compares it to 10 FM; there is far more activity on the latter band in South Yorkshire, and one G6 has chucked up his two-metre activity and gone back to CB as a result of the lack of activity! Brian himself will soon dispose of his TR-2300 in favour of an HF rig, and says he now realises there's nothing to beat the 1.8-30 MHz part of the spectrum!

Another strong, silent type next — *A. F. Roberts (Kidderminster)* has just put in an update to his CW score for the Ladder, and no comments.

Several people mentioned that N. Jennings of Rye is in hospital — thanks to all these, and we hope to hear that Norman is soon on the up-and-up again.

N. Henbrey (Northiam) was one of those who mentioned Norman Jennings, and adds that at this time of year it is his habit only to listen to the odd contest session; a little difficult on VHF and UHF as his rotators are both kaput!

Now we get a rocket, from *D. B. Shapiro (Prestwich)* who points out that his initials are not D.P., that he lives in Prestwich not Prestwick, and that his new call is G1EIK *not* G1EIB. My apologies and a note has been made, Sir!

On the other side of the coin, your scribe got a pat on the back from *R. Wooden (Staines)* for the diagnosis of his problem with the stability of his Eddystone 730/4. Roy lifted his score with some of the contests, hearing mainly Russians.

N. Fox (Wakefield) finds his HPX listings are a bit low on African prefixes and wonders whether it has something to do with the direction of his aerial, or his listening times. It could be either, of course, but one must also take into account that activity, outside of ZS, is not very high. If only one station is operational, as is the case in Malawi, and that one is in U.K. on leave, then you ain't going to hear any 7Q7 signals till he gets back and recommences operating!

R. Fox (Northampton) has solved his Oscar-10 problems, and now seems to have dropped most of his other activities in favour of listening to the passes of 0-10. Roy notes that the W6 stations may use either 23 or 84 as the number instead of 6 in their calls, over the period of the Olympics.

E. M. Gauci (Malta) has slipped on a couple; G4KXW/QRP is just another G4, but operating QRP and probably quite chuffed to know he has been heard in Sliema. The other one was G4VDV/5 — blowed if we know what that might have been, unless it were G4VDV/W5. Wonder if G4VDV reads this, and can throw any light on it?

P. Oliver (Paisley) has passed the magic 1000, and is now heading for the next thousand up — at least until the curling season starts again!

On to *J. Chapman (Newark)* who is beginning to find, as his score rises, that his FRG-7 could do with some more selectivity. We would strongly recommend the fitting of a narrower IF filter,

HPX RULES

(1) The object is to hear and log as many *prefixes* as possible; a prefix can only count once for any list, whatever band it is heard on.
(2) The /M and /MM suffixes create a new series: thus G3SWM, G3SWM/M and G3SWM/MM all count as prefixes, and where it is known to be legal, /AM also.
(3) Where a suffix determines a *location* the suffix shall be the deciding factor, thus W1ZZZ/W4 counts as W4. Where the suffix has no number attached, *e.g.* VE1AED/P/SU, VE3UJ/P/SU, they are arbitrarily counted as SU1 and SU2 respectively, and the same holds good for similar callsigns.
(4) When the prefix is changed both the old and the new may be counted; thus VQ4 and 5Z4 both count.
(5) The object is to hear *prefixes* not countries, thus there is no discrimination between say MP4B and MP4K which count as one prefix.
(6) Only calls issued for Amateur Radio operation may be included. Undercover and pirate callsigns will not be credited, nor any MARS stations be claimed.
(7) G2, G3, G4, etc., all count separately, as do GW2, GW3, GW4, etc., and in the same way K2, W2, WA2, all count separately even though they may be in the same street.
(8) Send your HPX list, in alphabetical and numerical order showing the total claimed score. With subsequent lists, it is sufficient to quote the last claimed score, the new list of prefixes, and the new total. Give your name and address on each sheet, and send to "SWL", SHORT WAVE MAGAZINE, 34 High Street, Welwyn, Herts., AL6 9EQ, if possible to arrive before SWL deadline for that particular month.
(9) Failure to report for two consecutive listings, *i.e.* four months, will result in deletion from the Table, although there is no objection to a "Nil" report to hold your place.
(10) Starting score 200. Phone Table is mixed AM/SSB, with a separate CW Table. No mixed Phone/CW Table, nor will AM-only or SSB-only entries be accepted.
(11) List will be based on those shown in the current "Radio Amateur Prefix-Country-Zone List", published by Geoff. Watts (*see* Advertisers' Index in any issue of SHORT WAVE MAGAZINE).

as detailed a while back in the pages of *Short Wave Magazine,* but John is not too happy as whether he can do the needful without wrecking the receiver. Personally we feel that isn't a question on which we can take sides — but if you practice the noble art of soldering with a small iron, preferably of the temperature-controlled type, and if you take care to check each step as you go to be sure you've made no silly mistakes, then there shouldn't be any problems. As to add-on audio filters, we would recommend the good works of Dr. Tong of *Datong Electronics,* provided you realise that selectivity this late in the receiver requires considerable skill from the driver of the rig to get the best from the combination.

N. Jennings (Aldershot) has spent much of his time of late in altering the programs on his computer, which has reduced the time available for radio. He got a little surprise one Saturday evening, when he had a telephone call from A92NH in answer to his SS/TV report, the A92 being apparently quite chuffed to know he was getting out so well. So far though, A92NH hasn't come across with a QSL yet!

J. Routledge (Hartlepool) notes that he has now reached the 500 mark and hence goes into the All-Time. It follows therefore that those prefixes heard before 1984 and not yet claimed can now be added to the ones already claimed in the 1984 listings.

W. G. Shipton (Rye) is another who mentions that N. Jennings has been in and out and in again to the bandage-factory; again we hope that, by the time this comes to print, Norman is back home and well on the mend.

E. W. Robinson writes in to say he has moved from Bury St. Edmunds and is now at *Felixstowe* where son G6AYX lives — a move of some 37 miles. So far the aerials have been a bit temporary and include a 'sort of dipole' made from loudspeaker wire and running on the picture rail of the shack, plus a piece of wire running from the shack window down to a fence 4½ feet high, which it continues along for 36 of its 60 feet. SWL Robinson has been startled at the results achieved with these aerials, but of course, he must take in to account the fact that he is so near the sea and thus is almost certainly getting quite a boost. Hopefully, by next time round, all will be set up and going full bore.

Our next letter is from *S. Baker (Cwmbran)* who is just seven; his letter writing, logging, and aerial-erecting is done for him by his father, GW6VZW. But, we must add, dad as an aerial erector admits to being somewhat slothful. . . . He is a staff-nurse in a local hospital, and would be interested in hearing from others in the same business and interested in radio. Back to Stephen, and it sounds as though his current list was compiled despite various youngsters' illnesses and an overnight stay in hospital for surgery. We hope all is now well again. Incidentally, if anyone wishes to take up GW6VZW as above, the address is Mr. P. Baker, 5 Moseley Terrace, Pontrhydyrun, Cwmbran, Gwent, S. Wales.

C. Burrells (Stevenage) has been on holiday to Ballachulish and had himself a whale of a time; but his ambition to see Ben Nevis didn't come off, due to mist and cloud — but there's always another time!

ANNUAL HPX LADDER

Starting date, January 1, 1984

SWL	*PREFIXES*		
A. Woods (Norwich)	395	P. A. Cardwell (Sheffield)	333
J. Routledge (Hartlepool)	378	M. R. Warburton (Leicester)	289
N. Fox (Wakefield)	374	M. Newell (Kenilworth)	211
C. Burrells (Stevenage)	370		

Minimum of 200 Prefixes to have been heard since January 1, 1984, in accordance with HPX Rules — *see* p. 319 this issue. At score of 500, transfer to the All-Time Table is automatic.

HPX LADDER

(All-Time Post War)

SWL	*PREFIXES*		
PHONE ONLY		G. A. Carmichael (Lincoln)	796
B. Hughes (Worcester)	2845	J. Heath (St. Ives, Hunts)	741
Mrs. R. Smith (Nuneaton)	2414	R. Wooden (Staines)	689
E. W. Robinson (Felixstowe)	2305	B. Patchett (Sheffield)	673
H. M. Graham (Chesham)	1718	T. Morris (Headingley)	626
Mrs. T. Parry (Blackpool)	1613	A. J. Hall (Alvaston)	624
G. W. Raven (London)	1507	A. Pilkington (Chesterfield)	534
M. Rodgers (Harwood)	1425	S. J. Bedford (Wakefield)	522
M. G. Toms (Rayleigh)	1418	A. J. Chapman (Newark)	514
N. E. Jennings (Rye)	1354		
E. M. Gauci (Sliema, Malta)	1274	*CW ONLY*	
R. Fox (Northampton)	1273	E. B. Ward (Ruddington)	1848
D. Shapiro (Prestwich)	1258	J. Goodrick (I.o.W.)	1662
N. Askew (Coventry)	1235	A. F. Roberts (Kidderminster)	1334
N. Henbrey (Northiam)	1207	R. Fox (Northampton)	433
R. Everitt (Bluntisham)	1143		
S. Baker (Cwmbran)	1009	*RTTY ONLY*	
P. Oliver (Paisley)	1003	N. E. Jennings (Rye)	583
P. Lincoln (Aldershot)	883	P. Lincoln (Aldershot)	465
G. Shipton (Rye)	818	N. Henbrey (Northiam)	274
I. F. Thorpe (Bracknell)	813	J. Routledge (Hartlepool)	276

Minimum score for an entry, 500 for Phone, 200 for CW or RTTY. Listings to be accordance with HPX Rules — *see* p. 319 this issue.

Finally, a couple of just-a-list merchants to mention; *G. W. Raven (London)* is one of them and t'other is *B. F. Hughes (Harvington)* who submitted his list "just to keep my head above water!"

Aerials — Again!

Since we have a little space left over, let us revert to this aerial business.

The writer has a garden not quite wide enough for a 14 MHz beam facing east to west. It was desired to try such a beam to see whether it would be worth a regular place in the armoury, even at a low height. I had some coaxial cable around, and a penknife. I bought (evil word!) a strip of 'chocolate-block' connector and a length of stout terylene pre-stretched cord. Three pieces of the choc-block connector were cut off, each of three holes. Each was threaded, by way of the centre hole on to the string. A length of copper wire was cut for the director, another for the reflector, in accordance with the formula but cut for the bottom of the band. Ditto for the dipole, and then cut exactly at its centre. Each was threaded onto the relevant choc-block, and then the blocks spaced apart to formula. The string was then attached; one end to the barge-board, and the other to a suitable branch of the apple-tree. The elements were tied off with string to the fence — about five feet high. I 'lived with' the SWR, but took care to resonate the aerial by means of a grid-dipper. It worked — fine for U.S.A. in the evenings, and fine for long-path VK/ZL in the mornings! Total cost, less than 50p and a couple of hours of work, including interruptions!

The moral we are trying to make is simply this: a little bit of intelligently applied practice costs just about nothing where aerials are in question, and you can get a lot of fun and a lot of knowledge out of it!

Go to it, readers!

Finale

The deadline, for arrival of your letters for the November column, is Thursday, **September 20**; the address, as ever, is to your scribe "SWL", SHORT WAVE MAGAZINE, 34 High Street, Welwyn, Herts. AL6 9EQ. Till then, be seein' ya!

• • • "Practically Yours" • • •

with GLEN ROSS, G8MWR

Facts and Fancies

THIS month we are going to have a look at some of the problems inherent in building your own aerial systems. The basic information will be given for the VHF bands but is equally applicable to any other.

It appears that the general method of operation these days seems to be to buy your rig, stick up a "Slim Jim", operate through the local repeater and generally bemoan the fact that you cannot get out of your own backyard on the simplex frequencies. One reason, of course, is that an omni-directional aerial sprays the RF around 360 degrees and therefore its performance is equally poor in all directions. By using a small beam the signal can be concentrated in the direction you wish to work and the range available to you is significantly increased. A lot has been heard about the "socially undesirable" use of omni-directional aerials, meaning that if you are sending your signal in directions other than towards the wanted station then you are causing a lot of local interference; a beam is then advocated as a means of overcoming the problem. Although there are many good reasons for using a beam, this is not one of them and a few moments thought will show that this argument is based on a fallacy.

Looking at Fig. 1 the circular area shows the "footprint" of the omni-directional aerial and the elongated area is that of the beam. In the area where the beam and omni coincide the signal from the beam will actually be stronger (due to the gain) and so cause more problems though, as can be seen, the actual area of the "footprint" is the same. All that you have done is concentrate the available power into one direction, and this means that you will now be causing problems at a greater distance in the forward direction. The only real point in using a beam is to send the strongest signal in the required direction.

Elemental

Another point that is not widely understood is that the gain of a beam is *not* determined by the number of elements on the boom. Provided that the tuning and spacing of the elements has been optimised, as they should have been, then the gain of a Yagi is defined by the length of the boom! To put it another way, on a boom of given length the gain will be the same whether there are, say, five or seven elements. Factors such as the bandwidth required from the array may dictate the use of more elements but, for the small percentage changes in frequency which are involved in amateur arrays, this is not normally a consideration. By using different driven element configurations such as a two-element quad or multiple driven elements, as in the ZL-Special, more gain

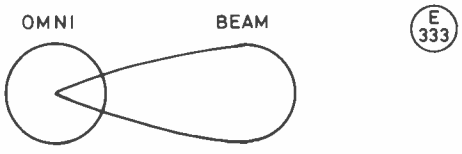


Fig. 1 Compares omni-directional and beamed "footprints"

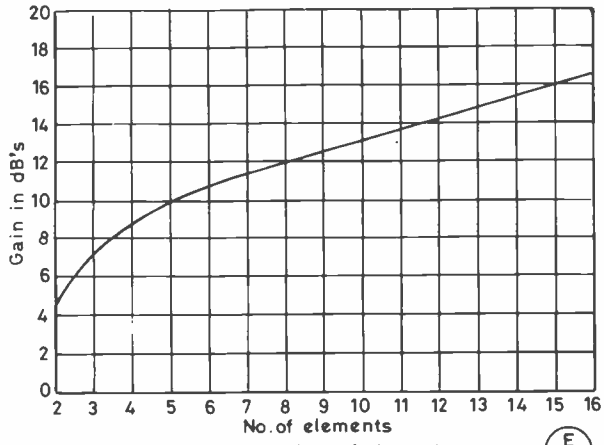


Fig. 2 Gain of array for number of elements

can be obtained; but th argument still holds good for the length of the boom that carries the directors of the array.

Fig. 2 shows the gain to be obtained from a given number of elements and Fig. 3 shows the boom length required for that number of elements to be fitted to the boom to obtain the stated gain.

The Fixings

Many people have built arrays to published designs and been disappointed with the results. On enquiry one usually finds that the design has not been faithfully copied, but that some detail has been changed. The most frequent change seems to be in the type of boom. If the design calls for one inch circular section and you use one inch square then the element lengths must be adjusted slightly. If the elements should have been fixed to the top of the

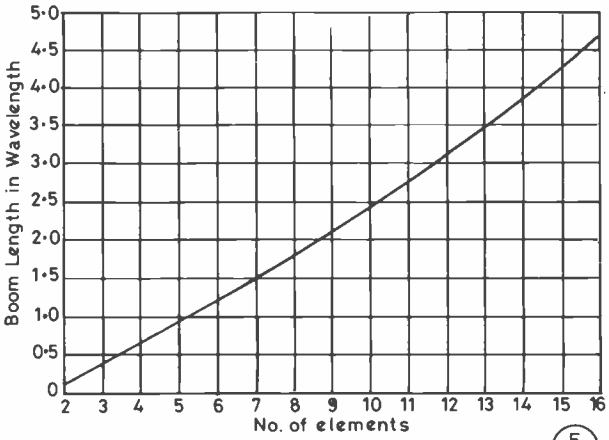


Fig. 3 Boom length versus number of elements

boom and you have drilled mounting holes through the boom the elements must be adjusted. The same applies if you have used a wooden boom instead of metal or if you have changed the diameter of the elements. It cannot be too strongly emphasised that any changes which are made to the original design features will mean some readjustment of dimensions to obtain the design specification.

Feeding the Beast

A Yagi aerial is a balanced design and must not be fed with co-axial cable unless some means is employed to convert from one form to the other. This can, and should, be performed as an inherent part of the aerial design. If, due to poor original design, this feature is not available it may be arranged in the feeder system by the use of a "balun" transformer, although this will entail careful waterproofing. A method of matching the aerial impedance to that of the cable so as to minimise the losses due to a high SWR on the feeder must be provided — although these losses are usually grossly overestimated by most amateurs.

The Design

Next month we will give designs for Yagi arrays for the 144 and 432 MHz bands based on the above points. Construction techniques will be simple and well within the scope of the DIY person. They will use readily available materials, no special clamps, etc., will be required and the total building costs will be very low.

BOOK REVIEW . . . .

THE first edition of M. G. Scroggie's *Foundations of Wireless* was published in 1936. Reviewed here is the latest 1984 edition, the tenth, which is now entitled the **Foundations of Wireless and Electronics.** As this implies, its prime function is to deal with the broad fundamentals of these subjects. These fundamentals, such as inductance, capacitance and resistance, do not change and Henrys, Farads and Ohms are the same now as when first defined. However, solid-state devices have evolved considerably in the nine years since the previous edition was published, while thermionic valves, apart from those used in high power transmitters, have almost become museum relics. This tenth edition reflects some of these changes.

This book deals with fundamentals in a clear and concise way, amply illustrated with familiar analogies, where necessary. The important terms are introduced in italics when they are described and defined, and some chapters include a section entitled "Recapitulation," a very useful idea. There are 27 chapters which logically progress from very basic things like electrons, conductors and insulators, through inductance, tuned circuits, oscillation, antennas, receivers, computers to power suppliers. This book can be confidently recommended to anyone requiring a basic reference work covering the fundamentals of radio and electronics. There are five appendices and a very comprehensive thirteen page index. It comprises 551 pages in 210 x 130 mm. format and is a softbound volume, 28mm. thick. It is a *Newnes Technical Book* published by the *Butterworth Group* and is in stock in our Publications Department at "Short Wave Magazine", 34 High Street, Welwyn, Herts., AL6 9EQ, price £10.05 including postage and packing.

N.A.S.F.

CONTEMPORARY BRIEFS . . . .

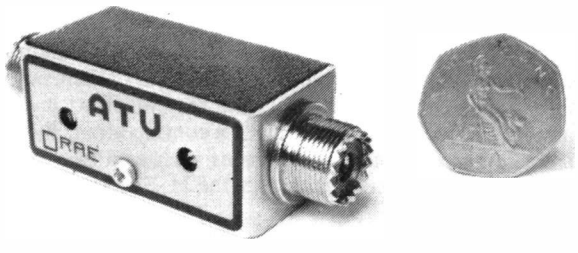
DURING the 1950s and 1960s, before the advent of UHF television, many amateurs were plagued with TVI complaints. Often this was due to ineffectively screened transmitters, harmonic radiation, etc. Indeed in many urban situatons, one dreaded operating on 14 and 21 MHz during TV hours. However, it was not one-sided since line time bases radiated strong signals which often rendered reception on the lower frequencies in particular, very difficult. Nowadays, with virtually everyone owning a UHF colour TV receiver, TVI from HF and LF amateur stations is rare, apart from overloading of the TV receiver's RF stage due to closely coupled antennas. However, time base and switched mode power supply radiation is a source of much present day interference. Moreover, a new menace has proliferated in the form of the home computer.

Mention has been made of what I call DCI — digital computer interference — in *VHF Bands*. The reason for all this extra hash is the virtual disappearance of metal cases and the near universal adoption of pretty plastic ones to house the electronics. This applies to modern so-called hi-fi stystems and music centres which are likewise open to any stray RF.

It would help if computers and domestic entertainment equipment were properly screened and reference has been made to treating the inside of plastic cases to achieve this end. Just received is information released on behalf of a London-based company offering such a service. It is **Deccospray Limited.** What they have done is to develop a method of applying a molten pure zinc coating to the inside of cases so providing the basis for a good screening system. This works both ways by keeping unwanted RF out of the computer, etc., and also greatly attenuating the very wideband hash that computer digital circuits produce.

The screening service is in great demand and has necessitated the company extending its premises to cope with it. The overall technique is applied to virtually anything that benefits from screening or being screened, including fluorescent lights, vehicle ignition systems, VDUs, and so on. **Deccospray Limited** are at Eastmoor Street, Woolwich Road, Charlton, London SE7 8NA, their telephone number being 01-858 5128. The company has been in the anti-corrosion field for over thirty years, by the way.

N.A.S.F.

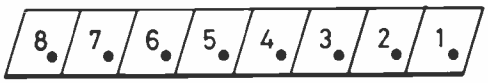


***Davtrend Ltd.* has come up with a new solution to the old problem of improving the VSWR of 2-metre mobile antennas. Shown here is the *DRAE* preset 2m. ATU which, when placed between antenna and transceiver, is claimed to give optimum performance for any given situation. The 30-watt, 50-ohm unit costs £11.80 inc. VAT, and full information is available from *Davtrend Ltd.*, Sanderson Centre, Lees Lane, Gosport, Hants. PO12 3UL. (Tel: Gosport 520141).**

The "Dover" Frequency Meter, Part 2

A 100 Hz TO 600 MHz COUNTER WITH READY-MADE PCB'S AVAILABLE IF REQUIRED

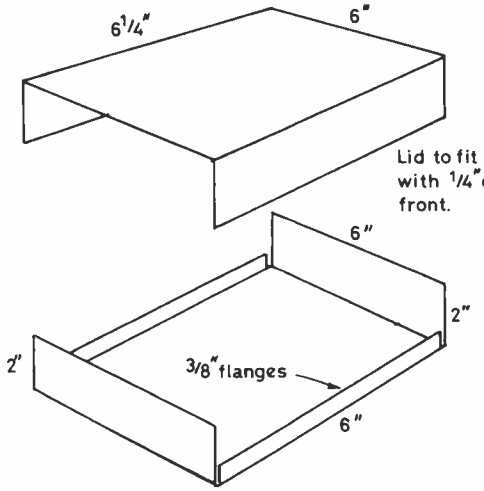
IAN KEYSER, G3ROO



Display anodes to Diodes	Group A 2 5 8	Group B 1 4 7	Group C 3 6
	10s ÷ 1	10s ÷ 10	10s ÷ 100
	1s ÷ 100	1s ÷ 100	1s ÷ 10
	0·1s ÷ 10	0·1s ÷ 100	0·1 ÷ 1
	0·01s ÷ 1	0·01s ÷ 10	0·01 ÷ 100

Table 1. Display and chart showing switch positions and decimal point positions

E 328



Case for 'Dover' Frequency Meter

E 327

Decimal Point Control

I HAVE been having nightmares of the postman arriving with sack-loads of letters saying that this circuit (*see* Fig. 2) has been over-designed, but I cannot see any other way of achieving the necessary control!

It will be seen from Table 1 that there are only three combinations of decimal point positions, and they are labelled A, B, and C. The appropriate switch positions for each group are

Front view of a completed "Dover" digital frequency meter.

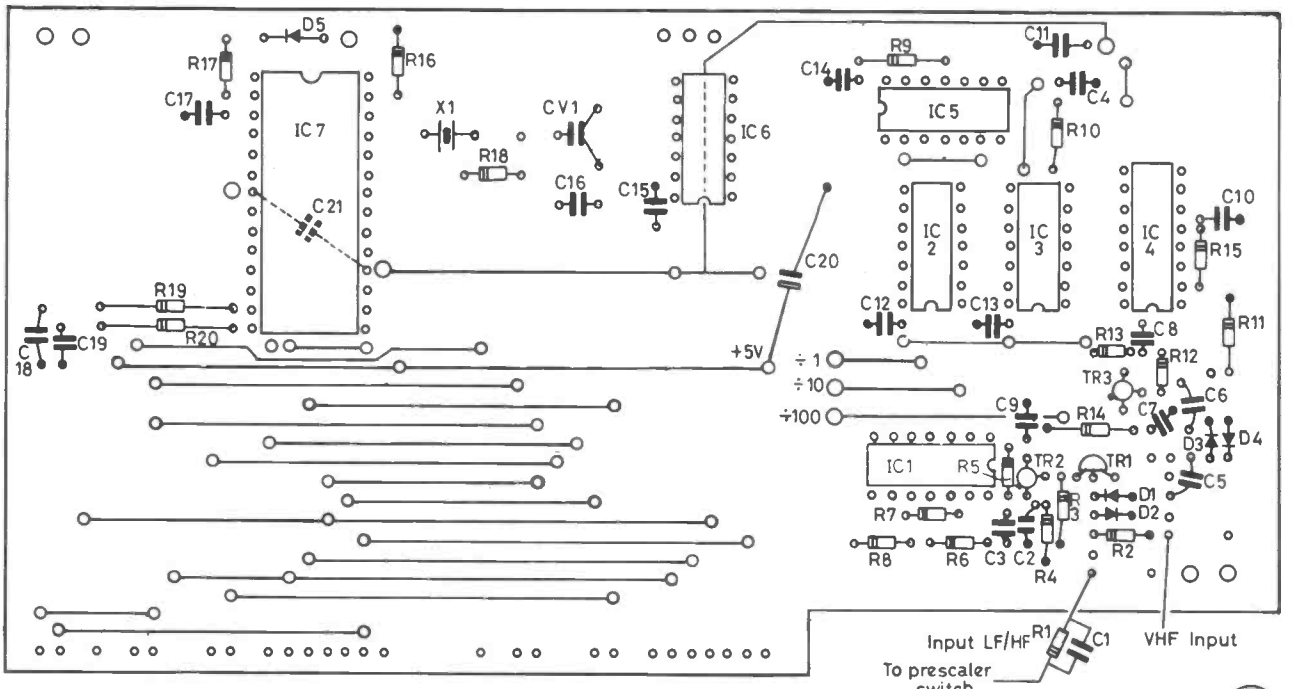


Fig. 4 Prescaler and Counter PCB Component layout

E 300

listed, firstly the gate period followed by the prescaler division ratio. As an example, if the switches are in the 0·1s gate period and the prescaler is in divide-by-100, group B decimal points are required and the decimal points associated with digits 1, 4 and 7 are illuminated.

Referring to Fig. 3, to follow the action of the circuit I am going to start the description by jumping directly to IC4 (I have not "dropped a marble" here, I'm just trying to start at the beginning and finish at the end!). This package of NAND gates is not the normal 7400 but its sister the 7403. The difference is that this device has what is called 'open collector outputs' which enable connection of several outputs in parallel; the penalty for this facility is that we have to include 'pull up resistors', *e.g.* R7. If we hold all the eight inputs to this quad NAND gate at logic 0 the common output will be logic 1. If we now allow any pair of inputs to one of these NAND gates to rise to logic 1 the common output will fall to logic 0. To hold all these inputs at logic 0 until we wish to address them the lines are driven with inverters IC1*a* to *f*; by

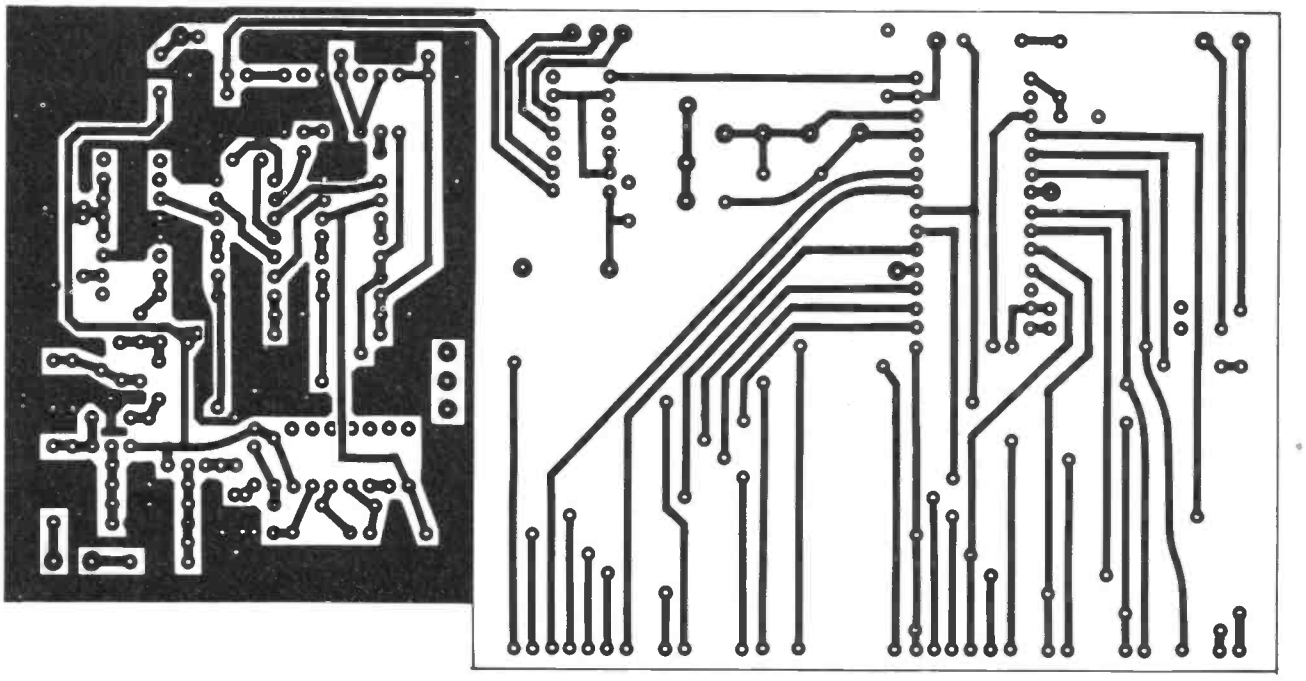
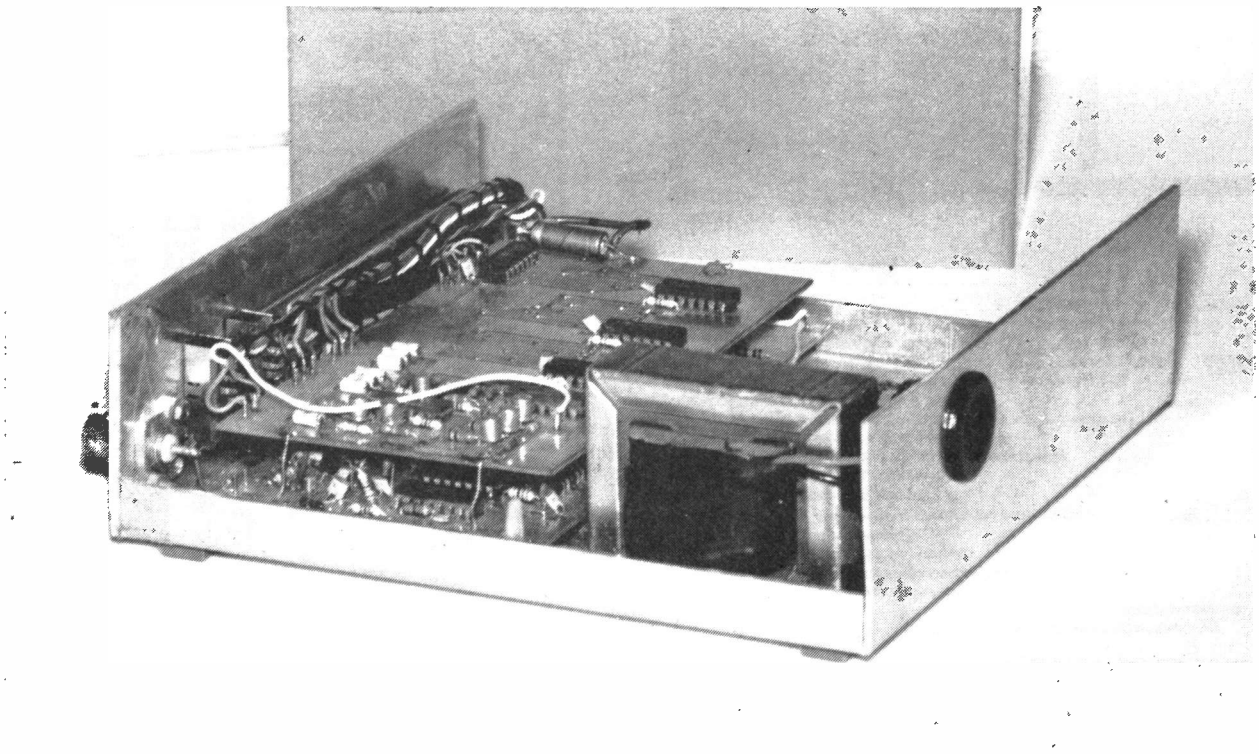


Fig. 5. 'Dover' Frequency Meter Prescaler and Counter PCB (underside).

E 301

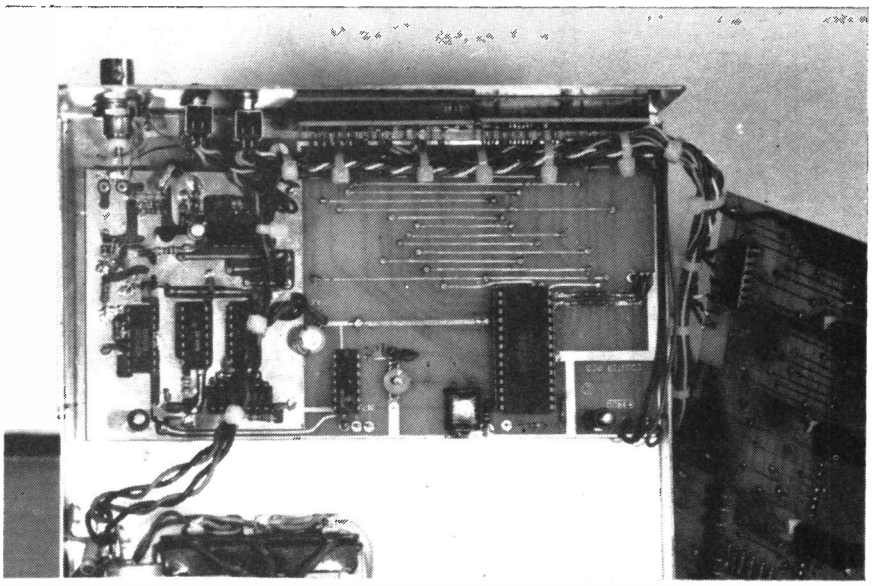


An inside view of the "Dover", showing both PCB's and transformer in position.

earthing the relevant inputs to these inverters by the selector switches we can control the logic state of the common output of IC4.

Let us follow that with an example to clarify the action. With all the inputs to the inverters at logic 1 the matrix lines will be at logic 0 and so the common output of IC4 will be at logic 1. If we select, say, the 0·1s gate period and the divide-by-10 prescaler the two inputs of IC4*a* will be at logic 1; that means the common output of IC4 will be at logic 0. If we now change the selection to a 1 second gate and divide-by-100, IC4*d* gate inputs will be at logic 1 and the common output will be at logic 0. Note that we are working with group A decimal points at the moment, but if we were to select a one second gate and divide-by-1, one of the gates of IC4*b* and one of the gates of IC4*d* would rise to logic 1 while the other inputs to these gates would still be at logic 0, the common output remaining at logic 1. In fact, in this condition group B will be selected.

Having mastered that part of the operation we now do another jump to the digit anode inputs. The pulses on these anodes contain the information that is required to position the decimal points in the display. We take the signals from the anodes *via* a diode OR gate to the base of transistor TR1 which acts as a buffer. As these anodes go to logic 1 in sequence the combined signal will



Showing the prescaler/counter PCB with decimal point control PCB removed (at right).

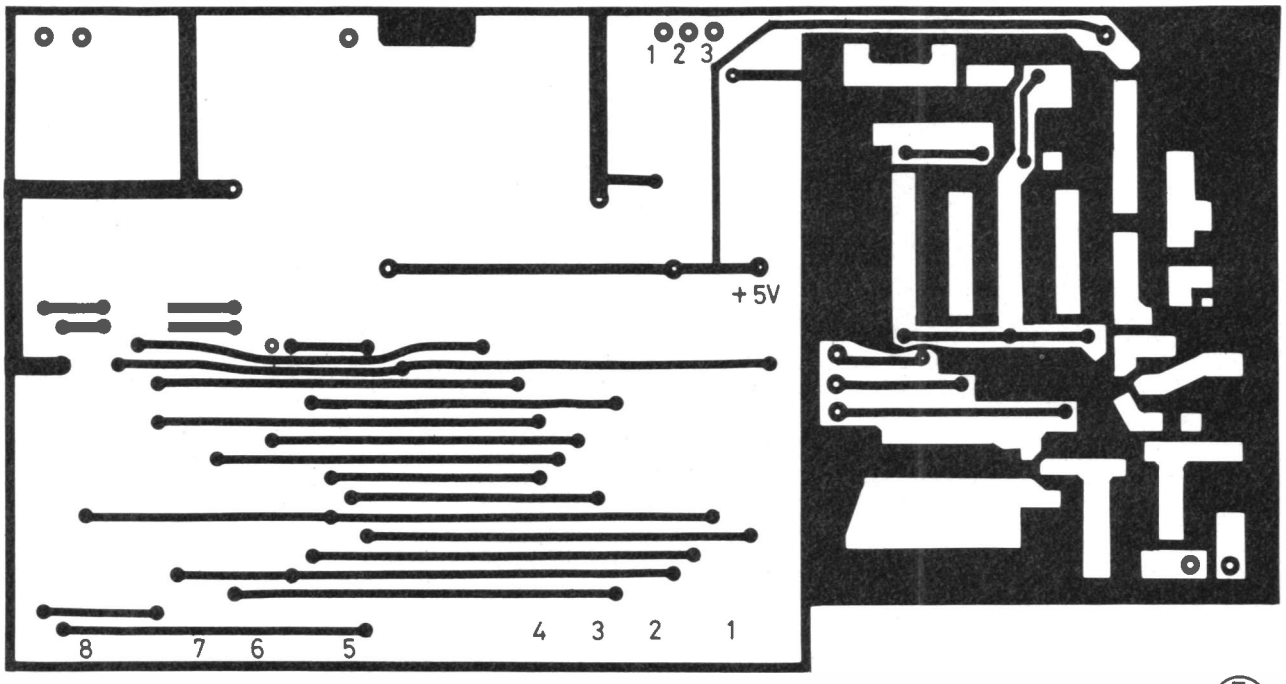


Fig. 6 Prescaler and Counter PCB (top side)

E 302

appear across R8. The value of R8 has to be sufficiently low to hold pin 10 of IC6 in logic 0 state; then, as the input signal increases the voltage across R8, the input will change to logic 1. This signal has to be passed to the output and thence to the *ex*-DP input on the 7216C, but it cannot do so until pin 9 of IC6 is in a logic 1 state. The common output of IC4 is inverted by IC5*b* to achieve this.

To recap, with no group A input pairs selected the common output of IC4 is at logic 1, IC5 inverts this to logic 0 and so IC6 is inhibited and the signal arriving at the input is not passed to the output. When a group A pair is selected IC4 common output goes to logic 0, which is inverted by IC5 putting logic 1 on pin 9 of IC6. The output on pin 8 now goes from logic 1 to logic 0 in sympathy with the digit anode input information and these negative-going pulses turn on TR6 (note PNP) giving logic 1 pulses across R10.

The other two groups work in exactly the same way as this and

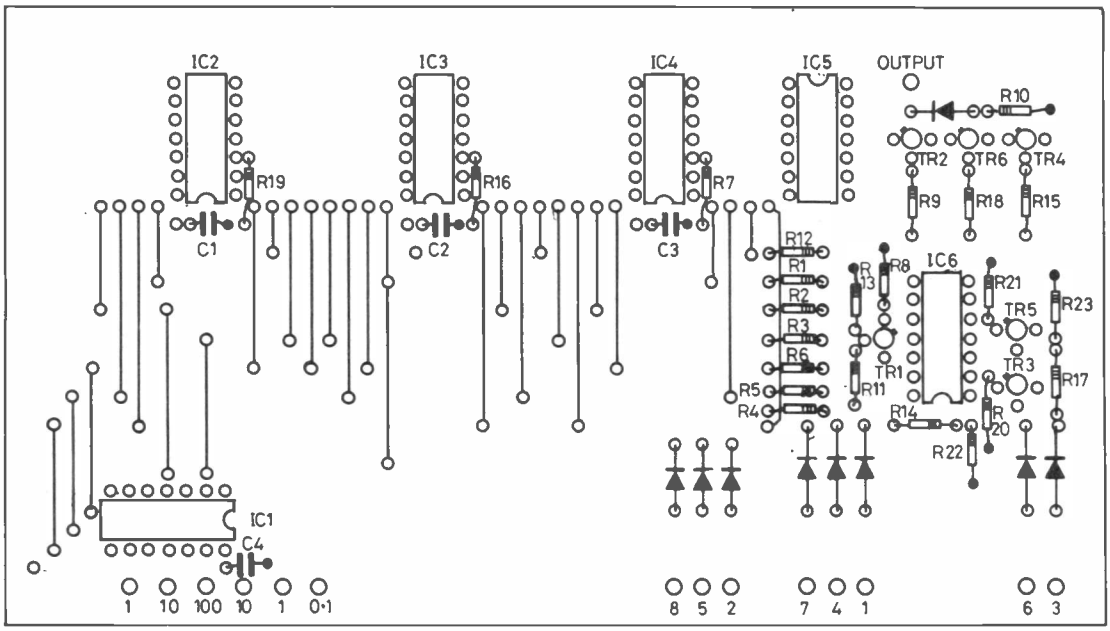


Fig. 7 Decimal point Control PCB Component layout

E 323

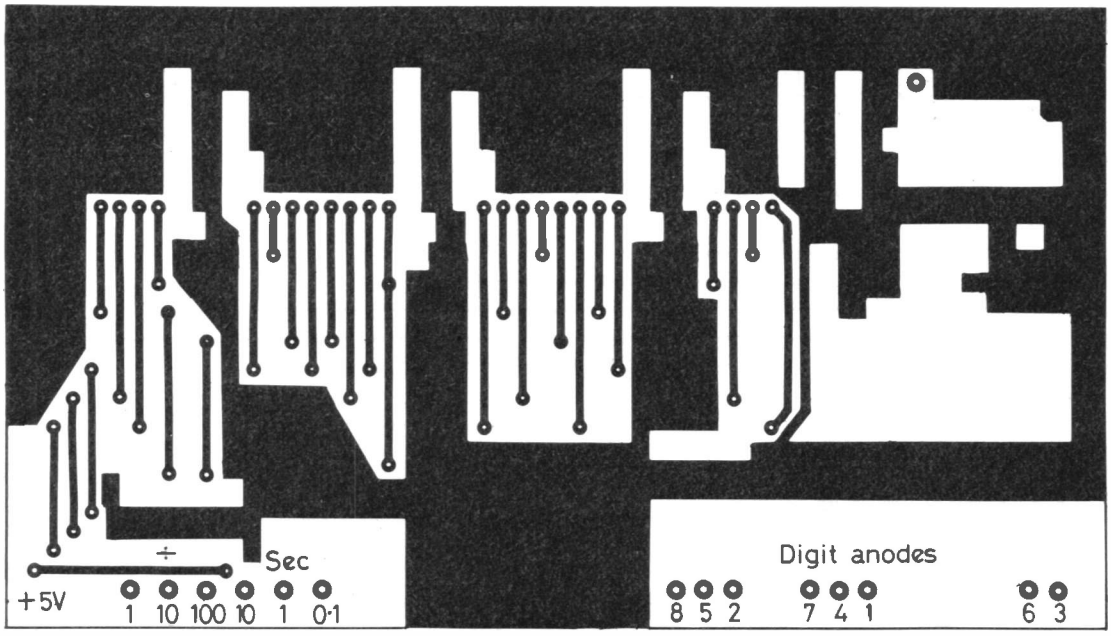


Fig. 8 Decimal point Control PCB (top side)

their output-transistor collectors are also connected to R10 in an OR gate configuration.

When the two printed circuit boards are wired together as shown in Fig. 10 the decimal points will move to their correct positions, listed in Table 1, as the switches are changed.

It should be noted that R12 in Fig. 2 is the 'pull up' resistor of the 0.01 second gate period which is not used in this design. To enable the board to work correctly this resistor should be omitted and the 0·01s gate line shorted to 0 volts.

Conclusion

The counter is not as sensitive as some commercial units available in the VHF range as it was found that instability could be a difficulty with high-gain amplifiers; in practice, however, this has not been a problem. A quarter-wave whip on the input will easily count the output of my FT-290R into my *MET* seven-element beam, 35 feet above. When working on oscillator strips and multipliers no difficulty has been experienced in obtaining a count and, recently, when realigning an old HQ-170 (a valve

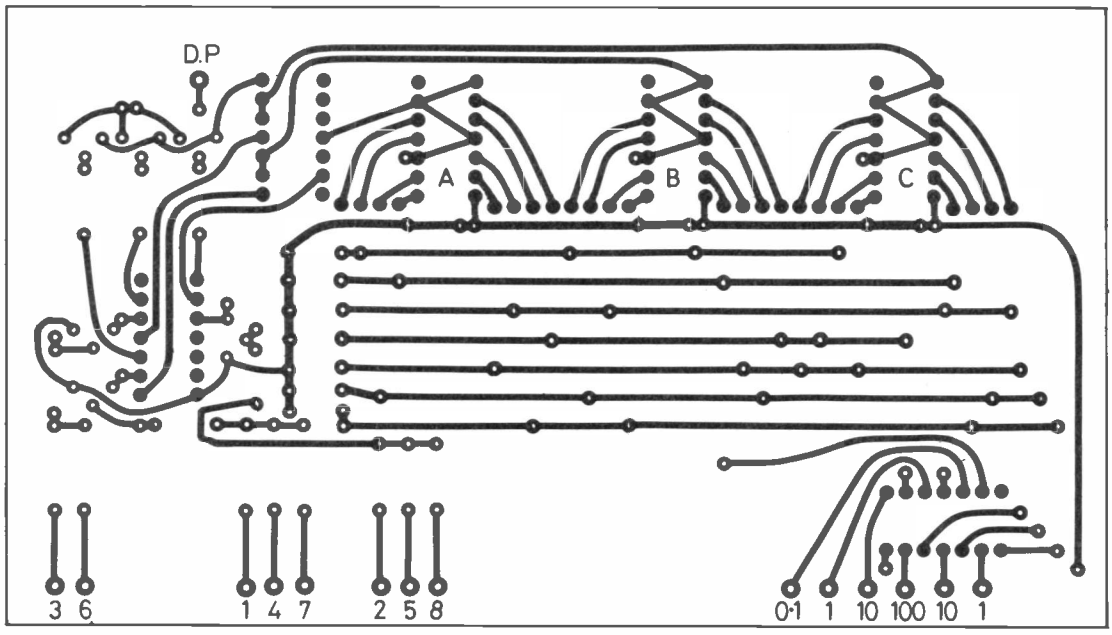


Fig. 9 Decimal point Control PCB (underside)

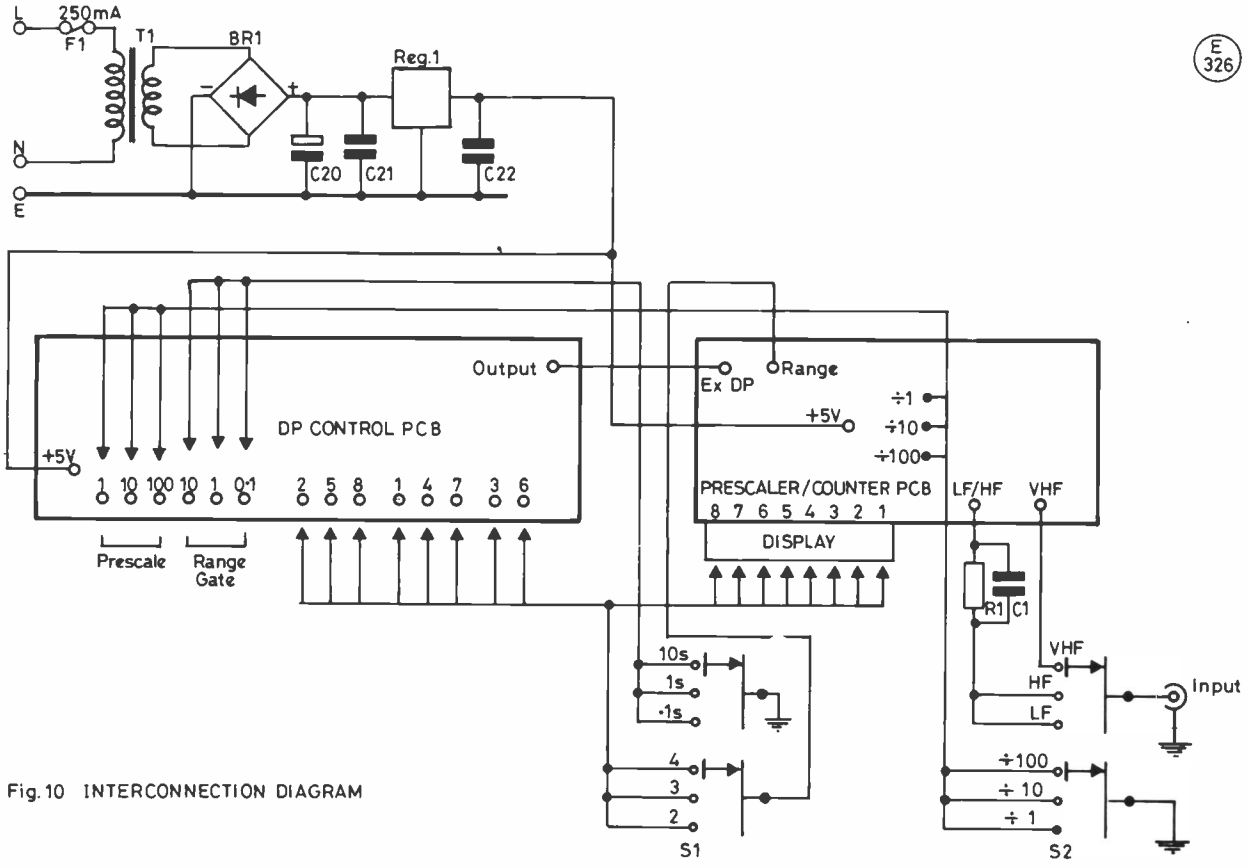


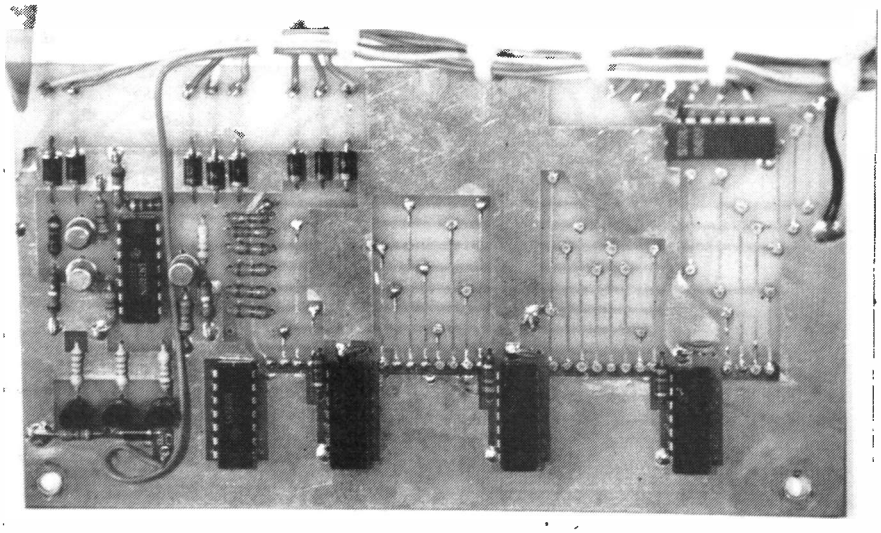
Fig. 10 INTERCONNECTION DIAGRAM

Table of Values
Fig. 10

T1 = transformer, 240V primary, 9V secondary at 1 amp.	BR1 = 1 amp bridge rectifier
Reg.1 = 7805, 5V 1 amp regulator	F1 = 250 mA slow-blow fuse
	C22 = 0.01 μF cer. plate

frequencies.

As making double-sided printed circuit boards at home can be a difficult process the Dover A.R.C. has a number of boards available at £12.00 per pair from Mr. Brian Joyner, "Brimar", Nelson Park Road, St. Margarets-at-Cliffe, Dover, Kent CT15 6HL.



The "Dover" decimal point control PCB.

receiver that we dreamt about owning 20 years ago but could not possibly afford!) I was even able to use my divide-by-ten 'scope probe to obtain access to the valve bases and still measure

Suitable metalwork is obtainable from H. L. Smith, 287-289 Edgware Road, London W2, for £3.95. Both these prices include postage and packing.

VHF BANDS

NORMAN FITCH, G3FPK

SOMETHING for everyone again this month from another bumper post-bag: successful DX-peditions, *Sporadic E* to the Balkans, *Auroras,* some fair tropospheric openings and the excellent *Perseids* meteor shower.

Awards News

The 40th 144 MHz QTH Squares Century Club certificate was issued on July 16 to Luc Selis, ON4ASL (BL79j) from Gent in Belgium. He is the first Belgian member of the QTHCC. There can be few U.K. stations who have not worked ON4ASL who was first licensed in 1978. Up to June 1 this year, Luc had worked over 6,700. On 144 MHz his station comprises a *Yaesu* FT-225RD with 3SK97 *Gasfet* preamp., a 125w amplifier and two 11-ele. *Yagis* at 25m. *a.s.l.* He is also very active on 70cm. and 23cm. with equally potent equipment. As 125 cards were submitted, his sticker for 125 was issued too. 107 QSOs were on SSB, the rest on CW, while tropo. accounted for 107 contacts with 15 *via Ar,* 2 *via Es* and one on MS. Luc is the VHF/UHF/SHF Contest Manager for the Belgian society, *U.R.E.*

Eric Cechota, OE3CEW, 144 MHz QTHCC member no. 22, has submitted more QSLs and is now up to 176 confirmed, his 175 sticker being issued on July 23. There was a 50/50 CW/SSB split and 19 contacts were on MS, 5 *via Es* and 2 on tropo.

For details of *Magazine* VHF/UHF awards send an *s.a.e.* to the VHF bands address. If possessing, or nearly holding, 100 cards for the QTHCC, please ask for the application form as well as the rules sheet.

Beacon Notes

The 144 MHz beacon GB3ANG on 144.975 MHz was observed to be off its assigned QRG for some weeks up to editing this piece. When measured by your scribe on Aug. 1, for instance, it was 1.66 kHz high, so maybe its crystal oven has gone open circuit.

On July 17, the Normandy beacon on 144.905 MHz FX3THF (YI13d) reappeared at 1000, as reported by GJ4ICD. However, it did not stay on very long.

Repeaters

Robin Waitt, GM6LJE, reports that VHF relay GB3EV on R4 in Cumbria, has now been overhauled and repaired by G4EXD and is QRV again. To maintain service in future power cuts, a float charged battery system will be installed. Robin wonders where all the mobiles are lately as activity through GB3EV is rather low. A rebuild of GB3AS on R1 at Caldbeck is being considered to incorporate a tone plus audio access which it is hoped will minimise accidental and deliberate spurious keying. Details of the *Anglo-Scottish Repeater Group* can be obtained from the secretary, GM6LJE, at Orchard Cottage, Canonbie, Dumfriesshire, DG14 0RZ. The group's *A.G.M.* is on Sept. 30 at 2.00 pm in the Grosvenor House Hotel, Warwick Rd., Carlisle.

Satellites

Considering the huge sums spent on the amateur satellite programmes, it is surprising how little reports are received concerning their actual use for communication. Even *AMSAT-UK's* admirable journal *Oscar News* rarely mentions such activity and it would be interesting to ascertain how many members regularly operate *via* the various satellites. Only two readers have provided such news this month.

Steve Reading, G4LZD, (Devon) is equipped for Mode A, now only available on the various Soviet *RS* orbiters. He reports the absence of beacons for days on end with no transponder operation. He had QSOs with W4FX (VA) and W9CBE (WI) *via RS-6* orbit no. 11,273; U2H over *RS-8*/11,171 and K3IJ (GA), KU1H (MT) and RV9FF *via RS-7*/11,373, after which Steve's Rx gave up.

Adrian Chamberlain, G4ROA, (Coventry) also operated through *RS-6/8,* "just to keep my hand in . ." but only worked a few local Europeans and east coast Ws. He remarks that *Oscar-10* really does spoil one. On July 20, orbit no. 830 at high elevation, he took his gear into the garden and had a pleasant QSO with A71AD in Qatar. In low elevation, westerly passes on July 26/27, a few east coast U.S.A. stations were worked from 6.00 am, plus KH6IJ. When W6IFW in Los Angeles was contacted, he patched Adrian's signal through the Catalina Island repeater and a number of locals spoke to him *via* hand-held transceivers. He was called by a weak station which was ZK2RS on Savage Island in the Niue Is. group in the Pacific, close to the International Date Line, a calculated ground range of 17,320 kms. although the total round trip signal path was 83,050 kms. On the 28th, the Olympic Games station W84OG was contacted in orbit no. 845 and on the next one, three JAs, ZS5NO and ZS5NZ for two new ones. On the 29th, during orbit no. 847, WB5RBM (TX) was contacted and the latter's friend WB5PMR broke in to say he was relaying G4ROA through a local repeater.

Oscar News No. 48 includes a three page article concerning a revision of *0-10* beacon and transponder schedule and which were planned for early August. The schedule for the General Beacon on 145.810 MHz is now: 0-5 mins. past the hour CW, 5-15 PSK, 15-20 RTTY, 20-30 PSK, this pattern then being repeated from the half hour thus providing a continuous service. The CW speed will be as it has been this past year: The RTTY format will be 50 *Baud,* 170 Hz shift; PSK telemetry will be as before, 400 *Baud.*

Beginning in early September, *0-10* will start a major eclipse season necessitating careful power budgeting as the satellite must operate on a positive power budget. Mode B consumes more power than Mode L, so a revised transponder schedule has been worked out. Orbits start at *perigee* and the time from one *perigee* to the next, the *anomalistic period,* is 699.536283 mins. This is divided into 256 equal time segments which are referred to as the *mean anomaly* and which figure in the *Keplerian* elements as published by *AMSAT-UK* from *NASA* sources. The revised schedule, based on *mean anomaly* figures is:— 000-089 Mode B; 090-106 Mode L; 107-217 Mode B; 218-234 off; 234-256 Mode B. To convert to real time, each *MA* "tick" equates to 2.7325636 mins.

The only item of news about *UOSAT-2* or *Oscar-11* is that the gravity gradient boom was successfully deployed on July 24. Readers may recall that *UOSAT-1's* boom has not been deployed due to a cable foul up. For detail of *AMSAT-UK* membership and services, send an *s.a.e.* to AMSAT-UK, London, E12 5EQ.

DX-Peditions

The Five Bells Contest Group put on a superb show from XS80d in 11 days of operation from July 23. The three involved were G4DHF, G4ODA and G4YHF. A fourth member could not make it due to illness. In all, 96 squares were worked although that was not the object of the trip. On MS mode, 56 QSOs were completed using 2½ min. periods and 95% of all skeds were successful. The few failures were due to impatience by sked partners and their not reading what GM4DHF/P sent. *E.g.* one DL sent GM4DHF so they sent back a string of Ms—"my call missing"—only to receive a string of Rs! Hence, no QSO. Most skeds were completed within 20 mins. so there was a lot of excellent tail-ending.

On tropo. about 350 QSOs were made in generally uninspiring conditions and at G3FPK, GM4DHF/P was always copiable at 786 kms. On July 24, two short *Es* openings were caught. At 1048 they were called by I6CTJ (GD) to whom they gave an RS41 report, but no report

received. By contrast, the I6 was RS59 with GM3WOJ (XR). Another seven minute opening occurred at 1751 when YU2EZA (IG), OE5MKM (HI), YU2SWW (IF), DC/PE0ALM (GI), OE5DML (HI) and OE6WIG (HG) were contacted. OE6LOG called but faded out.

A weak *Aurora* lasting about ten minutes was heard at 1820 on the 29th during which OZ1FGP (EQ), LA3BO (FT), LA8OJ (CS), SM6KMU (FR), EI6ASE (WN) and LA8OW (EU) were worked, but all were very weak. A magnetic storm took place on Aug. 1 and resulted in three periods of *Ar* propagation the first of which was discovered at 0243 when OY9JD (WV07h) was heard off the back of the beams. Activity was virtually nil till the SMs woke up when many were worked. This phase lasted till 0616 and Gs contacted on SSB were G6ZLR and G6BDV (ZL) and G1FFF. LA6QBA (GV) and UR2HD (LS) were worked on CW. The QTE was from 45 to 90°, mostly the latter.

During the major second phase from 1442-1820, 150 stations were worked and the QRM level was so high that it drastically curtailed the QSO rate. Stations from IX in the north to GM square in the south were worked at QTE down to 95° when the last station PA2VST was contacted. There was a third phase from 2115-2141 when SM3, 4 and 5 areas were worked, plus LA1K (FX) and OH1DP (LU). During this day, five PA stations were worked *via Ar* on 70cm. by GM4SIV/P, using the club call of the Group.

The 2m. station was running 400w to four 9-ele. *Yagis* from a very good site 900ft. *s.a.l.* 2 kms. west of Ben Horn. Separate generators were used for the 2m. and 70/23cm. stations. The site was extremely free of man-made noise and as the beams were swung to the south, an increase in this from many miles away was quite apparent.

Dave Johnson, G4DHF, has praised the efforts of G4ODA who did the majority of the very detailed logistic organisation of the expedition. But he stresses the high cost of such operations when borne by individuals. The team deserve a big vote of thanks for providing the opportunity for so many to work this rare square on three bands.

Another more modest, but just as welcome, trip to rare places was made by Steve Redway, G4TRA, from Bristol, to southern Ireland from July 6. Both he and his wife Rita, G4TRB, were issued with the same call, EI3VED and they operated from seven different sites in five squares. The gear was a *Trio* TR-9000 with 100w amplifier, home made processor, vox and pip-tone unit and 13-ele. portable *Tonna Yagi* on a 9m. telescopic mast. A 125Ah battery was used. The sites activated were WL11a, VL42h, UL19h, UL09f, UM70f, VM67e and WL03h. In all, about 680 QSOs were made in conditions varying from good to very poor. A full report on this trip will be published later as a separate article. Here again, quite a few amateurs, particularly newcomers, were able to contact some rare squares thanks to the enthusiasm of people who took radio gear along for their summer holiday.

QTH LOCATOR SQUARES TABLE

Station	23cm.	70cm.	2m.	Total
G3POI	—	—	425	425
G3IMV	—	96	363	459
OZ1EKI	—	116	345	461
G4IJE	—	—	324	324
DK3UZ	—	—	317	317
G3VYF	—	117	307	424
EA3LL	3	32	300	335
SP2DX	—	—	280	280
G4ERG	—	16	260	276
G8VR	2	24	246	272
G3BW	8	37	245	290
G4DEZ	—	—	241	241
GJ4ICD	13	116	235	361
GW3NYY	—	48	219	267
GW4EAI	—	—	214	214
9H1BT	—	11	210	221
GM4COK	—	28	204	232
G3FPK	—	—	203	203
GJ8KNV	18	79	201	298
G4DCV	—	40	201	241
LA8AK	25	62	200	287
G4KUX	—	36	200	236
G3UVR	17	79	196	292
G4MCU	13	78	193	284
G8KBQ	22	96	188	306
G3PBV	40	103	187	330
GW4TTU	10	56	185	251
G4OAE	—	42	184	226
G4NQC	60	84	183	327
GJ8SBT	26	47	182	255
G6ECM	—	—	182	182
G3BDQ	—	—	177	177
G8LFB	—	—	175	175
GM4CXP	—	27	172	199
G3JXN	68	109	170	347
G3COJ	41	95	170	306
G8TGM	—	—	166	166
G6HKS	—	—	163	163
G4TIF	—	82	160	242
G4BWG	—	64	152	216
G4HMF	2	35	152	189
G3XDY	54	101	149	304
G4MEJ	—	—	147	147
G6CMV	1	29	142	172
GM4IPK	—	—	139	139
G8HHI	20	77	135	232
G6ADH	—	35	135	170
G4RGK	1	50	133	184
G4ERX	7	61	132	200
G6DDK	3	15	131	149
G8ATK	23	82	129	234
G8TFI	51	109	126	286
G6MGL	—	42	125	167
G8PNN	43	78	123	244
G6DER	23	67	123	213
G4DOL	—	—	123	123
G4SFY	—	—	123	123
G4MJC	—	12	120	132
G4MWD	—	1	120	121
G8ULU	31	85	115	231
G4HFO	—	69	115	184
GW8UCQ	1	67	114	182
G4STO	29	48	113	190
G6JNS	1	19	112	132
G4GHA	—	6	110	116
G4IGO	—	—	110	110
G4YUZ	—	—	108	108
G8SRL	—	53	106	159
G8VFV	—	—	106	106
GM8YPI	—	29	104	133
G4MUT	—	70	102	172
G6HCV	—	—	102	102
GW3CBY	9	32	101	142
G8RWG	—	—	100	100
G4NRG	—	33	99	132
G8WPL	—	56	97	153
G6DZH	—	52	97	149
GI4OMK	—	—	96	96
G8ZDS	—	23	95	118
G4NBS	14	77	94	185
G4TJX	—	59	94	153
GD2HDZ	13	50	91	154
G4FRX	—	60	90	150
G8FUO	39	105	88	232
G6NWF	—	—	86	86
G4RSN	2	23	84	109
G8KAX	35	57	82	174
G1EZF	2	29	82	113
G4UYL	—	—	81	81
G8FMK	35	68	80	183
G6AJE	—	—	79	79
G8XTJ	—	—	76	76
GW8VHI	—	34	75	109
G6XLL	—	24	67	91
G4ROA	23	58	64	145
G4LZD	—	—	60	60
G4CQM	—	48	55	103
G4FRE	37	100	51	188
G6PFR	—	13	50	63
G6CSY	15	25	30	70
GM8BDX	8	24	29	61
G4BVY	9	100	—	109
G6XSU	—	42	—	42

Starting date January 1, 1975. No satellite or repeater QSOs. "Band of the month". 2m.

Contest Notes

This issue may just arrive in time for the 144 MHz contests on Sept. 1/2 from 1400-1400. They are two section affairs; Single operator and all other. Radial ring scoring for the *RSGB* version, and on point *per* kilometre for the *IARU* one. The 70 MHz Trophy and SWL contest, which used to be in August, takes place on Sept. 16, 0900-1700 and is a Fixed and All-other event. Contest exchanges to include the QTH as well as the locator.

The last *AGGW-DL* contest is on Saturday, Sept. 22, 1900-2300 on 144 MHz. It is for single operators only. Class A is for less than 3½w output, Class B for less than 25w output and Class C for more than 25w output. Exchanges to be RST plus serial number/Class/QTH Locator. The scoring is:— Class A with Class A, 9 pts.; A with B, 7 pts.; A with C, 5 pts.; B with B, 4 pts.; B with C, 3 pts. and C with C, 2 pts. Each main square worked counts for one multiplier point and each WAE country is worth five multiplier points. Final score is QSO points times sum of all multiplier points. Entries postmarked Oct. 31 latest go to Edmund Ramm, DK3UZ, P.O. Box 38, D-2358 Kaltenkirchen, German Federal Republic. This should afford a good chance to work new stations for the Annual Ladder.

Six Metres

It seems that the *D.T.I.* is very busy so has not yet got around to giving the go-ahead to beacon GB3NHQ, nor to choosing the additional 60 6m. applicants. Dave Lewis, GW4HBK, listened to the British end of the GJ/W opening on June 30/July 1 when GJ3YHU worked 47 North American stations as reported last month. All he heard was two bursts in two hours in Blackwood, Gwent.

Four Metres

During VHF NFD, Tim Raven, G4ARI, (Leics.) got another 20 counties, plus GW for his fourth 1984 country. The event provided another 52 stations for the CW table. The following day, July 8, it was the SSB leg and this gave Martyn Jones, G4TIF, (Warks.) nine more for the table, including G4ADV/P in Cornwall.

NFD helped Arthur Breese, GD2HDZ, to increase his 1984 tally to 40 counties and G3ZAM/P (I.o.W.) and G3YYF/P (E. Sussex) both on SSB were good QSOs. GW4HBK mentions GU4IUW/P on Sark on the 7th for a rare county on 4m. Apart from contests, it seems that scant attention is paid to 4m.

Two Metres

Welcome to several new contributors. Nigel Roberts, G4IJF, (Essex) uses a *Yaesu* FT-221R with *muTek* "front end" and a 9-ele. *Tonna Yagi*. He was alerted to the *Es* on Aug. 6 by G4PIQ and heard I7KOE at 1145. YU2WA/2 (ID) was worked at 1151 and other YUs were heard. From 1220 to 1248, things were quiet, then from 1248 to 1320 YU6AA (JC), YU2FM (ID), YU1EN (JE), YU1UN (JD), YU2s CCB, SEF and SNG (IF), YU1OYA (KD) and YU7QCA (JF) were contacted. An LZ was heard.

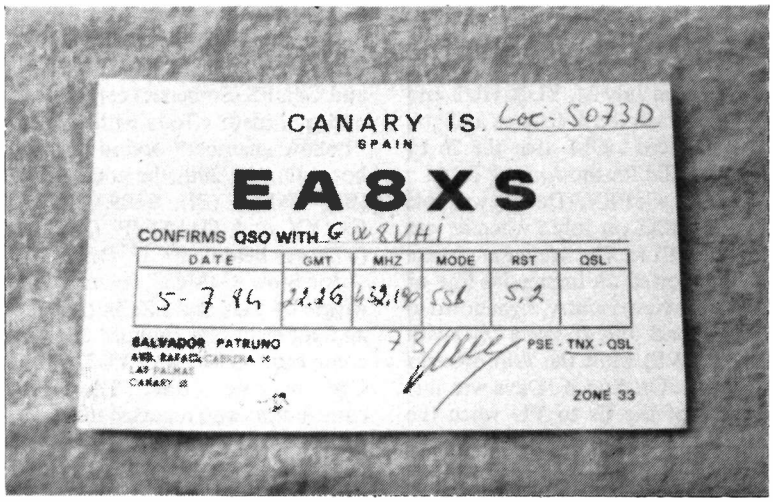
David Brown, G4TVH (Northampton) runs QRP using an *Icom* IC-251 and a pair of 10XY beams. He joins the CW ladder with 156 different stations worked on the band. Dave Cater, G4WHZ, (Essex) got his Class A licence on Feb. 2 and has worked 180 2m. CW stations. He asks we should remind readers that Monday evenings are CW activity periods.

Haydn Barker, G6XVV, (S. Yorks.) has been busy with A level commitments so his time for the hobby is limited. He now uses an *Icom* IC-202, the antenna being a home made one based on a design by G6OYL. Colin Morris, G6ZPN, (W. Midlands) has been a *Magazine* reader since 1965 and got his licence in Sept. 1983. He uses a *Yaesu* FT-726R and 5-ele. indoor *Yagi* from YM40g and managed CT1WW on June 30 in that fine *Es* event. NFD saw GU6XEA/P on Sark worked at 0550.

Paul Whatton, G4DCV, (Kent) decided it about time he entered the Squares table and, up to Aug. 8, he had accumulated 201 on the band. He is a keen MS operator now and recent successes include SM3BIU (HX), LA1K (FX), OK1OA (HK) and CT1WW (WB). Roy Charlesworth, G4UNL, (London) uses a *Yaesu* FT-480 and 6-ele. *Quad* at 20ft. An amplifier was due to be commissioned on July 28. He enters the CW table with 71 stations and promises to update regularly.

From the Isle of Man, GD2HDZ thinks he, ". . must have offended the Manx Fairies," because although GD3YEO in Douglas worked about ten EAs in the *Es* on June 30, Arthur worked nothing. Co. Armagh is a bit of a rarity so it is encouraging to see he lists GI1AFE on July 25.

A mouth watering report now from Geoff Brown, GJ4ICD, in Jersey on recent *Es* activity from the island. He lists July 22, 1316-1334, 9H1BT, 9H1CD, YU2EZA and IT9ZHA heard; the 23rd, 1445-1457, I8TUS (IZ), I8YZO (HY), I8REK (HA) and I0SNY/8. On the 24th, 1029-1035, SP6FUN (IL) and OKs in IJ and JJ heard. The real "big one" occurred on Aug. 6, from 1221. In the following 75 mins. Geoff had 104 QSOs, sometimes at the rate of four-a-minute. To summarise, he contacted 20 squares, HG, ID, IF, IG, II, JE, JF, JG, JH, JI, KD, KE, KF, KG, KH, LE, LF, MC, MD and the odd one out, FE. The seven countries worked were HG, I, LZ, OE, OK, YO and YU, best DX being LZ1DJ (MC49g) at 2,260 kms. There was one I, 14 HGs, 2 LZs, 3 OEs, 12 OKs, 7 YOs and 62 YUs.



This QSL card confirms the present *IARU Region I* distance record for a 432 MHz tropospheric mode contact. Reg. Woolley, GW8VHI, (YL32f) and Salvador Patruno, EA8XS, (SO73d) made this 2,787 kms. QSO on SSB on July 5, 1984, at 2226 GMT.

By contrast Alex McCreadie, GM8YPI, (Berwicks.) refers to, ". . a brief patch of *Sporadic E* in this area," on Aug. 6 during which G1FFF in Berwick-on-Tweed worked an Italian in JA and a Yugoslavian in JC. Alex only worked YU6AA having missed the first part of the event. Alex had better luck in the June 30 Spanish *Es* session, though, which lasted an hour and gave him five new squares. The best DX was EA7ERS (WX) and the most unwieldy call worked was SM5DIC/P/EA4. In NFD, from an excellent site on Cairn o'Mount they were shouting themselves hoarse trying to work stations as they were hearing southern stations having two QSOs *per* minute. It seems the scales are weighted against northern U.K. participants in contests.

From Wales, Roy Webb, GW3CBY, (Swansea) worked YUs in JD, JF, and KF, plus LZ1AB (LC) for his first LZ on 2m. in the Aug. 6 *Es*. Kelvin Weaver's GW4TTU, (Gwent) "let down of the month" was an incomplete QSO with EA8XS (SO) on July 5 and 7. However, he more than made up for it as his table position illustrates. NFD saw good tropo north/south with F6FZS/P (ZD) at 977 kms. and F6HPP/P (ZC) at 985 kms. the best DX in France, but probably *the* prize was C31SE (AC) at 1,076 kms. on July 8. Other good tropo. openings were on the 14th to GM4IPK/P (XQ80d) and to ON in BK square that day and on the 20th. On Aug. 4 EI2VRO/P (VL) and EI2VPX/P (WL) with EI2VNS/P (WM) in Co. Wexford and F0GAL/P (YG) the next day. GB2XQ (XQ80d) was worked on Aug. 6.

An *Aurora* on July 13 brought Kelvin G4SWT (ZP) and G3BW (YO) around 1540. The *Es* on Aug. 6 was picked up at 1238 when 11 YUs, a YO, 2 HGs and 2 LZs were worked. At 1336 he was called by SV2JL (LA) who unfortunately faded down. At 1404 OK2KZR (IJ) was worked and at 1436 UC2AA was heard on CW calling for DX. MS skeds were completed in the period July 21 to Aug. 5 on SSB with I3LGP (GF), UR1RWX (MS) and HB9RCI (EH) and with DK0TU (GM), OE3CEW (II) and YU2JL/2 (IC) on CW. On tropo. again, July 29 saw an opening to Spain in the morning and evening with XD and VD worked, plus EA1YV (VC67h).

Reg Woolley, GW8VHI, (W. Glam.) contacted EI3VED/P in WL, VL, UL and UM squares, also EI3BK (VL08e) on July 1. EA1ED (VD) was worked in the 4th and 5th and EB1MS (XC01b) on the 3rd. The prize QSO was EA8AJU (RO48c) at 1756 on July 28 with RS52 reports each way. On MS, Reg worked his first CT, CT1LN (WX) it being the CT's first MS QSO. I4VOS (FF) was worked on the 28th, and EA5EIR (ZY) the previous day. His first German QSO was *via* MS with DC7UT (GM) so GW8VHI seems to be another becoming hooked on this fascinating mode.

Next to the English stations starting with Mick Allmark, G1EZF, (Leeds) who mentions EI9ED/P (Cavan), EI2UCD/P (Louth) and EI2SRC/P (Sligo) for welcome Irish counties for the Annual Table, along with GU4XEA/P in Sark. George Haylock, G2DHV (Kent) has been out portable using CW to work into Germany and yes, OM, it is the primary square, like AL and ZN, that count for the table.

Bill Hodgson, G3BW, (Cumbria) has been concentrating mostly on MS lately and, in burning the midnight oil, has occasionally found some *Ar* activity. This has yielded OH1JN (KU71j) and OZ1HDB (ER49c) which latter Bill has been seeking for years. Recent MS successes include:— 4U1ITU (DG),

F6FHP/P (BE), SM6AFH/2 (JZ), SM6AFH/2 (JA), also in IA and KA, OE3CEW (II), EA2LU (ZC) and DK0TU (GM). *Via Es* on July 24, YU3s HUL and ZV (HG) were worked at S9-plus and you will have deduced , OM, that the 26 EI counties are valid for the Annual Table.

Dave Sellers, G3PBV, (Devon) was able to identify EA8XS on July 5 when he was working GW8ELR. The *Meteosat* picture on the 6th showed an impressive line of cloud from the west country, right down to EA8 and beyond. July 20 saw a QSO with EI3VED/P (WL) while the 29th brought EA1YU (VC). On Aug. 6, Dave was just off the end of the Es to YU when the French stations were well into the event. The first QSO was with YU5XBN (KB) at 1129. YU1UN (JD) and LZ1AB (LC) were next contacted and from 1232 for one hour, it was bedlam; 15 more YUs, 6 HGs and LZ2XU were worked, but two YOs were lost. Dave mentions a rumour that a YL operator in Oxford had worked a couple of Turkish stations in OB. So, please come forward Dear Lady!

Cyril James, G3VVB, (Cornwall) discovered the Aug. 6 *Es* while supping a pint of homebrew and listening on 2m. He heard and worked LZ1AB and was then inundated with, ". . . a host of YUs and LZs calling in chorus." Ten were worked in 20 mins. before Cyril went QRT to work on his nice little 23cm. and 13cm. cavities. However, he alerted other stations through local repeaters and the telephone so that G4WIQ, G4DGU and G4HOL got in on the act.

Peter Atkins, G4DOL, (Dorset) had tropo. QSOs with VD, XC and YD squares in Spain on July 4/5 and with several EIs in VM, VO, WM and WO in NFD weekend. Six new squares were added in the month. Martin Blythe, G4HFO, (Cornwall) thinks he was first of many to work EA8AJU in Tenerife at 1702 on July 28. He worked EA8XS the next day. Martin operated from Lundy Island on Aug. 2 and had a couple of local QSOs using an *Icom* IC2-E.

Since moving to Somerset and starting again on the squares trail, Ken Osborne, G4IGO, has wasted little time in getting over the 100 worked, using *Ar, Es,* MS and tropo. modes. Aug. 1 was an interesting day with weak Band 1 TV from 1330 and by 1500 Band 2 was open at the same time as there was an *Aurora.* Band 1 faded out at 1645 and from then till 1820 there was an *Ar.* As this faded, up came the *Es* to 90 MHz.

On the morning of Aug. 5, Band 1 TV was open all over the place. Ken had an MS sked with LA6QBA (GV) from 0600 but reflections got worse and worse. At the same time, GWs were working into HS and HT squares *via ES.* At 2100, Band 1 opened up again and by 2250, Band 2. He suggests that 2m. could have been open to Italy for a few minutes at 2300.

G4LZD (YK53h) wrote before the Aug. 6 *Es* so Steve's letter deals with tropo. only. Using just 2½w, he got into VM, ZC and ZD on NFD weekend. On July 13, he and G4UPS (Somerset) experienced some odd multipath effects with echoes and a "hollow chamber" sound for about an hour. On the 29th, he contacted F6EID (BI), F6FJE (BI), HB9AEN/P (DG), EA1YV and G4AFF/P (XJ). EA1TA (VD) was heard.

Jon Stow, G4MCU, (Essex) worked the gaggle of YUs and LZs in the Aug. 6 *Es* and got eight new squares. On Aug. 7 he completed on MS with YU2JL/2 (IC) on CW in one hour. The following contributors also reported many *Es* QSOs to YU, etc., on Aug. 6:— Dave Dibley, G4RGK; Byron Fletcher, G6HCV; Richard Mason, G6HKS; Roger Parry, G6NWF; Laurie Segal, G6XLL and Jim Rabbitts, G8LFB.

Les Bober, G4NOZ, (Essex) added another 16 stations on CW and mentions two new lady operators, June Charles, G4YIR, who contributes to this feature, and Linda, G4YVJ, from Worthing. Rod Burman, G4RSN, is now in his new QTH in Berkshire only QRV on 2m. at present. It seems very good to the north with GB3ANG being heard for the first time ever, and GM4DHF/P (XS) being worked in the *Ar* on Aug. 1 at 0550 on SSB.

Another neat and concise report from Ray Baker, G4SFY, (Norfolk) mentions four CTs worked in the June 30 *Es.* He has added another 71 stations on CW and seems to like the mode. SSB during NFD gave some interesting ones including EI9ED/P (WN06e) and EI2SRC/P (VO59h). In an *Ar* on July 13, LA and GM were worked on CW and on the 19th some OZs on tropo., the next day producing lots of PAs and Ds plus EI3VED/P (WL). G4TIF (Warks.) heard EA5DGC on 144.300 MHz for five mins. from 1648 on July 23. He peaked to S2.

Tim Kirby, G4VXE, operated in NFD from near Truro in Cornwall while on holiday using an *IC-202* and 3-ele. *Quad* and working over to EI and F. Up to July 29 he had missed all the *Es* from home in Cheltenham. Sue Frost, G4WGY, (London) lists a further 13 CW contacts and it is a pleasure to hear the ladies doing a bit of brass-pounding. Mike Johnson, G6AJE, (Leics.) missed last month's deadline. He mentions enhancement of signals due to aircraft reflections. The give-away here is that the distant signals build up steadily then majestically fade back to their original weak strength. A *Boeing 747* has a reflecting area of 63 m^2 which is quite large.

Keith Hewitt, G6DER, (S. Yorks.) worked YU2SOM (IG) and YU3OV (HG) *via Es* in a 10 mins. opening at 1025 on July 24. On Aug. 1, he completed on MS with I3LGP in 48 mins. on SSB. Up to Aug. 4, Mick Cuckoo, G6ECM, (Kent) found things quiet but was one of many to net GM4DHF/P on July 27. An interesting one for G6HKS was LA0DT/MM in BO square on Aug. 4. Philip Ruder, G6MGL, (London) was not very active in July but did manage G4VCJ (Cleveland), GI4OPH (Down) and EI3VED/P (Waterford).

ANNUAL CW LADDER

Station	4m.	2m.	70cm	μWave	Points
GW4TTU	—	247	53	10	310
G4ARI	67	193	—	—	260
G4SFY	—	257	—	—	257
G4WHZ	—	180	—	—	180
G4TVH	—	156	—	—	156
G4NOZ	—	136	—	—	136
G4TON	—	85	2	—	87
G2DHV	19	60	1	—	80
G4VXE	—	62	10	—	72
G4UNL	—	71	—	—	71
G4LZD	—	63	—	—	63
G4WGY	—	54	—	—	54
G4EZA	—	52	—	—	52
G4SGO	—	43	1	—	44
GM4CXP	—	21	—	—	21
GU4HUY	—	13	—	—	13

No. of different stations worked since Jan. 1.

Roger Parry, G6NWF, (Cheshire) noted strong *Es* on Band 2 prior to departing to the portable site on Aug. 5 for the Low Power contest. As G6LJO/P, 289 QSOs were made. GWs were heard working some Scandinavians *via Es.* Laurie Segal, G6XLL, (London) sent in his usual very detailed computer print-out list of activity. His best tropo. DX was EA1CYE/P (YD42f) on July 29 at 946 kms. and the best *Es* DX was YU6AA (JC47c) at 1,791 kms. on Aug. 6.

Jim Rabbitts, G8LFB, (London) does a lot of VHF monitoring for *Es* on Band 1 TV and his reports have been passed on to Ray Flavell, G3LTP. In NFD, his regular CQ calls eventually produced a response from EI7DJ (VM) for a new square. A short *Es* opening on July 23 brought 9H1CD and 9H1CG and on tropo. on Aug. 5, F0GAL/P brought another new square, YG. Neil Clarke, G8VFV, (W. Yorks.) caught the Iberian *Es* on June 30 and, in the hour from 1740, worked two EAs in XX and CTs in VZ, WA and WB to bring his total to 106.

Seventy Centimetres

G3PBV is still suffering from *Syledis* QRM, as was F1FHI in *DUBUS Informationen.* On July 8, Dave worked EA1ED (VD) and EA3MM (BC) his first new squares on the band this year. John Cleaton, G4GHA, in spite of antenna problems, did manage four more squares in NFD, Frenchmen in AJ, AK, YI and ZJ, from Dorset. He is very grateful to the local amateurs for keeping him on the air as he is unable to do much for himself.

G4ROA picked up some new ones for the Annual Table in NFD, plus GJ4ICD on July 16, whom G4TIF also worked on the 21st. Martyn's other 1984 counties were GI4GVS (Antrim), G6HYR (W. Yorks.), G8AAY (Dorset) and G3RQZ (Surrey). F1ANH/P was contacted on July 8. G4VXE also operated portable from near Truro on 70cm. as well as 2m.

ANNUAL VHF/UHF TABLE

January to December 1984

Station	FOUR METRES Counties	FOUR METRES Countries	TWO METRES Counties	TWO METRES Countries	70 CENTIMETRES Counties	70 CENTIMETRES Countries	23 CENTIMETRES Counties	23 CENTIMETRES Countries	TOTAL Points
GW4TTU	—	—	90	36	41	10	11	4	192
G6DER	—	—	68	20	52	11	13	5	169
G4TIF	29	3	66	15	42	6	—	—	161
G1EZF	—	—	82	18	47	9	3	1	160
G3BW	39	6	58	21	22	7	*16*	*5*	153
G4ROA	—	—	53	12	47	8	27	1	148
G8PNN	—	—	47	13	47	10	22	9	148
GD2HDZ	40	5	52	7	33	5	*6*	*3*	142
G6XLL	—	—	66	15	50	7	—	—	138
G4ARI	39	4	71	18	—	—	—	—	132
G4MUT	34	4	40	12	25	5	—	—	120
G6MGL	—	—	54	16	39	9	—	—	118
GW8UCQ	—	—	55	14	37	8	—	—	114
G4VXE	—	—	62	9	33	4	—	—	108
GW3CBY	6	3	52	14	21	5	*6*	*3*	101
G6ZPN	—	—	63	9	20	3	—	—	95
G6ECM	—	—	73	21	—	—	—	—	94
G3FPK	—	—	71	20	—	—	—	—	91
G4NRG	22	4	22	14	17	3	—	—	82
G4SFY	—	—	61	17	—	—	—	—	78
G6AJE	—	—	62	15	—	—	—	—	77
G4XKR	—	—	41	7	23	4	—	—	75
G6HFF	—	—	51	7	13	4	—	—	75
G4LZD	—	—	53	14	—	—	—	—	67
G6NVQ	—	—	60	7	—	—	—	—	67
G8RWG	—	—	52	14	—	—	—	—	66
G8KAX	—	—	35	11	15	4	—	—	65
G8TFI	—	—	—	—	47	10	5	3	65
GM8YPI	—	—	30	12	12	7	—	—	61
G8XTJ	—	—	42	9	—	—	—	—	51
G4YIR	—	—	42	8	—	—	—	—	50
G8VFV	—	—	41	9	—	—	—	—	50
G6XSU	—	—	—	—	40	8	—	—	48
GW4HBK	23	4	6	3	7	2	—	—	45
G2DHV	7	1	24	3	3	1	—	—	39
G6XVV	—	—	32	7	—	—	—	—	39
G8FMK	—	—	3	1	21	2	7	2	36
GM4CXP	—	—	20	7	6	2	—	—	35
G3PBV	—	—	—	—	—	—	29	5	34
G4EZA	—	—	24	8	—	—	—	—	32
GU4HUY	—	—	26	5	—	—	—	—	31
GW3MHW	16	2	—	—	—	—	—	—	18
G6CSY	—	—	6	1	4	1	—	—	12

Three bands only count for points. Non-scoring figures in italics.

during his holiday, using a *Yaesu* FT-790 and half wave antenna. In NFD, Tim contacted Fs in AJ, YI and ZJ. Back home in Gloucs., he worked GW3NYY (XL) and GW8UZL (ZN).

Peter Crosland, G6JNS, wrote that the *Worcester Moonbounce Society* has the callsign G1EME and will be on in the *IARU* contest on Oct. 6/7 using an *Icom* IC-471 and *Tempo* 2004-A amplifier with four 19-ele. *Yagis*. G6MGL worked his first GM at 0013 on July 6; it was GM4RQW in YO. G6XLL polished off another 12 counties and three countries since his last report, including GW4SMG/P (Mid-Glam.), GW6ULE (S. Glam.) and GU4XIT/P (Sark). His best DX so far is F6HMQ/P (XI50c) at 441 kms. on July 28.

Roy Gibbons, G6XSU, (Herts.) is only QRV on 70cm. with 10w at present but a 2C39A amplifier is being slowly built. He is aiming to put his Rx preamp at the masthead while the good weather lasts. Recent successes were GW3NYY and F6APE and F1GST (ZH) at 0700 on July 29. He finds early morning conditions often quite good, but no activity. In the QRP contest, conditions were very flat.

From Northumberland, Gordon Emmerson, G8PNN, worked GM4SIV/P in XS on July 24 and lists 12 more counties for his Annual Table total, including G6ISY/P (I.O.W.). From north of the border, GM8YPI found NFD conditions on July 7 better on 70cm. than on 2m. with many PAs and OZs, plus LA1ZE.

A got-away for GW4TTU in NFD was C31SE who called Kelvin but who was sunk in QRM. His longest DX was F1EPP/P (ZC) and F1BPK (AD) and F6CIS/P (ZD) were other long shots. He says that EA8AJU (RO) is now QRV on 70cm. GW8VHI had QSOs with EA1ED and EA1BLA (VD) on July 28, also F6FOE (YI), while nearer home, GW8FKB in XN was a new square for Reg.

Microwaves

G1EZF is not QRV on 23cm. having returned the transverter to its owner. Mike hopes to build a transverter and PA. G2DHV has his 10 GHz head and dish mounted and awaits "the electronics". G3PBV is doing so well on 23cm. that he has put in an entry in that band only in the Annual Table. He spent most of VHF NFD on the band and worked F6CIS/P (ZD) and F6GRA/P (ZG). The French coastal stations were very strong throughout. GM4BYF/P was also quite readable but did not hear Dave. Best northerly DX was G4HWA/P (ZO) at 472 kms. He noticed problems from local portables whose 2m. signals were being radiated on 23cm. The mechanism was that, when operating on 2m. and 23cm. simultaneously, the 2m. signal was being picked up by the 23cm. transverter and re-radiated at a frequency offset by the LO crystal error.

Mark Turner, G4PCS, reports a definite NFD example of sideways reflection at 23cm. His Group used eight 23-ele. *Yagis* but only by beaming due east from AN could they work a GM in YQ square. Unfortunately they did not ascertain the GM's QTE. G4ROA used NFD to get eight more Table counties and also worked F0FF/P for another country and square. G6XVV is on the look out for microwave gear, apparently to homebrew, so would appreciate details. He is QTHR and promises to reimburse postal and copying costs.

G8PNN made his first QSOs on 13cm. on July 29 to get four squares and three counties, all over 434 kms. most at S9. 5w output from a 2C39A to a 5ft. dish is used. Gordon's log extract shows a QSO with PE1CJW (DM53h) at 620 kms. for the best DX. He has had more success on 23cm. and worked GM4YHF/P (XS) in Highland region, an all-time new one on July 30. In NFD, GW3WDG/P (Clwyd) was a new country for 1984 and all-time county.

GJ4ICD used NFD to increase his 23cm. squares to 13, Geoff's best DX being F6CIS/P at 650 kms. He reports that GJ3KMI/P worked them with 1½w. Andy Renouf, GJ8SBT, is back in Jersey and now has 26 squares on 23cm. Finally GM8BDX reports QSOs with PE1IST and PA0RDY on July 29 on 23cm. Alex was using 10w to a pair of stacked 23-ele. *Tonna Yagis* in an upstairs bedroom. He now has eight squares on this band.

Final Miscellany

G4IGO received a complete list from EA8XS of all Salvador's VHF/UHF QSOs with the British Isles since Aug. 1980. When space permits, this will be published for the records. G3COJ was one of the operators of GK0JFK at Runnymede. It was put on by the Chiltern DX Club from Aug. 3 to 5 and on 2m. they made 370 QSOs, 60 on 70cm. and 10 on 23cm. Countrywise, it counts for England but the prefix is unique. QSLs to G3VIE who is QTHR with an *s.a.e.* for direct reply.

Deadlines

That's it for another interesting month. All your news, comments and claims for the next month by **Sept. 5**, and for the November issue by Oct. 3. Send it to:— "VHF Bands", SHORT WAVE MAGAZINE, 34 High Street, WELWYN, Herts. AL6 9EQ. *73 de G3FPK.*

Trouble-shooting Some Favourite Rigs

HUGH ALLISON, G3XSE

Most motor mechanics can reel off a list of stock faults that occur on various cars, for instance sticking petrol pumps on Morris Minors or cam faults on certain Ford engines, and the same pattern seems to be emerging on amateur radio equipment. Since, one way or another, the author repairs hundreds of radio items per year, he decided to pass on the following list of more common faults in the hope of enabling others to make a quick repair.

TS-520 (all variants)

GOT a good receiver but no action on the transmit side? Here is some good news: nine times out of ten, assuming that the fault occurred suddenly, it's either a dry joint on the PA screen switch (located on the back panel) or the switch has gone open circuit.

Got all modes transmit except CW? Been using a linear? Pull off the top cover and locate the key socket. There is a resistor in series with the socket, and what has happened is that RF picked up on the key lead has burnt the resistor out — you have not been using screened cable to your key, have you! It's interesting to note that the later TS-830 handbook tells you to use a screened lead to the key (now you know why, don't you). After replacing the resistor I fit a 1000pF capacitor across the key contacts (on the socket) to prevent it happening again, although in one persistent case it needed a choke in series with the resistor to stop it.

Eddystone EA-12

Considered by some to have been the 'Rolls Royce' of receivers. If you are missing a band it's odds-on that the first conversion, crystal controlled oscillator has got a duff crystal in it. This often happens when the unit has been used without adequate ventilation; don't run it with the log book obstructing the vents.

Eddystone EC-10

Noise? Disconnect the aerial. Does the noise increase with the volume control? If so the problem is RF or IF. A constant level whilst varying the volume control means it's an audio fault, and we have already got the fault narrowed down to four transistors in one easy go. Being full of dirty tricks, I normally unsolder collectors of transistors, working outwards from the volume control, until the noise stops; it is usually the resistors biasing the transistor in question that have gone noisy, but suspect the transistor if all else fails.

The AF114 to AF117 Transistors

These are used in the EC-10, but the following applies to their application everywhere, particularly in car radios. For some reason the screen lead (normally earthed) shorts, internally, to the collector. Check by looking for volts between earth and collector (remember that they are p.n.p. so positive to earth); no volts means you have found the fault. The trick here is to snip the screen wire off!

FT-707 ("Wayfarer")

Bad audio distortion is caused by the first transistor after the volume control playing up, quite common and inexplicable. A 2N2369 will do as a replacement.

FT-DX150

No action on 12 volts, OK on mains? It's the inverter transistors on the back. Expensive, but not as expensive as:

Atlas 180

No PA current on transmit? Oh dear, very expensive, the PA transistors have gone; try *Modular Electronics* for some cheap second-hand (ex-equipment) near equivalents. You might have to drill the odd hole but with the real, proper replacements costing £40 *each* it's worth a try. Moral: never, ever, abuse this rig!

Trio 9R-59DS

Mains hum that slowly gets worse, with lowering audio output, is the capacitor (normally 0.01μF but sometimes 0.001μF) from the anode of the audio output valve to earth gone leaky. Very common. Just take it out!

Codar AT-5

No net, no action on transmit, normally equals a duff EF80 VFO valve.

Microwave Modules

These good people do not deserve a place in a list of faults because their equipment does not go wrong; *people* make their products go wrong. Converters get transmitted up, causing all sorts of damage. Transverters get given too much power up them on transmit (the 50-ohm terminating resistor is often open circuit and this can cause no end of spurious outputs).

M.M. normally allow such massive safety margins, especially on PA transistors, that they don't blow for any reason barring, normally, excessive volts. Is your 12 volt supply really up to it? I suggest it should be examined very carefully since, once replaced, the PA transistors will only go again, if the PSU caused the fault. Very often the fault has been caused by clipping a battery charger onto a car battery and then clipping the transverter or what-have-you to the charger leads. A poor connection to the battery. even momentarily, can push 18 or 20 volts up the rig. Connect the rig to the battery permanently (*via* a fuse) and all should be well. Beware cheap CB power supplies as these can give out 24V when they go wrong!

KW-2000

Here is a tip from your Editor who says that drifting VFO's in this transceiver can often be cured by changing the VFO valve. Although the valve removed may be 'sound' in all respects, another bottle may well produce greater long term stability.

". . . he wants a replacement memory chip but he's forgotten which type . . ."

CLUBS ROUNDUP

By "Club Secretary"

The Pile

Starts with **Acton, Brentford & Chiswick** this time; the venue is Chiswick Town Hall, on September 18, when there will be a discussion on "Members' Problems". The Hq. is in High Road, Chiswick, London W4, and the start at 7.30 p.m.

At **Axe Vale** the locals foregather in the Cavalier Hotel, West Street, Axminster on the first Friday in each month. September 7 is down to a talk on RSGB.

Northern Ireland's **Bangor** now; they get together on Friday, September 7 after the summer recess, for the AGM. Where? The Sands Hotel, on Bangor's sea-front, 8 p.m.

The crowd at **Barry College of Further Education** is based in the College Annex at Weycock Cross, Barry, South Glam. We gather they have a session down for September 1 and 2 from Flat Holm Island, using GB2FI, from WAB area ST26, on HF, VHF and UHF. The same source will give details of the clubs other activities — *see* the Hon. Sec's. Panel for the contact.

The venue for the **Bridgend** meetings and the frequency have both changed; they are now at the YMCA, Angel Street, Bridgend, on the first and third Friday of each month, with the first being an informal and the second the formal affair with a talk, business, films or whatever. For September the formal one will be a talk on the club constitution, before the October AGM.

B.A.R.T.G. is the one for all who are interested in RTTY — and the membership is expanding at a tremendous rate this year, thanks to their publicity campaign. The current issue of the newsletter *Datacom* is worth the price of the first year's sub., come to think of it! All the details from the address in the Panel.

On now to **Bury** where on September 11 they have a talk on "Remote Inspection — Video or Photography" by G4OAC. While the normal routine is to meet every Tuesday evening, this month the Mosses Community Centre in Cecil Street will be closed on September 18 so on that evening there will be no club gathering.

Next we have **Cambridge Repeater Group;** all the details you could possibly want from the Hon. Sec. — *see* Panel.

Turning now to **Cheltenham** where the newsletter was so interesting this time that we almost forgot to look for the Hq. — Stanton Room, Charlton Kings Library, Cheltenham — or the date and subject: September 7, vertical aerials by *Alan Dick and Co. Ltd.* September 14 is the natter session.

Off we go down to **Chichester** for the next stop, at Fernleigh Centre, 40 North Street, Chichester; the gang foregathers here on the first Tuesday and the third Thursday in the month, in the Green Room. On September 4 they have a presentation by Sussex Repeater Group, while the other meeting is on 20th.

A change of Hon. Sec. for **Cornish** — *see* Panel for the details — but the meeting is still on the first Thursday of the month at the Church Hall, Treleigh, on the old Redruth Bypass, the start being at 7.30 p.m.

Crawley are to be found at Trinity Church Hall, Ifield, on September 26 for G3GRO's 'rig clinic'. The informal on September 12 is at G3GRO's QTH — so we would think that before you turn up you should contact the Hon. Sec. — *see* Panel for his details.

On Saturday, September 15, the **Crystal Palace** group will have a talk on amateur television, by John Stockley, G8MNY. The venue is All-Saints Parish Rooms, Beulah Hill, Upper Norwood, London SE19, opposite the IBA transmitter mast.

We turn next to **Dartford Heath D/F**, where they get together on the Tuesday prior to a Sunday Hunt, at the "Horse and Groom", Leyton Cross, Dartford Heath. For this month the date of this session is September 11, and the start is later than usual, at 2100 clock. At this meeting you will get all the latest information on the next Sunday's activity.

September 10 and 17 are the two meetings shown for **Dudley**, at the Allied Centre, Greenham Alley, off Tower Street, starting at 7.45 p.m. Both are noted as natter dates "unless something can be organised" — so you can guess something will be fixed up!

The **Edgware** informal is set for September 13, and on September 27 they have a quiz. conducted by Alan Masson, G3PSP, at their club QTH, 145 Orange Hill Road, Burnt Oak, Edgware.

The Community Centre, St. Davids Hill is host to the **Exeter** crew on September 10, for a visit by *Spectrum Communications,* who will be demonstrating their products.

Northwards now, to **Fylde** who are very happily based at the Kite Club, Blackpool Airport; September 4 is the main meeting, with a talk on RTTY by G4RSA, and the informal is on September 18. Both make a prompt start at 7.45 p.m.

Further north still, and we reach **Glenrothes,** and their base at Provosts Land, Leslie, Fife. Here on September 16 they have the AGM.

G-QRP Club is the one for the low power enthusiast in particular, and also for the home-brew equipment addict; all the details from the Hon. Sec. — *see* Panel.

September 27 is the date for **Greater Peterborough,** at Southfields Junior School, Stanground. Details of the programme are not given — things were still being "set up" at the time of their letter.

For the details of the **Harlow** club, and their weekly meetings at the Old Barn, First Avenue, Harlow, we must refer you to the Hon. Sec. — *see* Panel for the details.

The **Hastings** newsletter has simplified the programme data on the front page for us; the third Wednesday is the main meeting, at West Hill Community Centre, Croft Road, Hastings, and there are also informals every Friday evening at Ashdown Farm Community Centre, Downey Close, off Harrow Lane. Once you get that under you belt, you can dig into the other activities of the group!

September 5 is a talk on thunderstorms and lightning by G3MYA, with an informal on 12th. September 19 is a junk sale,

Louis Varney, G5RV, (centre) was guest speaker at the mid-July meeting of Verulam A.R.C. His multi-band antenna design of 1946 is, of course, a by-word among HF operators, but on this occasion his talk covered aerials and feeders from basic principles, with fascinating clarity, drawing on more than sixty years of involvement with radio — including a period as a professional engineer with the Marconi Company in the lifetime of its founder. Also in the picture is (left) Bob Youens, G2HAR, and club treasurer Geoff Moffatt, G8SQD.

photo: G3PZF

Names and Addresses of Club Secretaries reporting in this issue:

ACTON, BRENTFORD & CHISWICK: W. G. Dyer, G3GEH, 188 Gunnersbury Avenue, Acton, London W3. *(01-992 3778)*

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BANGOR: S. Mackay, GI4OCK, 11 Dellmount Park, Bangor BT20 4UA. *(Bangor 54049)*

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BRIDGEND: T. C. Morgan, GW4SML, 4 Rhiw Brackla, Bridgend, Mid-Glam.

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REPEATER MANAGEMENT GROUP, AREA 'E': G. Dover, G4AFJ, 12 Greenwood Avenue, Nottingham NG3 7FX. *(0602 875200)*

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SOUTHGATE: R. Snary, G4OBE, 12 Borden Avenue, Enfield, Middx. EN1 2BZ.

SOUTH MANCHESTER: D. Holland, G3WFT, 32 Woodville Road, Sale, Greater Manchester. *(061-973 1837)*

STOCKTON: J. A. Walker, G6NRY, 7 Widdrington Court, Stockton-on-Tees, Cleveland TS19 8UF.

SURREY: R. Howells, G4FFY, 7 Betchworth Close, Sutton, Surrey SM1 4NR. *(01-642 9871)*

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TODMORDEN: J. Gamble, G6MDB, 283 Halifax Road, Todmorden, Lancs. OL14 5SQ.

VALE OF WHITE HORSE: I. White, G3SEK, 52 Abingdon Road, Drayton, Abingdon, Berks. *(0235 31559)*

VERULAM: H. Claytonsmith, G4JKS, 115 Marshalswick Lane, St. Albans, Herts. *(St. Albans 59318)*

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WELLAND VALLEY: A. Faint, G4TZY, 33 Fairway, Market Harborough, Leics. LE16 9QL. *(0858 62827)*

WEST KENT: Mrs. J. Green, G4UPI, 13 Culverden Down, Tunbridge Wells, Kent TN14 9SB. *(Tunbridge Wells 28275)*

WIRRAL: G. Lee, G3UJX, 30 Manor Drive, Upton, Wallasey. *(051-677 1518)*

WORCESTER: A. C. Lindsay, G4NRD, 11 Durcott Road, Evesham, Worcs. WR11 6EQ. *(Evesham 41508)*

WORKSOP: D. L. Rush, G4CRE, 87 Rydal Drive, Worksop.

WORTHING: E. Sandaver, G4KIT, 33 North Farm Road, Lancing, Sussex BN15 9BT. *(0903 766318)*

YEOVIL: E. H. Godfrey, G3GC, Dorset Reach, 60 Chilton Grove, Yeovil, Somerset BA21 4AW. *(0935 75533)*

YORK: K. R. Cass, G3WVO, 4 Heworth Village, York.

308: D. Davis, G6YQD, 13 Maple Road, Surbiton, Surrey.

and on 26th it's a pre-contest briefing. The club? **Havering.** The venue? Fairkytes Arts Centre, Billet Lane, Hornchurch.

If you want to find the **Hereford** members you head for County Control, Civil Defence Hq., Gaol Street, Hereford, on September 7 for an informal, or September 21 when Des Biggs of DTI will give a talk on TVI.

Hornsea are based at The Mill, Mill House, Atwick Road, Hornsea, every Wednesday evening. Hornsea is a few miles south along the coast from Bridlington, and it seems to draw its membership from Beverley, Driffield, Bridlington and Hull, as well as Hornsea itself.

Up north again, this time all the way to **Inverness,** where the locals foregather in the club Hq. in Planefield Road every Thursday evening. More details of the doings from the Hon. Sec. — *see* Panel.

At **Ipswich** the members have their base at the "Rose & Crown", which lies at the junction of Norwich Road (A45) and Bramford Road, on the second and last Wednesday of each month — September 12 and 26th.

On the **Isle of Man** the local club is active each week; details from the Hon. Sec. — *see* Panel. We hear that their expedition to the Calf of Man was most successful, with HF and VHF operation; the QSL cards are being completed and will be sent out as soon as possible.

On the second and fourth Wednesday of each month the **Lincoln** group has its meetings at the City Engineers' Club, Central Depot, Waterside South, Lincoln. We understand that on the intervening Wednesdays they have RAE and CW classes for those interested. September 12 is a talk on VHF aerials and "Moxon Slopes", by G3FDW; September 23 is the Hamfest at the Lincolnshire Showground, and on 26th they relax with a night-on-the-air.

The **Maltby** newsletter indicates the venue as the Old School Buildings, Church Lane, Maltby on Fridays at 7 p.m. September 7 is a D/F Hunt, and on 14th G3ZHI gives his Video Night. September 21 is a session of "Call my Bluff" with the Worksop club; the month is rounded out by a talk on domestic microwaves by G4SRX.

The **Medway** meetings seem to be on alternate Friday evenings; for the latest details and venue, we suggest a contact with the Hon. Sec. — and you could ask him to bring *us* up to date on this too!

The **Midland** meeting on September 19 is the Homebrew Contest, at 294A Broad Street; for more details of what goes on at this venue opposite the Birmingham Rep. Theatre, contact the Hon. Sec. or the Post Boy, G8GAZ.

Over to **Nene Valley.** The club has a natter night on September 5 and 19; September 12 is down for G3DOT to talk about RSGB

topics, and on 26th there is a lecture by the County Emergency Planning Officer. October 3 is an interesting one, too — the Town and Country Planning Act, 1971, is of interest to anyone who wants to hang up an aerial! All are at the "Dolben Arms", Finedon, near Wellingborough.

A change for **Newark** on September 6; on this date instead of going to the Palace Theatre in Appletongate, they will head for Elston Village Hall near Newark for a Social Evening at which it is hoped to meet new members and old ones, too, who have lost touch. Besides the normal meetings on the first Thursday, there are also informals; all the details from the Hon. Sec. — *see* Panel for his details.

If you are, or know anyone who is blind or disabled, then you should be in touch with **R.A.I.B.C.**; and if *you* are active then you could enrol as a supporter or representative. Details from the Hon. Sec. — *see* Panel.

Over to **Reigate** where the lads get together on the third Tuesday of each month in the upstairs meeting room of the Constitutional and Conservative Centre, Warwick Road, Redhill, Surrey.

Area 'E' Repeater Management Group has a meeting booked for October 6 at the Crest Hotel, Ferriby High Road, North Ferriby, Hull, Humberside; all the repeater groups and users in the area are invited, so please pass a note of your intention to the Hon. Sec. — *see* Panel.

Over now to **South Bristol** where on September 5 they have the AGM; the remaining weeks of September are all activity nights — VHF, ATV, and SWL, respectively. The venue, as ever, is the Whitchurch Folk House, East Dundry Road, Whitchurch, Bristol.

"Birdsnest Night" at **Southgate** on September 13 will give a chance for people to see other folks' prototypes — always assuming they are stout enough to reach the meeting at St. Thomas' Church Hall, Prince George Avenue, London N.14., near Oakwood tube station on the Piccadilly Line.

Deadlines for "Clubs" for the next three months—
October issue—August 31st
November issue—September 28th
December issue—October 26th
January issue—November 30th

Please be sure to note these dates!

At **South Manchester** the Hq. is at Sale Moor Community Centre, Norris Road, Sale; September 7 sees them getting ready for SSB Field Day, September 14 is 'open' at the time of writing, and September 21 is a junk sale. In addition to these they have informals at the same venue every Monday evening.

At **Stockton** the group has a place at Billingham Community Centre, every Wednesday evening; for more details contact the Hon. Sec. — *see* Panel. This club, we note, is very actively looking for more members.

Surrey now, and here the Hq. is at *TS Terra Nova,* 34 The Waldrons, South Croydon. The dates are September 3 for a surplus equipment sale, and 17th for the informal.

At **Sutton & Cheam** the form is to have the third Friday in the month at Downs Tennis Club, Cheam, and the natter evenings on the first Monday. The natter evening, therefore falls on September 3 in the bar at Downs, and the formal meeting is on September 21, details still to be finalised at the time of their letter.

On the second and fourth Tuesday in the month, **Thanet** get together at Grosvenor Club, Grosvenor Place, Margate. More details from the Hon. Sec. — *see* Panel.

The **Torbay** club meets on Friday evenings informally, and formally on the last Saturday of the month for club business and a talk or demonstration, at Bath Lane, rear of 94 Belgrave Road, Torquay; the September formal will have, it is hoped, G3OZ for a talk on TV.

At the "Schools of Chesham" Carnival, held in June on Chesham Moor, Chesham & District A.R.S. had a stand to give an insight into the hobby to the general public. A special event callsign was issued, GB2SCC, and many contacts were made on two-metres, HF and a converted CB rig. The photograph shows Ron, G3NCL, (a visitor from the Chiltern club) on the key, with Shirley, G4HES, keeping the log. As can be seen, the stand created a lot of interest! *photo: G4UXA*

On now to **Todmorden,** where on September 3, they will hear John Nelson, G4FRX, talking about RSGB Hq. This, we believe, is held at the Queen Hotel, Todmorden.

The regular meetings of the **Vale of White Horse** club are on the first and third Tuesday of each month, at the Landsdown Club, Milton Trading Estate, Didcot; in addition, over the weekend September 1/2, they have a club expedition to Devon and Cornwall proposed. More details from the Hon. Sec. — *see* Panel.

It's the second and fourth Tuesday in each month at the R.A.F.A. Hq., New Kent Road, St. Albans, for **Verulam;** Visitors are welcome at all meetings.

The members of **WACRAL** are all committed Christians of all denominations, and in many countries; the details are obtainable from the Hon. Sec. — *see* Panel.

Now to **Welland Valley,** where they get together every Monday evening at Welland Park College, Market Harborough, starting at 7.30 p.m. More details from the Hon. Sec. — *see* Panel.

At **West Kent** the club has had an AGM; however we don't have the latest details on meetings, for which we must refer you to the Hon. Sec. — *see* Panel.

That 'mystery' last time about **Wirral** club is at least partly solved; it was the original Wirral club, now based on the Guide Hut, Westbourne Road, West Kirby, on the first and third Wednesday of each month; September 5 is a debate "CW is a dying Art" and on 19th they have a 'problems night'. As for *our* problem, it seems the answer is that we 'fell off' the newsletter circulation for some reason — thanks to G3FOO for putting us right!

At **Worcester** G8MWR will be talking about "What's Cooking in Microwaves" at the Oddfellows Club on September 3; the informal at the "Old Pheasant" is on September 17 — *both* these venues are in New Street. That leaves September 24, on which evening they have the AGM at the "Old Pheasant".

It's a while since we heard from **Worksop;** they now foregather at the "Ship Inn", Market Place, every Thursday evening, where at alternate meetings they have either a talk or demonstration. September 3 is a lecture by G3RZP, Peter Chadwick, and at the same meeting Mrs. Chadwick will present a Cup in memory of her

husband, G8ON, a friend to members for many years. September 26 is down for a visit to BBC Radio Sheffield, with a bus booked, and maybe a stop on the way back.

Expansion has been the order of the day at **Worthing** where as a result the Hq. has been moved to Lancing Parish Hall, South Street, Lancing, which lies between the A27 and the sea-front road, handy for Lancing station. All the details of their Wednesday meetings from the Hon. Sec. — *see* Panel.

The meetings of the **Yeovil** club are at the Recreation Centre, Chilton Grove, Yeovil, every Thursday evening at 7.30 p.m. September 6 is down for G3GC to ask "Are RST Reports Meaningful?", and on 13th G3MYM will discuss winding your own coils. September 27 is a natter evening. Looking forward a little, the Yeovil QRP convention is on October 14 — details from the Hon. Sec. at the address in the Panel.

The **York** lads are relaxing after three hectic but rewarding days with their special-event station GB2GYS; the York gang believe in talking to those who come in to their display, rather than just showing them members' backs and an interrupted view of a rig. They have two more demonstration stations set up before this reaches you, and then another in December — but they would be just as happy to have you turn up at their meetings on Friday evenings at the United Services Club, 61 Micklegate, York.

Finally, **308** who are based on St. Marks Church Hall, Churchill Road, Surbiton, but who don't say what they are doing with themselves in their newsletter. Hence, for meeting details and all the rest, we must refer you to the Hon. Sec. — *see* Panel for the needful.

Final-Final

That's it for another month. Arrival deadlines for your letters are given in the 'box' as usual, and should be addressed to your Club Secretary, SHORT WAVE MAGAZINE, 34 High Street, Welwyn, Herts. AL6 9EQ.

Blistering CQ's!

During a 30-hour period of the weekend September 22/23rd, David Rickwood, G6UDM, will be climbing with two companions Britain's "Three Peaks", namely Scafell, Snowdon and Ben Nevis — *and* taking a 2m. SSB transceiver, beam and (hopefully) linear amplifier with him. Using the calls G6UDM/P, GW6UDM/P and GM6UDM/P, David reckons on about 30 minutes of operation from each summit, preferred frequencies being 144.280 and 144.285 MHz. Clearly exact times of operation cannot be given in advance, but he hopes to be active from about 0845 BST on the 22nd from the summit of Snowdon, 1600 BST on the 22nd from the summit of Scafell, and 1100 BST on the 23rd from the summit of Ben Nevis. All contacts will be confirmed by a special QSL card, with an 'extra-special' card going to anyone who is able to contact him on all "Three Peaks".

We wish him the best of British/Welsh/Scottish luck!

More Courses for the RAE, 1984-85

Barking: Westbury Recreational Centre, Westbury School, Ripple Road, Barking, Essex, registration Sept. 13th at 7.30 p.m. Further details from A. L. Sammons, G8IZN, on 01-594 2471.

Beckenham: Beginners and Intermediate **Morse class,** Beckenham Adult Education Centre, 28 Beckenham Road, Beckenham, Kent, Tuesdays 7.30-9.30 p.m., 28-week course commences Sept. 18th. Tutors are Steve Palmer and Peter Grant; ring 01-650 1383 or 01-464 5745 for full details.

Glasgow: Glasgow College of Nautical Studies, 21 Thistle Street, Glasgow G5 9XB, Tuesday and Thursday evenings, enrolment Sept. 4th, course fee £30.

Lymm: Lymm Adult Centre, Grammar School Road, Lymm, Tuesdays 7-9 p.m., enrol at Centre Sept. 17/18th (evenings); tutor John McKae, G4ILA.

Newcastle-upon-Tyne: Gosforth Adult Association, Gosforth High School, Gosforth, Newcastle-upon-Tyne, Tuesdays 7-9 p.m., commencing September. Enquiries to The Principal at the above address, or contact the course tutor D. Loveday, G3FPE, on Newcastle (0632) 668439.

Stockport: Reddish Vale School, Reddish Vale Road, Reddish, Stockport SK5 7HD, (061-477 3544), Mondays 7-9 p.m. starting Sept. 24th, also Morse classes Thursdays 7-9 p.m. starting Sept. 27th, enrolment for both classes Sept. 17/18/20th 7-9 p.m. Further details from D. Wood, G4UJD, at the School (ext. 10) 9 a.m. to 4 p.m.

Stranraer: Community Education Centre, Lewis Street, Stranraer, Wigtown, organised by Wigtownshire A.R.C., Thursdays at 7.30 p.m., commencing Sept. 6th. Further information from Neil Macdonald, GM4LQS, on Stranraer 2570.

"G's" Consider Yourselves Lucky!

Here are the requirements for applying for an OA licence:

1. Letter of application on special 'sealed' paper — type No. 6, purchased from bank.
2. Notarized birth certificate.
3. 'Personal Data' sheet (in duplicate) asking:
   Name, address, education (all), profession, last two jobs and salaries, work address, parents' name and address, address of clubs, institutions and political parties, left and right index finger prints.
   Details of station: Make, model, serial no. of transmitter, power, type of emission, band of operation, year of construction; type of aerial, make, gain, type of feeder cable and filters; description of measuring instruments, power supply, linear, all with brand, model no., serial no. and year of make; details of station address including geographical coordinates (if fixed) in degrees, minutes, seconds (if mobile — number of owner's car).
4. 5 photos front-view, 3 side-view.
5. Certificate of police record (on special form).
6. Certificate of residence (special form — police visit necessary to check address).
7. Exam pass certificate.
8. £11.
9. Photocopy of instruction manual for rig showing circuit diagram and technical specifications.

Yaesu and OSTAR

David Jolly, who is marine consultant to *Arrow Electronics Ltd.*, fitted a number of yachts in this year's "Observer" Single-handed Transatlantic Race with the Yaesu FT-757 transceiver. This installation in the yacht *Jemima Nicolas* was vital in helping her skipper, Alan Thomas, rescue John Mansell, skipper of the trimaran *Double Brown* which broke up in mid-Atlantic.

Eastern Communications move

Eastern Communications recently moved to new, larger premises in the centre of Norwich, at 31 Cattle Market Street. The move enables a much larger range of Amateur Radio products to be stocked, as well as Marine and PMR systems. Included in this new city-centre premises is a fully stocked branch of *Amateur Electronics UK* with a servicing centre covering East Anglia.

NEW QTH's

This space is for the publication of the addresses of holders of new callsigns, or change of address, in EI, G, GJ, GU, GD, GI, GM and GW of stations not already listed. All addresses published here will appear in the U.K. section of the American "CALL BOOK" in preparation. Please write clearly on a separate slip and address to QTH Section. Be sure to give correct County designation and post-code. In the case of direct subscribers needing Change of Address, please state for card index adjustment. Address items for this space to: "QTH Section," *SHORT WAVE MAGAZINE, 34 HIGH STREET, WELWYN, HERTS. AL6 9EQ.*

G1BVU, G. J. Pope (ex-G3ASV), 6 Brookland Rise, London. NW11 6DL.

G2MT, Marconi Radio Society, c/o The Grove, Warren Lane, Stanmore, Middlesex. HA7 4LY.

G4ETW, Willenhall and District A.R.S., c/o J. R. Perkins, 115 Elston Hall Lane, Wolverhampton, West Midlands. WV10 9HD.

G4JSP, C. G. Perkins, 33 Sabrina Road, Wightwick, Wolverhampton, West Midlands. WV6 8BP.

GW4KAW, A. B. Radford, 22 St. Elmo Avenue, St. Thomas, Swansea, West Glamorgan. SA1 8DP.

G4LWI, J. R. Perkins, 115 Elston Hall Lane, Wolverhampton, West Midlands. WV10 9HD.

G4MAR, C. Rowe, 121 Victoria Street, Willenhall, Wolverhampton, West Midlands.

G4MGC, D. S. Litton, 9 Fairway, Warner Road, Ware, Herts. SG12 9JP.

G4NRA, J. F. Tisdale, 12 Digby Road, Kingswinford, West Midlands. DY6 7RP.

GI4NRE, W. A. Ward, 6 Brackvede Heights, Enniskillen, Co. Fermanagh.

G4NXZ, R. F. Barrett, 1 Church Meadow, St. Neots, Huntingdon, Cambs. PE19 1PR *(Tel: 0480-217622)*.

G4PBJ, B. M. Oakley, 6 Windmill Way, Haxby, York. YO3 8NL.

G4PTY, G. A. Harries, 37 Sylvanus, Roman Wood, Bracknell, Berks. RG12 4XX.

G4RPJ, Irene Jane Flaherty, 10 Highfield Park, Heaton Mersey, Stockport, Cheshire. SK4 3HD.

G4UHV, F. Evans, 52 Southdown, Market Estate, North Road, London. N7 9DU.

G4UKC, D. Evans (ex-G8YED), 36 Rivermead Park, Colehall Lane, Castle Bromwich, Birmingham. B34 6HH.

G4UQP, I. G. Hunter, 46 Station Road, Scalby, Scarborough, North Yorkshire. YO13 0QA.

G4UUM, P. P. Skivington, 24 Sterling Avenue, Waltham Cross, Herts. EN8 8DE.

G4UWW, A. G. Prior (ex-G8XHL), The Willows, Moor Road, Langham, Colchester, Essex. CO4 5NP.

G4UXL, K. M. Jones (ex-G6TTP), 189 Sutton Way, Ellesmere Port, South Wirral. L65 7BD.

GW4UYY, C. Fox, 12 Cherry Close, Dyserth Bay Estate, Prestatyn, Clwyd. LL19 7DQ.

G4UZN, A. M. Quest, 445 Street Lane, Leeds. LS17 6HQ.

G4WJP, C. A. Wadsworth, "Brooklea", Stibb, Bude, Cornwall. EX23 9HP.

G4XII, E. Appleby (ex-G8YWF), 60 Willow Garth, Newby, Scarborough, North Yorkshire. YO12 5HY.

G4YJM, M. S. Leonard (ex-G6PSR), 7 Moorside Parade, Drighlington, Bradford, West Yorkshire. BD11 1HR.

G6LIM, J. G. Flaherty, 10 Highfield Park, Heaton Mersey, Stockport, Cheshire. SK4 3HD.

G6RGR, N. H. M. Richardson, 2 Edna Road, Ringlestone, Maidstone, Kent. ME14 2QJ.

G6STA, Marconi Radio Society, c/o "The Grove", Warren Lane, Stanmore, Middlesex. HA7 4LY.

G6UNF, A. T. Martin, 40 Thorn Road, Canford Heath, Poole, Dorset. BH17 9AX.

GJ6WMQ, G. Raynes, 23 Clos Paumelle, 5 Oak, St. Saviour, Jersey.

G6WZR, M. H. Ruddock, 36 Brockhurst Road, Gosport, Hants. PO12 3DE.

G6XCD, E. V. Ashworth, 11 Como Avenue, Burnley, Lancs. *(Tel: 0282-57995)*.

G6YIQ, J. Dixon, 112 Haymeads, Welwyn Garden City, Herts.

G6ZHV, M. Lovatt, 68 Windsor Gardens, Castlecroft, Wolverhampton. WV3 8LY *(Tel: Wolverhampton 763387)*.

GW6ZHY, A. E. Mayers, 2 Wyndham Gardens, Wrexham, Clwyd LL13 9LY.

G6ZRU, F. Southwell, 40 Downsview, Small Dale, Henfield, West Sussex. BN5 9YB.

Change of Address

G2AHB, W. H. C. Jennings, M.B.E., Gibson's Lodge, Gibson's Hill, London. S.W.16.

G3AHB, L. G. Coote, 12 Fonthill Way, Bitton, Bristol. BS15 6JY.

G3CHN, R. V. Thorn, "Fuchsia Cottage", Bedbury Lane, Freshwater, Isle of Wight. PO40 9PB *(Tel: 0983-753649)*.

G3FMN, T. W. W. Dearlove, 4 The Murren, Winterbrook, Wallingford, Oxon. OX10 9DZ *(Tel: Wallingford 39374)*.

G3GDJ, R. B. Wilson, 15 Moncrief Crescent, Chaddesden, Derby. DE2 4NR.

G3IRM, P. Lumb, 2 Briarwood Avenue, Bury St. Edmunds, Suffolk. IP33 3QF.

G3JDI, K. R. Strellis, 73 High Road, South Benfleet, Essex. SS7 5LH.

G3KEQ, J. P. Mitchell, 20 Borrowdale Drive, Sanderstead, Surrey. CR2 9JS.

G3NII, R. A. Porter, 4-A Clifton Road, Shefford, Beds. SG17 5AA.

G3OAA, P. S. T. Welch, 26 Gorsty Hill Road, Rowley Regis, Warley, West Midlands. B65 0HD.

G3OXC, S. Crabtree (ex-GM3OXC), 60 Belmangate, Guisborough, Cleveland. TS14 7AB. *(Tel: 0287-38888)*

G3RDJ, R. W. Attenborough, Coffley House, Church Lane, Epperstone, Nottingham. NG14 6AE *(Tel: 0602-663385)*.

G3RJV, Rev. George Dobbs, St. Aldan's Vicarage, 498 Manchester Road, Rochdale, Lancs. OL11 3HE *(Tel: 0706-31812)*.

G3SFO, R. H. Jones, 140 Station Road, Bawtry, Doncaster, South Yorkshire. DN10 6QD *(Tel: 0302-711504)*.

GW3SSY, D. F. Jones, 80 Croesonen Parc, Abergavenny, Gwent. NP7 6PE.

G3VSU, A. R. F. Moore, 42 Nursery Lane, Whitfield, Dover, Kent. CT16 3HG *(Tel: 0304-822738)*.

G4AR, A. E. Dowdeswell, 57 The Kingsway, Ewell Village, Epsom, Surrey. KT17 1NA.

G4DEV, S. L. Newport, 18 Chacewater Crescent, Barbourne, Worcester. WR3 7AN.

G4HDD, S. S. Rose, 22 Spencer Drive, London. N2 0QX *(Tel: 01-209-1653)*.

G4HJU, L. Graham, 16 Carr Lane, Hoylake, Wirral, Merseyside. L47 4AZ.

G4MOM, A. Gladding, 108 Thundersley Park Road, South Benfleet, Essex. SS7 1ES.

G4NBS, A. J. Collett, 10 Quince Road, The Limes, Hardwick, Cambridgeshire. CB3 7XJ.

G4NWH, Rev. R. P. Butcher, Great Billing Rectory, Northampton. NN3 4ED *(Tel: 0604-402204)*.

GM4REN, B. Strathdee, 85 Weaversknowe Crescent, Currie..

GM4TCW, A. I. Edmondson, 36 Winifred Crescent, Kirkcaldy, Fife. KY2 5SX.

G4TMO, H. A. Kemp (ex-DA1KP), 4 Meadow Road, Watchfield, Swindon, Wilts. SN6 8SF.

G4UIZ, T. E. Radisic (ex-EI9EN), 54 St. Albans Road, London. NW5 1RH.

G4ULT, L. R. Walker, "Oaklea", 13 Manor Road, Lake, Sandown, Isle of Wight. PO36 9JA.

GM6KNP, D. McKenzie, 11 Fulmar Crescent, Ardersier, Inverness. IV1 2SY.

G8KAX, J. Lemay, 280 Broomfield Road, Chelmsford, Essex. CM1 4DY *(Tel: 0245-355331)*.

G8NLL, T. J. Perrin, 137 Coltman Street, Hull, North Humberside. HU3 2SF.

GU8XQS, M. Chapple, "Crevichon", Camp Code Close, St. Sampsons, Guernsey.

Correction

G4PPK, C. M. Everley, 5 Firs Close, Hazlemere, Bucks.

October issue due to appear on Friday, September 28th

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Maidenhead Squares program, BBC or Electron, £5. — G3ZPF, 502 Lapwood Avenue, Kingswinford, West Midlands DY6 8SG.

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READERS

Selling: FRG-7700 communications receiver with headphones, DRAE Morse tutor with earphones and key, Morse record course, and many books on radio, 2 cartons of radio bits/pieces, all for £200. — Ring Thorne, Peterborough 44437.

Exchange: 1978 'S' reg. Maxi, M.O.T. till Feb '85, *for* HF station (preferably Trio). — Box No. 5806, Short Wave Magazine, 34 High Street, Welwyn, Herts. AL6 9EQ.

For Sale: Sommerkamp FL-200B transmitter and FR-100B receiver with manuals, mint condition, unused since 1973, with mic. and key, £200 or near offer. — Ring Portrey, G4BNG, Rotherham (0709) 863217.

Selling receivers: Collins, 30 wavebands, 0.5-30 MHz; TCS, 1.5-12 MHz; HRO, 1-30 MHz; AR88D, 0.5-32 MHz; BC-348; VHF Rx, 36 MHz to 12 GHz. — Ring Wright, Wigan 55948.

Sale: Icom IC-R70 with FM board, £380. SR-9 2-metre FM receiver, £20. Wood & Douglas 2-metre synthesizer with thumbwheels, £40. — Ring Williams, 0376-23604.

For Sale: Icom IC-202S, £100. TR-2300, £100. Two-metre, 6-ele quad, £20. Buyers collect. — Ring Kearns, G8TTI, Chippenham (0249) 658109.

Selling: Frontier Electronics two-metre linear amplifier, single 4X150A, gives 150 watts SSB output, self-contained with own mains PSU, £250. — Ring Buddery, G3SEP, 0252-875488.

Sale: Panasonic DR-31 (3100LBE) receiver complete with Yaesu antenna tuner, in perfect condition, giving excellent reception on 32 bands (cost £270!), only £140. Buyer collects. — Ring Lawrence, 01-440 0476.

Wanted: Wireless Set No. 11 and WS-48 in restorable condition, £50 each paid. Also handbooks for WS-21 and B2, £10 each paid. — Warner, 45 Eastry Close, Ashford, Kent. (Tel: 0233-36185).

Wanted: Yaesu FT-102 or similar, TS-830S etc. — Ring Worvill, G4CRH, Thanet (0843) 69068.

For Sale: Eddystone 880/2 receiver, £320. Drake SPR-4 receiver, £150. — Ring 01-708 3874, evenings.

Wanted: Trio R-2000 in mint condition. — Ring Nichols, 0326-290485.

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