G3ROO completes the "Dover" Frequency Meter
How to get planning consent for a tower
The TS930S latest transceiver from Trio Price: £1195.00 inc. VAT.

The TS930S is the latest transceiver from Trio. It is designed for work on the HF band and crosses the entire 25-5600KHz range. It has been designed to exceed the demands of the modern amateur, providing a range of features that are highly beneficial. The TS930S can be used both at home and in the car, boat or aircraft, and is fully portable, making it ideal for use in a variety of environments.

Key features of the TS930S include:
- **50 MHz Coverage**: The TS930S covers the entire 25-5600KHz range, making it suitable for a wide range of applications.
- **High Performance**: With the ability to work at high power, the TS930S is capable of producing excellent transmission quality.
- **High Sensitivity**: The TS930S is extremely sensitive, allowing it to receive even the faintest signals.
- **Large Display**: The built-in display provides clear and easy-to-read information.
- **Compact Size**: Despite its performance capabilities, the TS930S is relatively compact and easy to use.

The TS930S is available from Stephens-James Ltd., 47 Warrington Road, Leigh, Lancs. WN7 3EA. For more information, contact Telephone (0942) 676790. Turn at the Greyhound Motel on the A580 (East Lancs. Road).
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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 G3GFA. 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 182 High Street, Chesterton, Cambridge (telephone 0223 311230). From the A45 just to the north of Cambridge turn off to the town on the A1038, 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
LS 202E.

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 5kHz 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 1750Hz tone burst.

A comprehensive range of accessories is available . . .

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<tr>
<th>Accessory</th>
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<tr>
<td>NP6 . . . Rechargeable battery pack (7.2 volts)</td>
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<tr>
<td>NP9 . . . Rechargeable battery pack (10.8 volts)</td>
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<tr>
<td>CA910E . . . AC charger (for NP6)</td>
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<td>CA110E . . . AC charger (for NP9)</td>
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<tr>
<td>CS912 . . . Mobile charger (for NP6)</td>
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<td>CS112 . . . Mobile charger (for NP9)</td>
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<td>SH1 . . . Speaker/microphone</td>
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<tr>
<td>SFT107 . . . Soft case</td>
<td>£4.80</td>
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<tr>
<td>LA207 . . . Mobile console with 25 watt linear</td>
<td>£118.00</td>
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<tr>
<td>AN2 . . . 1/4 wave BNC rod aerial</td>
<td>£6.50</td>
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</table>
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.

TR7930 TWO METRE FM MOBILE TRANSCEIVER
Those who have used or owned a Trio TR7833 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.

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 1150kHz to 30MHz, the TS930S has every conceivable operating feature for today’s crowded frequencies.

TS930S £1195.00 inc vat.

TS530SP HF AMATEUR BAND TRANSCEIVER
A logic progression from the reliable TS530 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
IC-R70, £565.

The R70 covers all modes (when the FM option is included), and uses 2CPU-driven VFOs for split frequency working, and has 3 IF frequencies. 70MHz, 9MHz and 455KHz, and a 100dB dynamic range. It has a built-in mains supply. Other features include input switchability through a pre-amplifier, direct or via an attenuator, selectable tuning steps of 1KHz, 100Hz or 10Hz, adjustable IF bandwidth in 3 steps (455KHz). Noise limiter, switchable AGC, tunable notch filter, squelch on all modes, RIT, tone control. Tuning LED for FM (discriminator centre indicator). Recorder output, dimmer control.

The R-70 also has separate antenna sockets for LW-MW with automatic switching, and a large, front-mounted loudspeaker with 5.8W output. The frequency stability for the 1st hour is ± 50Hz, sensitivity - SSB/CW/RTTY better than 0.32 uv for 12dB (S + N) ÷ N, Am - 0.5 uv. FM better than 0.32 for 12dB Sinad. DC is optional.

Ever since its introduction the IC-R70 has proved to be a popular and reliable HF receiver making your listening hours a pleasure. Please contact us for further details on this excellent set.

IC-R71E, £649.

For those who like the easy life, the R71E has the option of an infra-red remote control unit, making it a very sophisticated rig indeed, here are some details.

100 KHz - 30 MHz all mode (with FM option). Quadruple conversion superhet. IF frequencies 70MHz, 9MHz and 455KHz with continuous bandpass tuning and notch filter. Virtually immune from adjacent channel interference with 100db dynamic range. Adjustable AGC, noise blanker and switchable pre-amplifier. Direct keyboard into twin VFO's with 32 programmable memories. 5 year lithium memory backup cell. Memory and band scan with auto-stop. Tuning rates 10Hz, 50Hz and 1 KHz with 6 digit readout. AC mains operation. Auto squelch tape record function.

OPTIONS:- Synthesized voice readout, infra-red remote controller, 12 V DC kit, mobile mounting bracket, two CW filters 500 and 250 Hz, FM unit, computer interface, headphones.

You can get what you want just by picking up the telephone. Our mail-order dept. offers you: free, same-day despatch whenever possible, instant credit, interest-free H.P., telephone Barclaycard and Access facility and a 24 hour answering service.

Please note that we now have a new retail branch at 95, Mortimer Street, Herne Bay, Kent. Give it a visit, BCNU.
ICOM's IC-745 is the all-in-one transceiver featuring an HF all band SSB, CW, RTTY, AM (receive only) ham transceiver, plus a general coverage receiver. Options for FM transceive and an internal power supply make the IC-745 the complete transceiver in an all-in-one package.

The receiver section features a 100KHz to 30MHz general coverage receiver, this allows access to all HF bands plus all the frequencies in between. The IC-745 has an adjustable AGC circuit and DFM (Direct Feed Mixer) giving a wide dynamic range of 103dB with an intercept point at +18dBm. Exceptionally clean reception is achieved with a low noise PLL circuit and a 70MHz first IF.

The IC-745's features include IF shift, 16 programmable memories with lithium battery back-up, passband tuning, a noise blanker both wide and narrow, threshold level control, notch filter, receive audio tone control and an all mode squelch. Also available is a front end switchable receiver preamp providing 12dB gain. RIT has a ±1KHz range.

We could go on all day about the 745, get in touch with us and we will send you the full story.

IC-271H, £819.

The IC-271H is the most advanced 2 meter transceiver available today, it covers the spectrum from 144-146 MHz with FM, SSB, or CW using the most advanced 10Hz PLL system. The IC-271H is suitable for simplex, repeater operation, moonbounce or satellite work, and has features found on no other transceiver. Including 100 watt output.

Some standard features include 32 tunable memories, a high visibility fluorescent display, RIT readout, scanning, 12V DC operation with optional AC power supply.

The 271H has a speech synthesizer that announces the displayed frequency, ideal for blind operators, this is an optional extra along with the SM6 desk microphone and 22 channel memory extension with scan facilities.

As you can see from this brief description the IC-271H, (and its 430-440MHz brother the IC-471H) are very versatile sets indeed. More detailed literature can be easily obtained from Thanet Electronics Limited.

Agent: Gordon G3LEQ, or telephone Knutsford (0565) 4040.
Please telephone first, anytime between 0900 – 2200 hrs.
Can I talk to you from the satellite, Bernie?

At A.R.E. second-hand doesn't mean second-best! We only accept customers' equipment for resale if we've satisfied it's up to our own high standards. If we've reconditioned it you also get the benefit of our own 12 months' guarantee. As a result, you can always choose with confidence from our huge and rapidly changing second-hand stock – it's the biggest in the country, and the best! Prices? Nobody, but nobody, beats A.R.E. ! Phone us with your requirements now, and we'll do all we can to help.

10cm HANDHELD TRANSCEIVERS £

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24cm TRANSCEIVERS

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VHF MULTMODE TRANSCEIVERS

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2CM HANDHELD FM TRANSCEIVERS

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SMALL ACCESSORIES

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ACCESSORIES FOR AVO f3 MEGGER INSTRUMENTS

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R. T. & I. ELECTRONICS LTD.
Ashville Old Hall, Ashville Road, London E11 4DX. Tel. 01-539 4986

We are main distributors for AVO, MEGGER, TAYLOR and SUllIVAN INSTRUMENTS.

FULLY OVERHAULED EQUIPMENT

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NEW EQUIPMENT

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AVO & MEGGER EQUIPMENT

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ACCESSORIES FOR AVO 6 MEGGER INSTRUMENTS

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All orders over £100 are sent carriage-free. For 24-hour Securicor delivery, add £6.00. For orders below £100 add £2, and £1 for books. Bream Antennas are sent by Securicor only.

To use ARE's Rapid Despatch Mail Order Service, just quote the Stock Number together with your Access or Visa Card number. Your goods will be on their way within 24 hours, subject to availability.

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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!
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, W6RSP, 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 enthusiasts, 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 reach the level we are seeing now! That Mt. Athos DX-pedition by poor 310

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 multiplier 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 multipliers; the DXCC list, CQ Zone Map, WAE country list, and WAC boundaries are the standards. Log entries: 80 QSOs per page, 8 1/4 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, SM6EWH, 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 YevolClub have their QRP Convention, on October 14, at Preston School, (Preston Centre), Monks Dale, Yevol, 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, G3GCJ, on Yevol (0935) 75533. We hope this one is well supported, and 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 LA9PDA 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, JW5JY till 1985, and J6WBA on Bear Island till November too.

As for the repeat of the IS1CK operation that was being quoted, 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 midsummer 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 G6AHU 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 (Yevol) 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’ have 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 F61G0 in Le Mans on 28.005 MHz, through the Italian CB QRM, with LU and PY beacons heard and P5PHI worked. July 28 gave G3JD 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 G4H2ZW (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, PS7TM, UH6EWW, 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 GKOJFK; 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 shack 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, ZB8FK, C30BAY, UD6DC, WD4LGE, ZS6ARK, JG1DFL, JI3QPN, ZS6BCI and 9V1TL.

G3JSF (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 being given some pleasant evening CW contacts, including one to VE2 who was just readable but came back with a 599 report!

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 0730 to 2200. The odd African was noted around 1000, the band then fading out until around 1500 z before again dropping out progressively northwards around 1800 z. South America was noted 2000-2200z. It added up to SSB contacts with A24SC, C30LBO, DA2AAA/OH0, EL8E, FK7CQ, FR0FLO, G8KW/SN8, IT1HLO/1F9, HC1BP, HZ2Q, H13RST/KP5, H18GB, HK0HEU, J88AB, JA2NVN, JA4EKO, JE4OFE, JH9FKI, JY5C1, KC7UU/5N6, LA6BBA/OH0, ON3NT/HB0, ON7VD/5N4, TR8CR, TR8CS, TR8IG, U9BWF, VK4BJD/6, VP2ML, VP8AXJ (Falkland Is.), VS6CT, YC4FS, YC0BYZ, YU3GL/SB4, 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 RSW, a ‘special’ from Lvov operating in the Baltic, and USED — 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 VP8AJL we have a copy of the VP8 call sign list; it shows a total of 412 callsigns, plus another list of 'special' two-metres 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 A4JXV, BV0AB, CE8ABF (Tierra del Fuego), CT2CQ, CT2EJ, FOCH/TK (Corisca), HH7PV, H1RST/KP5, HK5BCZ, HP1XJN, ID2MK/1L7, ID7AUC, J37AH, K5KG/OH0, Kt6HI, Kt6JEB/KH7, NL7G, ON5NT/ON0, VR9FQ, T32AB, TR8CR, TR8CS, UA0FF, V2AZM, VESXV, VETATP, VE8RCS, VK2EBX, VK2HD, VK6GX/AM, VK7GE, VP9CP, VQ9BC, WB8QQP/HP2, WLY7E, 3V8AI, 3X4EX, 4U1ITU, SB4JE, 8P60V, 9Y4NP.

G4VKJ 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 KH6JL, FO0FI (not in the Pacific but Faroe). R16R (Oblast 42), YV5BNR, and X03CRG. 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 DL6MX, OE3HHG, 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/ISO, SV1KU, 4U1ITU, plus DX stations in DF3G/XPJ (Bonaire), VE7VC, VY7BKO, VK2PA, VK3MR, VP2MX, W5TCH, W7BNK/0, K7SP, and AA0N. On 18 MHz, there were various EUs, plus IS00OHH, 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, OE2CHS, 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 G3FEPQ, 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 SVOAA/9 on Crete - about a dozen contacts all told, all Europeans, and no DX at all even heard.

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"CDXN" deadlines for the next three months:

October issue—September 1st
November issue—October 6th
December issue—November 8th
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Please be sure to note these dates

Finally G2HKU (Minister); Ted had his usual sessions with PA0PN on SSB, plus CW with KT3M, SP5INQ, OL1BJK, DL9Iq, K5KG/OH0, OZ1W, LA4Y, DJ4IJ, 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, DJ6OS, and GM3BEX/A.

G3EKX has been on Eighty, particularly in the RAFAIRS 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 over 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.
Volume 42
THE SHORT WAVE MAGAZINE

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, CP5RSJ, C53AL, FM7WS, HH2MC, H18JO, HC6CRC, HK0HEU, J37AH, KP4FJ, KH6CC, assorted South Americans, T77V, TF3TF, DX’y Russian stations, VE8, VP3MV, VP9NS, VP2MF, V3FB, VU2DVP, all W call areas, ZLs, ZSs, ZB2HX, ZD7CW, 3X4EX, 3V8PS, 5T5CI, 5Z4ED, 7P8CM, and 8P6OV. Listening times on Forty were 3X4EX, 3V8PS, 5T5CI, 5Z4ED, 7P8CM, areas,

TR8IG, Asian Russians assorted, VEs,

A71AD, AP2ZR, A92P, CN8, CP6, 2100-0100 and 0630 to 0730, yielding and 8P6OV. Listening times on Forty were 3X4EX, 3V8PS, 5T5CI, 5Z4ED, 7P8CM, areas,

VP2MF, V3FB, VU2DVP, all W call stations, VEs, VO1CV, VP8ML, VK9NS, Americans, T77V, TF3TF, DX’y Russian KP4FI, KH6CC, assorted South

HI8JO, HC6CRC, HKOHEU, J37AH, CP5RJS, C53AL, FM7WS, HH2MC,

Eighty has shown with A71AD, A22ME, listening on Eighty and Forty as part of his GW4PAF,

G4SJA, G4WMI, G4VJR, G4VQJ, G4JSA, 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, CM3SHG, K2EK, W2QN, WA2ALP, KY2P, VK3MR, WQ2N, HK1APN, PT2ZY, 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 that 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 2G2CN/A who was getting in well with his HW-8 from Brill, Bucks; he worked F6HEW before G2NJ did. From Brill, G2CN was going to Norfolk for a few days, and then off to Hampshire. G4KJK 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 Dunegus 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 IN914, 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
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.

**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 1¼ 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-obessional 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 permission.

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 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 is 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 monster 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 doubtfulls 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 omissions 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 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.

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.

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.

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

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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.

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The DoE will send you a copy of the local authority's case for your consideration.
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 impedance. 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 Marcon, 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 1/4 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 longwire 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 still give plenty of coverage. If the longwire is many 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 A.A Book and the A.A Road Atlas should be used with some caution — it only needs a tiny displacement of the blue line on the A.A 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 1921, 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 chopped 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 a 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 G1EB. 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 his old call is still in use, its present owner being Dick Leeves, down in Devon.

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 — blown 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,
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’s not 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 (Harlepool) 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 not 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 hasn’t come off, due to mist and cloud — but there’s always another time!

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ANNUAL HPX LADDER

Starting date, January 1, 1984

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<th>PREFIXES</th>
<th>PHONE ONLY</th>
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<td>P. A. Cardwell (Sheffield) 333</td>
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<td>T. Morris (Headley) 626</td>
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<td>Mrs. R. Smith (Nuneaton)</td>
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<td>E. B. Ward (Ruddington) 1848</td>
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<td>A. J. Hart (Aldershot) 514</td>
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<tr>
<td>G. W. Raven (London)</td>
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<td>A. Pilkington (Chesterfield) 534</td>
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<td>M. Rogers (Harwood)</td>
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<td>S. J. Bedford (Wakefield) 522</td>
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<td>M. G. Toms (Rayleigh)</td>
<td>1418</td>
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<tr>
<td>E. M. Gaul (Slough, E. Sussex)</td>
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</tr>
<tr>
<td>R. Fox (Northampton)</td>
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<tr>
<td>D. Shapiro (Pretoria)</td>
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<td>N. Askew (Cowley)</td>
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<td>R. Everitt (Blandsham)</td>
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<tr>
<td>I. Kerry (Bromley)</td>
<td>813</td>
<td>J. Routledge (Harlepool) 276</td>
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</table>

Minimum of 200 Prefixes to have been heard since January 1, 1984, in accordance with HPX Rules — see p. 319 this issue. 

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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 c-axial 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 VIUZL in the mornings!

Finally, a couple of just-a-list merchants to mention; G. W. Raven (London) is one of them and the other is B. F. Hughes (Harvington) who submitted his list “just to keep my head above water!”

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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!
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 can be obtained; but the 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 boom, this is not one of them and a few moments thought will show that this argument is based on a fallacy.

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

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**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 *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 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.

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This book can be confidently recommended to anyone requiring a

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**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 situations, one dreaded operating on 14 and 21 MHz during TV hours. However, it was not one-sided since line time bases

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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 pres 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

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

<table>
<thead>
<tr>
<th>Display anodes to Diodes</th>
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<th>Group B</th>
<th>Group C</th>
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</tbody>
</table>

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

Front view of a completed “Dover” digital frequency meter.
listed, firstly the gate period followed by the prescaler division ratio. As an example, if the switches are in the 0.1 s 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 IC1a to f; by
An inside view of the ‘‘Dover’’, showing both PCB’s and transformer in position.

earting 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 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 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 IC4b and one of the gates of IC4d 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
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 IC5b 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
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
The "Dover" decimal point control PCB.

Table of Values

Fig. 10

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>transformer, 240V primary, 9V secondary at 1 amp.</td>
</tr>
<tr>
<td>BR1</td>
<td>1 amp bridge rectifier</td>
</tr>
<tr>
<td>F1</td>
<td>250 mA slow-blow fuse</td>
</tr>
<tr>
<td>Reg.1</td>
<td>7805, 5V 1 amp regulator</td>
</tr>
<tr>
<td>C22</td>
<td>0.01 µF cer. plate</td>
</tr>
</tbody>
</table>

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.

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

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 frequencies.
SOMETHING for everyone again this month from another bumper postbag: 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 on more QSLs and on CW, while tropo. accounted for 107 QSOs were on SSB, the rest were submitted, his sticker for 125 was equally potent equipment. As 125 cards also very active on 70cm. and 23cm. with 3SK97 Gasfet preamp., a 125w amplifier station comprises a Yaesu FT-225RD with worked ON4ASL who was first licensed in July 16 to Luc Selis, ON4ASL (BL79j) Century Club certificate was issued on July 23. There was a 50/50 CW/SSB split to the Balkans, Auroras, some fair tropospheric openings and the excellent Perseids meteor shower.

Beacon Notes
On July 17, the Normandy beacon on 144.905 MHz FX3THF (Y113d) 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 Caldbec 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 K1J (GA), K1JH (MT) and R9VFF 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 KH6J. 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 W840G 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, W5BRM (TX) was contacted and the latter's friend W5PMPR 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 30 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 699.356283 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 2.73256356 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 cable fouling. For details concerning the AMSAT-UK membership and services, send an s.a.e. to AMSAT-UK, London, E12 SEQ.

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 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

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NORMAN FITCH, G3FPK
received. By contrast, the 16 was RS59 with GM3WOJ (XR). Another seven minute opening occurred at 1751 when YU2EZA (G1), OE5KMK (H1), YU2SSW (IF), DC/PE0ALM (GI), OE5DML (H1) and OE6WIG (HG) were contacted. OEL6LOG called but faded out.

A weak Aurora lasting about ten minutes was heard at 1820 on the 29th during which OZIFGP (EQ), LA3BO (FT), LA8OJ (CS), SM6KMU (FR), E16A6GE (WN) and LA8OW (EU) were worked, but all were very weak. A magnetic storm took place on Aug. 2 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 O616 and GS contacted on SBW were G6ZLR and G6BDV (ZL) and G1FFF. LA6QBA (GV) were worked when the beams were swung to the south, an 900ft. four 9-ele. Yagis from a very good site 2 kms. west of Ben Horn. GM4SIV/P, using the club call of the GM4SIV/P, was worked.

The QTE was from 45 to 90°, mostly the 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.

### 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 3/5 w 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 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 Award.

### 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, GW4HBN, listened to the British end of the GJ/W opening on June 30/July 1 when G3JYHU 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, G4ARL, (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 CW table. The following day, July 8, it was the SSB leg and this gave Martyn Jones, G4TIF, (Warks.) nine more 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 CW table.
Two Metres

Welcome to several new contributors. Nigel Roberts, G4IJF, (Essex) uses a Yaesu FT-221R with muTek "front end" and a 9-5 ele. Tonna Yagi. He was alerted to the Es on Aug. 6 by G4PIQ and heard 17KOE 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), YUIEN (JE), YUIUN (JD), YU2s CC8, S6F 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 Zm. CW stations. He asks us to remind readers that Monday evenings are CW activity periods.

Haydn Barker, G6XXV, (S. Yorks.) has been busy with A level commitments so 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 S-5-ele. indoor Yagi from YM40g and managed CT1WW on June 30 in that fine Es event. NFD saw G6UXEA/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), LAIK (FX), OK10A (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 entered the CW table with 71 stations and promises to update regularly.

From the Isle of Man, G2HDDZ 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 5 and EB1MS (XCO1b) on the 3rd. 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.

By contrast Alex McCreddie, 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 Yugoslav 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 was SM5DIC/P/EA4. In NFD, from an excellent site on Caln 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, IF, and KF, plus LZ1AB (LC) for his first LZ on 2m. in the Aug. 6Es. Kelvin Weaver's GW4TTU, (Gwent) "jet 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.

A mouth watering report now from Geoff Brown, G4JCD, in Jersey on recent Es activity from the island. He lists July 22, 1316-1334, 9H1BT, 9H1CD, YU2EZA and IT9HZHA heard; the 23rd, 144S-1457, 18TUS (IZ), 18ZYO (HY), ISREK (HA) and ISONY/8. On the 24th, 1029-1035, SP6FUN (IL) and OKs in JJ and JJ heard. The real "big one" occurred on the 28th, and JJ heard. 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, JJ, 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 1 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 2225 GMT.
F6FHP/P (BE), SM6AFH/2 (JZ), SM6AHF/2 (JA), also in 1A and KA, OE3CEW (II), EA2LU (ZC) and DKTU (GM), *Via Es* on July 24, YU3US HUL and ZV7HI were worked at 59-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. YU1JN (JD) and L2ZAI (BE) were then contacted and from 1232, for one hour, it was bedlam; 15 more YUs, 6 HIs and L2ZXXU were worked, but two YOs were lost. Dave mentions a number of DXCs and the 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 couple of Turkish stations in OB. Six new squares were added in. 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 G4WQI, 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 then added in the month. Martin Bythre, G4HFO, (Cornwall) thinks he was first of many to work EA8AJU in Tenerife on 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 IC-2E.

Since moving to Somerset and starting again on the squares trail, Ken Osborne, G4IFO, has wasted little time in getting on over the 100 worked, using *Ar*, *Es* 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 the wet Band 1. 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 (GK) 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 (YK33h) wrote before the Aug. 6 Es so Steve's letter deals with tropo. only. Using just 2½ w, 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 "following hammer" sound for about an hour. On the 29th, he contacted F6EID (BI), F6FIE (BI), HB9AEJN/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 Rabbits, G8LFB.

Les Bober, G4NOZ, (Essex) added another 17 stations on CW last weekend. Two new local operators, 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 G3BANG being heard for the first time ever, and GM4DHF/P (XS) being worked 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 Rabbits, 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 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.

No. of different stations worked since Jan. 1.

**Seventy Centimetres**

G3PBV is still suffering from *Syledis* QRM, as was F5HFI 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, Y1 and ZJ, from near Truro in Cornwall while on holiday using an ICF-202 and 3-ele. *Quad* and working over to E1 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, G4TIF, (Warks.) 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.

**ANNUAL CW LADDER**

<table>
<thead>
<tr>
<th>No. of different stations worked since Jan. 1.</th>
<th>Points</th>
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</thead>
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ANNUAL VHF/UHF TABLE

January to December 1984

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<thead>
<tr>
<th>Station</th>
<th>FOUR METRES Counties Countries</th>
<th>TWO METRES Counties Countries</th>
<th>70 CENTIMETRES Counties Countries</th>
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Three bands only count for points. Non-scoring figures in italics.

G6SUY/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 GM8YPI at 472 kms. He reports that EA8AJU (RO) is now QRV on 70cm. with many PAs and OZs, plus LA1ZE.

**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. GM4BYP was also quite readable but did not hear Dave. Best northerly DX was GW4HA/P (ZQ) at 472 kms. He noticed problems from local portable's 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 00FF/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.

G8PN 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 2C9A to a 5ft. dish is used. Gordon’s log extract shows a QSO with PEI1CW (DM53h) at 620 kms. for the best DX. He has had more success on 23cm. and worked GM4Y1H/P (XSW) in Highland region, an all-time new one on July 30. In NFD, GW3WDG/P (Clwyd) was a new county for 1984 and all-time county.

G4JCD 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, G78SBT, is back in Jersey and now has 26 squares on 23cm. Finally GM8BDX reports QSOs with PE1IST and PA0R0Y 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**

G4GO 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 snap 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.
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 subscription, 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 Community 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, Treliegh, 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,
Thursday evening. More details of the doings from the Hon. Sec. membership from Beverley, Driffield, Bridlington and Hull, as and on 26th it's a pre-contest briefing. The club? Havering. The as soon as possible.

The Calf of Man was most successful, with HF and VHF from the Hon. Sec. -see the Crown", which lies at the junction of Norwich Road (A45) and locals foregather in the club Hq. in Planefield Road every month - September 12 and 26th.

Up north again, this time all the way to Inverness, where the Hornsea are based at The Mill, Mill House, Atwick Road, Hornsea, every Wednesday evening. Hornsea is a few miles south as Hornsea itself.

On the Isle of Man the local club is active each week; details -see IPSWICH: J. Tootill, G4IFF, 76 Fircroft Road, Ipswich, Suffolk IPI 6PX.

HORNSEA: N. A. Bedford, G4NHP, 39 Hamilton Road, Bridlington, G4SRX.

HARLOW: Mrs. P. Bell, G4KVR, 11 Ram Gorse, Harlow, Essex.

HAVERING: J. R. Gibbs, G4UQR, 40 Bridge Road, Upminster, Essex.

HASTINGS: D. Shirley, G4NVQ, 93 Alfreys Road, Hastings, Sussex. (Hastings 42008)

HAVERING: J. R. Gibbs, G4UQR, 40 Bridge Avenue, Upminster, Essex.

HORNSEA: N. A. Bedford, G4NHP, 39 Hamilton Road, Bridlington, Yorkshire YO15 3HP.

HORNSSEA: A. G. Ivema, GM3YOR, 41 Veronica Crescent, Kirkcaldy, Fife KY1 2LH. (Kirkcaldy 200335)

HURLINGHAM: F. G. Babb, G3EEL, 29 School Lane, Hurlingham, South West London.

HURST: J. St. John, G6RSS, 43 George Street, Weymouth, Dorset.

HUY: Mrs. P. A. M. Beedie, GD4GWQ, 20 Terence Avenue, Douglas, Isle of Man. (0624 22295)

LINCOLN: Mrs. P. Rose, Pinchbeck Farmhouse, Mill Lane, Stanton-by-Cliffe, Lincoln LN1 2AS. (Gainsborough 78355)

MALTBY: I Abel, G3ZHI, 52 Hollity Avenue, Maltby, Rotherham, Yorks.

MEDWAY: A. Wallis, G4TQS, 3 Stoneacre Close, Parkwood, Rainham, Kent ME8 9PS. (0822 362095)

MIDLAND: N. Gutteridge, G3EBE, 68 Max Road, Quinton, Birmingham B12 1LB. (021-422 9787)

NENE VALLEY: L. Parker, G4PLJ, 128 Northampton Road, Wellingborough, Northants NN8 3PJ.

NEWARK: J. R. Hiscock, G4MDV, 17 The Green, Elston, Newark, Notts.

NH CQV5P. (East Stoke 3199)

R.A.I.B.C.: Mrs. F. Woolley, G3LWY, 9 Rannoch Court, Adelaide Road, Bristol, Avon BS14 IEG.

SOUTH BRISTOL: L. Baker, G4RZY, 62 Court Farm Road, Whitchurch, Bristol, Bristol 44047)

SOUTH EAST: J. P. Snary, GM4ESB, 22 Borden Avenue, Enfield, Middx. EN1 2DZ.

SOUTH MANCHESTER: D. Holland, G3WFT, 32 Woodville Road, Sale, Greater Manchester. (061 977 1877)

STOCKTON: J. A. Walker, G3NRX, 7 Widdrington Court, Stockton-on-Tees, Cleveland TS9 8UF.

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

SUTTON & CHEAM: J. Komdorffer, G2DMR, 19 Park Road, Banstead, Surrey.

THANET: I. B. Gane, G4NEF, 17 Penshurst Road, Ramsgate, Kent. (I. Thanet 51459)

TOGAY: A. Rider, G4GLP, 7 Kingston Close, Kingskerswell, S. Devon TQ12 5EW.

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

VALE OF WHITE HORSE: 1. White, G4SEK, 52 Abingdon Road, Drayton, Abingdon, Berks. (0235 31559)


WEST KENT: Mrs. J. Green, G3JPA, 13 Culverden Down, Tunbridge Wells, Kent TN4 1SB. (Tunbridge Wells 28275)

WIRRAL: G. Lee, G3UXJ, 30 Manor Drive, Wirral, Chester. (Wirral 41508)

WEST YORKSHIRE: R. D. B имени, G4JPY, 11 Denby Drive, Barnsley, South Yorkshire.

WIRTHING: E. Sandeaver, G4KKT, 33 North Farm Road, Lancing, Sussex BN15 9BT. (0901 773512)

WOLLERTON: Mrs. M. Beynon, G4GTD, 9 Wollerton Road, Wrexham, Wrexham.


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

YORKSHIRE: A. C. Lindsay, G4NRD, 11 Durcott Road, Evesham, Worcs.

ZEPHYR: G. Babb, G3EEL, 29 School Lane, Hurlingham, South West London.

and on 26th it's a pre-contest briefing. The club? Havering. The venue? Fairlykes 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 DTT will give a talk on TV1. 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. As usual, 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 Framford 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 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 RSVG.
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, Feribby 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.

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**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 Down’s Tennis Club, Cheam, and the natter evenings on the first Monday. The natter evening, therefore falls on September 3 in the bar at Down’s, 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.

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 Westland 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 G3YM will discuss winding your own coils. September 27 is a matter 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' back 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 Micklelegate, 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.

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**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 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

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**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, GBIZN, 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.

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   - 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.

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**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.

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**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 is a space 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.

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, Warks. HS12 9JP.

G4NRA, J. S. Prior, 115 Elston Hall Lane, Wolverhampton, West Midlands. WV10 9HD.

G4RIP, I. Edmondson, 36 Winifred Firs, Aldan’s Close, Hazlemere, Bucks. HP15 1JY.

G4UHU, F. Evans, 52 Southdown, Market Estate, North Road, London. N7 9DU.

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

G4UPQ, L. 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. CO6 5NP.

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

G4WUYY, C. Fox, 12 Cherry Close, Dyserth Bay Estate, Prestatyn, Clwyd. LL19 7DQ.

G4UZM, 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 Drive, Drighlington, Bradford, West Yorkshire. BD11 1HR.

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

G6GRN, N. M. H. Richardson, 2 Edna Road, Radford, 22 St. Elmo Avenue, St. Neots, Huntingdon, Cambs. PE19 1PR (Tel: 0480-217622).

G6HJU, L. Graham, 16 Carr Lane, Hoylake, Wirral, Merseyside. CH47 4LY.

G6JQ, T. E. Martin, 40 Thorn Road, Canford Heath, Poole, Dorset. BH17 9AX.


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


G6V3, E. V. Ashworth, 11 Como Avenue, Burnsall, Lancs. (Tel: 0964-824213).

G6X3, C. A. Wadsworth, “Brooklea”, Stibb, Bude, Cornwall. EX23 9HP.

G6YBZ, M. H. Rudder, 36 Brockhurst Road, Gosport, Hants. PO12 3DE.


G6ZRX, F. Southwell, 40 Downsvill, Small Bay Estate, Prestatyn, Clwyd. LL19 7DQ.

G4UXX, C. Fox, 12 Cherry Close, Dyserth Bay Estate, Prestatyn, Clwyd. LL19 7DQ.

G4UYY, C. Fox, 12 Cherry Close, Dyserth Bay Estate, Prestatyn, Clwyd. LL19 7DQ.

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