

The SHORT WAVE Magazine

VOL. XXIX

MAY, 1971

NUMBER 3

TRIO

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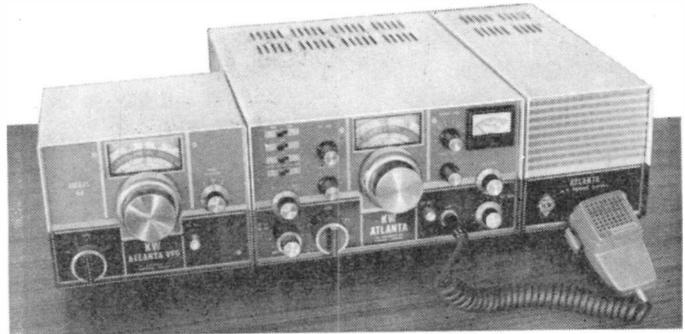
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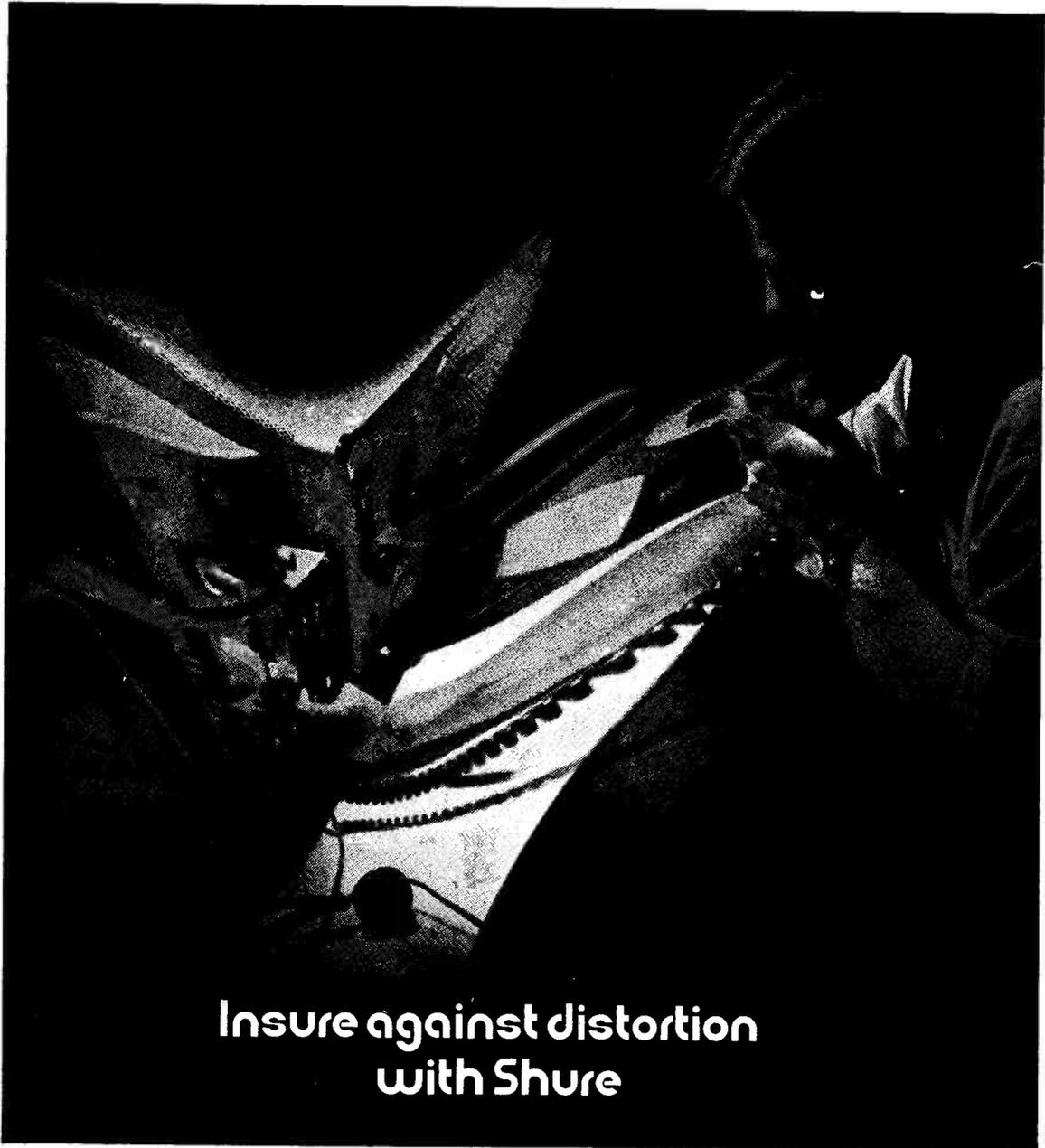
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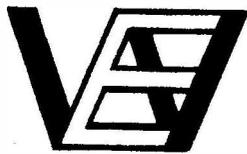
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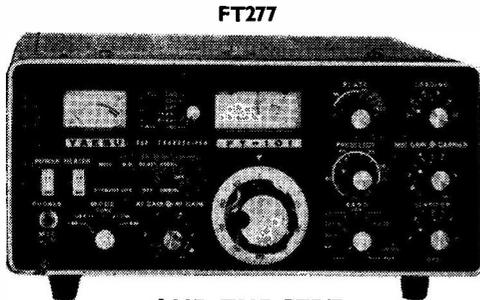
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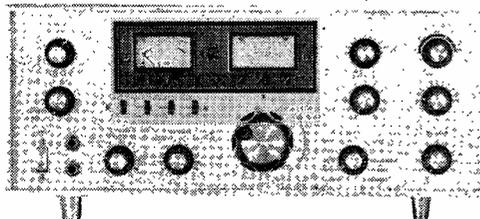


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Yaesu FRdx400

This appears in a variety of forms with a variety of options at various prices. Just to clear the air a bit, we import three models :

FRdx 400 £110

Identical to the FRdx400 de luxe except that it lacks the top band, WWV and 28.0-28.5 crystals and the crystal calibrator.

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FTdx400, £195.

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External VFO's for all transceivers, £35.

Matching speaker units for all models, £10.

In addition to the Yaesu line, we also import the Inoue IC-700 series (the all solid-state Rx at £85 is an absolute gift!), the FE-600 transceiver at £165 and its companion FE3500 1500V linear at £100. Don't let's forget the little old Inoue IC-2F 2m. FM mobile transceiver at £80.

Servicing : We do it, we do it well, we do it speedily and we do it at reasonable cost.

Hours : Tuesday to Saturday, 9-5.30 (closed for lunch 1-2 and all day Monday).

73 de Alan and Bill

P.S.—IC-2F owners—we should have a VFO for this rig by now—give us a yell if you want one (or we'll give you the dope to build your own if you wish!). Also available, 145.00 crystals and very simple mod. for A.M.

Second-hand Receivers

Drake 2B and Q mult., £80.

R.C.A. 8516L, £150.

Collins 51J3, £150.

Collins 51J4, £275.

Collins URR 390A, £350.

Collins URR 388, £225.

Collins URR 390, £300.

Sommerkamp FR-500, £110.

BC348, £15.

Heathkit SB301 plus extra CW filter, £110.

Second-hand Transmitters

DX40 and VFO, £20.

Heathkit SB10, £15.

Sommerkamp FL-1000, £70.

Vanguard IV, £85.

Star ST-700, £80.

Second-hand Transceivers

Pye 4m. base station, as new, £25.

Heathkit SB101 and p.s.u., £145.

KW2000 and A.C. p.s.u., £80.

Inoue IC-700 demonstrator, £145.

Paros 3 bander, £80.

Special BC221's—A1, fully checked, complete with correct charts, etc., £15.

Sundries, post free :

Asahi twin meter SWR bridges, £6.80.

Teisco DM 501 PTT dynamic mike, £3.00.

Yaesu YDB44 table mike, £10.20.

12 hour digital clocks, £5.80.

Plain brass morse keys with ball bearing pivots, fully adjustable, £1.

Katsumi EK-9X electronic keyers, £8.20.

Padded headsets, low impedance, £2.50.

Solid state regulated p.s.u.'s, £5.50 and £8.50.

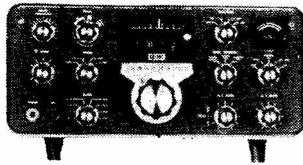
Tech TE-65 VTVM, £16.50.

Filters XF-9A, £14, XF-9B, £18, TEW £10 (get our sheet on mechanical and crystal filters).

Valves, components, enamelled copper wire.

It will pay you hands down to send us a large s.a.e. which we will promptly fill with all sorts of guff.

MODEL SB-102 TRANSCEIVER KIT

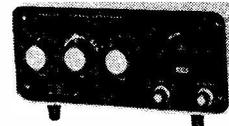


New transistorised L.M.O. — retains features of SB-101—180 watts PEP SSB—170 watts CW input 80-10 metres — requires external PSU (HP-23A or HP-13A).

Kit K/SB-102 £192 Carriage 70p

SB-200 LINEAR AMPLIFIER KIT

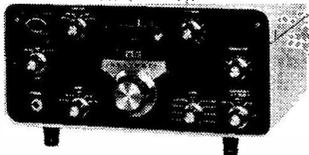
80-10 metres — 1200 watts PEP SSB input—1000 watts CW output—pre-tuned input—internal PSU, 120/240 VAC.



Kit K/SB-200 £115 Carriage 80p

SB-301 AMATEUR BANDS RECEIVER KIT

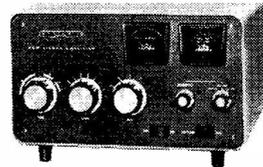
80-10 metres—stability less than 100 Hz per hour—visual dial accuracy less than 200 Hz —sensitivity 0.3µV for 10 dB S + N — N LSB, USB, CW, RTTY. 120/240 VAC.



Kit K/SB-301 £140 Carriage 70p

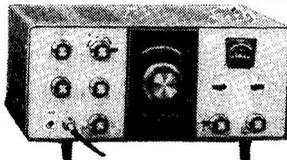
SB-220 LINEAR AMPLIFIER KIT

2000 watts PEP SSB input 1 kW on CW and RTTY—requires only 100 watts drive—pre-tuned pi-input —fully metered—110/240 VAC built in PSU.



Kit K/SB-220 £165 Carriage £1.10

HW-101 5 BAND SSB-CW TRANSCEIVER KIT



High performance minimum cost — 80-10 metres — 170 watts C.W., 180 watts PEP—solid - state L.M.O.—less than 100 Hz drift —requires PSU (HP-23A-HP-13A).

Kit K/HW-101 £125 Carriage 60p

HW SERIES TRANSCEIVERS KIT



HW series Single Band Transceivers. New styling—upper or lower side-band—200 watts PEP input—choice of HW-12A (80m) or HW-32A (20m)—requires external PSU (HP-23A or HP-13A).

Kit K/HW-12A £61.50 Carriage 50p

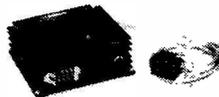
Kit K/HW-32A £63.50 Carriage 50p

HP-23A A.C. PSU KIT



(800 VDC-300 VDC 12-6 VAC-130v. BIAS) 110/240 VAC.

Kit K/HP-23A £25 Carr. 60p

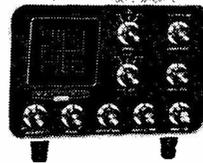


HP-13A MOBILE PSU

12-16 volts D.C. in 800 and 300 VDC plus—130v. bias.

Kit K/HP-13A £36 Carriage 40p

SB-610 SIGNAL MONITOR KIT



Shows quality of signals transmitted and received—160-10 metres—15 watts to 1 CW—operates with receiver IF's 100 kHz—6 MHz—120/240 operation.

Kit K/SB-610 £46 Carriage 40p

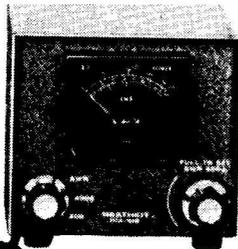
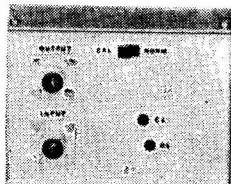
HEATHKIT WATTMETER/SWR BRIDGE KIT

Measures RF output from 10 to 2000 watts

Remote Monitoring Capability

HM-102 SPECIFICATIONS: Frequency range: 3.5 to 30 MHz. Wattmeter Accuracy: ± 10% of full scale. Power Capability: 2 kW. Impedance: 50 ohm. Insertion SWR—less than 1.05: 1. Ranges: 200 and 2000 watts full scale. SWR Bridge: Continuous duty type Connectors: UHF type SO-239. Dimensions: 5¼" W × 5½" H × 6½" D. Nett Weight: 2½ lbs.

Kit K/HM-102 £15.50 Carriage 30p

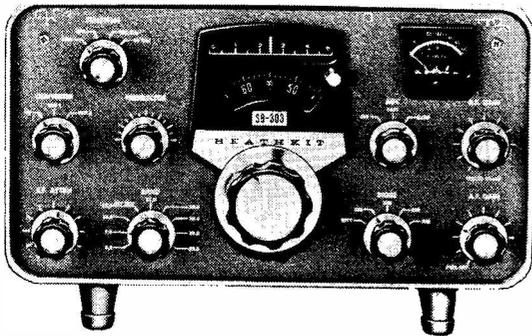


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Kit K/SB-303 £175 Carriage 70p

the '303' . . . the new standard of performance in receivers

■ State-of-the-art solid-state circuit using 27 silicon transistors including 4 dual-gate, diode protected MOS-FET'S, plus 1 IC ■ Heath factory assembled solid-state Linear Master Oscillator for instant warmup, improved stability & more accurate tracking ■ A unique Heath design using 9 modular plug-in circuit boards ■ Receives USB, LSB, AM, CW & RTTY ■ Complete 80-10 M coverage plus 15 MHz WWV for exact calibration ■ 25 kHz & 100 kHz calibration markers ■ Front panel selection of antenna & power connections for up to two VHF converters with rear panel jacks built-in ■ Fast & Slow AGC selectable from front panel ■ Front panel selection of built-in 2-1 kHz SSB crystal filter or optional AM & CW crystal filters ■ Built-in extremely stable solid-state power supply with circuit breaker protection ■ Speaker and/or headphone selection from front panel ■ Handsome SSB-Series styling in a smaller package than the famed SB-301 ■ Easy, enjoyable assembly with the famous Heathkit manual.

PROFESSIONAL SHORTWAVE, SB-310

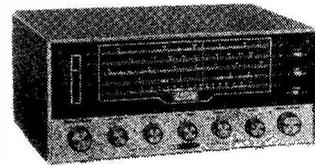
Frequency range (Mhz)
3.5-4.0; 5.7-6.2; 7.0-7.5; 9.5-10.0; 11.5-12.0;
14.0-14.5; 15.0-15.5;
17.5-18.0; 26.9-27.4;
(other options). Less than 100 Hz drift. Selectivity 5.0 kHz at 6 dB-15 kHz at 60 dB. 8 ohm ext. speaker. 110-240v. A.C.



Kit K/SB-310 £145 Carriage 60p

DE-LUXE SHORTWAVE, GR-54

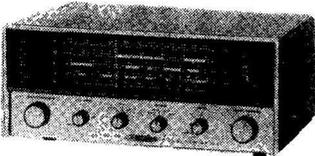
2 MHz to 30 MHz, plus 550 kHz to 1550 kHz, 180 kHz to 420 kHz. Tuned RF. Crystal filter. Product detector. AM/SSB/CW. Noise limiter. Sleek styling. Charcoal grey metal cabinet. 120-240v. A.C.



Kit K/GR-54 £53 Carriage 60p

LOW COST 4-BAND, GR-64

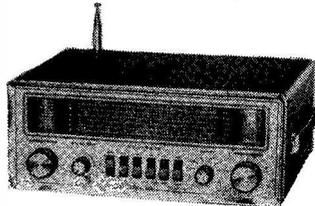
3 shortwave bands cover 1 MHz to 30 MHz, plus 550 kHz to 1620 kHz. Built-in 5" speaker. 7" slide rule dial 4-valve superhet circuit. Handsome styling. 110-240v. A.C.



Kit K/GR-64 £25 Carriage 50p

SOLID-STATE GENERAL COVERAGE, GR-78

Tunes from 190 kHz to 30 MHz in six bands. Double conversion above 18 MHz. AM/CW/SSB. Nickel Cadmium Battery charges from 240v. A.C. or 12-15v. D.C. Modular construction. Durable charcoal and matching finish.



Kit K/GR-78 £65 Carriage 40p

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TRIO TS 510 AMATEUR TRANSCEIVER with speaker and mains P.S.U., £180
TRIO JR310 AMATEUR BAND 10-80 Metre Receiver, £77-50.

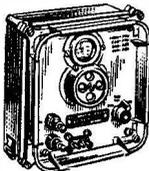
ADMIRALTY 62B RECEIVERS



High quality 10 valve receiver manufactured by Murphy. Five bands 150-300 Kc/s.; 560 Kc/s.-1.5 Mc/s.; 3.9-30.5 Mc/s. Incorporates 2 R.F. and 3 I.F. stages, band-pass filter noise limiter, crystal controlled B.F.O. calibrator, I.F. output, etc. Built-in speaker, output for phones. Operation 150/230 volt A.C. Size 19" x 13" x 16". Weight 114 lbs. Offered in good working condition, £22-50, Carr. £1-50. With circuit diagram. Also available B41 L.F. version of above. 15 Kc/s.-700 Kc/s. £17-50, Carr. £1-50.

DUMMY LOAD RESISTORS
 Carbon 30Ω 35w., 27½p. P.P. 7½p.

CRYSTAL CALIBRATOR No. 10



Small portable crystal controlled wavemeter. Size 7" x 7½" x 4". Frequency range 500 Kc/s.-10 Mc/s. (up to 30 Mc/s. on harmonics). Calibrated dial. Power requirements 300v. D.C. 15mA and 12v. D.C. 0.3A. Excellent condition, £4-47½. Carr. 37½p

MULTI-METERS
 Model TE-300. 30,000 O.P.V. Mirror scale, overload protection 0.6/3/15/60/300/1,200v. D.C. 0.6/3/10/20/60/1,200v. A.C. 0/30uA/6mA/60mA/300mA/600mA. 0/8K/80K/800K/8 meg. ohm-20 to +63 dB., £5-97½, P.P. 15p.

Model TE-90. 50,000 O.P.V. Mirror scale, overload protection. 0.3/1.2/6.0/30/60/1,200v. D.C. 0.16/30/120/300/1,200v. D.C. 0.3/6/60/600 mA. D.C. 16K/160K/1.6/16 MEGΩ. -20 to +63 dB., £7-50, P.P. 15p.

TMK Model TW20CB. Features resettable overload button. Sensitivity: 20KΩ/volt D.C. 5KΩ/volt A.C. D.C. Volts: 0-0.5, 2.5, 10, 50, 250, 1,000v. A.C. Volts: 0-2.5, 10, 50, 250, 1,000v. D.C. Currents: 0-0.05, 0.5, 5, 50, 500mA. 10 amp. Resistance: 0-5K, 50K, 0-500K, 5 MEGΩ. Decibels: -20 to: +52 dB., £11-50, P.P. 17½p.

Latest Catalogue

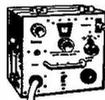
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UR-1A SOLID STATE COMMUNICATION RECEIVER



4 bands covering 550 Kc/s.-30 Mc/s. continuous. Special features are use of FET transistors, 5 Meter, built-in speaker, variable BFO for SSB reception, noise limiter, bandspread control, sensitivity control. Output for low impedance headphones. Operation 220-240v. A.C. or 12v. D.C. Size 12½" x 4½" x 7". Excellent value. Only £24.00. Carr. 37½p.

CLASS D WAVEMETERS



A crystal controlled heterodyne frequency meter covering 1.7-8 Mc/s. Operation on 6 volts D.C. Ideal for amateur use. Available in good used condition, £5-97½. Carr. 37½p. or brand new, £7-97½. Carr. 37½p.

TEIS TRANSISTORISED GRID DIP METERS
 Six ranges. 440 Kc/s.-280 Mc/s. Operates on 9v. battery. Full instructions £12-50. P.P. 17½p.

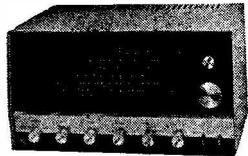


HANSEN SWR-3 BRIDGE
 Impedance 52 ohms. Also operates as field strength indicator. complete with telescopic aerial, £3-47½ each. P.P. 17½p. PL259 plugs to suit 37½p each.

CODAR EQUIPMENT

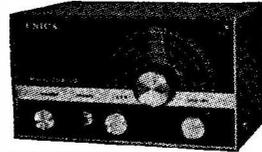
- CR.70 Receiver ... £22-50
- CR.45 Receiver ... £14-50
- CR.45 Kit from ... £11-50
- PR.30 Preselector ... £7-50
- PR.30X (Built in P.S.U.) £9-50
- RQ.10 Q Multiplier ... £7-25
- RQ.10X (Built in P.S.U.) £9-87½
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- 12/RC Control Unit ... £2-50
- AT5 Mains P.S.U. ... £11-00
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LAFAYETTE HA.800 SOLID STATE AMATEUR COMMUNICATION RECEIVER SIX BANDS 3.5-4, 7-7.3, 14-14.35, 21-45, 28-29.7, 50-54 Mc/s.



Dual conversion on all bands. 2 x 455 Kc/s. mechanical filters. Product detector Variable B.F.O., 100 Kc/s. crystal calibrator. 5 meter. Huge slide rule dial. Operation 230v. AC or 12v. DC. Size 15" x 9½" x 8½". Complete with instruction manual, £50-50. Carr. paid (100 Kc/s. Crystal £1-97½ extra).

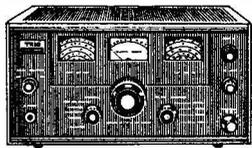
UNR-30. 4 BAND COMMUNICATION RECEIVER



Covering 550 Kc/s.-30 Mc/s. Incorporates variable FOB for CW/SSB reception. Built-in speaker and phone jack. Metal cabinet. Operation 220/240v. A.C. supplied brand new, guaranteed with instructions, £15-75. Carr. 37½p.

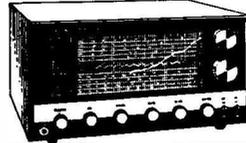
TRIO 9R-59DE

4 band covering 550 Kc/s. to 30 Mc/s. continuous and electrical bandspread on 10, 15, 20, 40, and 80 metres. 8 valve plus 7 diode circuit. 478 ohm output and phone jack. SSB-CW. ANL. Variable BFO. 5 meter. Sep. bandspread dial. 1F frequency 455 Kc/s. audio output 1.5w. Variable RF and AF gain controls 115/250v. A.C. Size: 7" x 13" x 10" with instruction manual, £42.00, Carr. paid.



TRIO COMMUNICATION TYPE HEADPHONES. Normally £5-97½, our price £3-75 if purchased with receiver.

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5 Band AM/CW/SSB amateur and short wave 50 Kc/s.-400 Kc/s. and 550 Kc/s.-30 Mc/s. F.E.T. front end. 2 Mechanical filters. Huge Dial. Product detector. Variable BFO. Noise limiter, 5 Meter. 24½ Bands. 230v. A.C./12v. D.C. Neg. earth operation. RF gain control. Size: 15" x 9½" x 8½". Wt. 19 lbs. Exceptional value, £45. Carr. 50p.

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7 separate ranges between 3.5 and 29.7 Mc/s. 7 valves, 2 transistors and 5 diodes plus 8 crystals: output 8 and 500 ohm and 5000 ohm phone jack. Crystal controlled oscillator. Variable BFO. VFO. AVC. ANL. 5 meter. SSB-CW. Stand-by switch. special double gear dial drive socket for connection to a transmitter. 115/250v. A.C. Mains. Size: 7" x 13" x 10" with instruction manual and service data, £65-00, Carriage paid. Package deal: JR500SE with SP5D speaker and HS4 headphones, £69-50.

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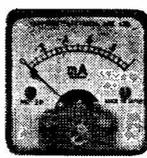
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500µA	£1-50	100mA	£1-37½	50v AC	£1-37½
500-0-500µA	£1-37½	150mA	£1-37½	150v AC	£1-37½
1mA	£1-37½	200mA	£1-37½	300v AC	£1-37½
1-0-1mA	£1-37½	300mA	£1-37½	500v AC	£1-37½
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CP404	AUDIO	80 volts	15 watts	TO3	37½p each.
CP430/431	AUDIO	100 volts	30 watts	TO3	37½p each.
CP433	AUDIO	120 volts	40 watts	TO3	42½p each.
CP702	AUDIO	60 volts	15 watts	TO3	37½p each.
CP704	RF or Servo	80 volts	30 watts	TO3	47½p each.
BLY68	AUDIO	100 volts	25 watts	TO3	47½p each.
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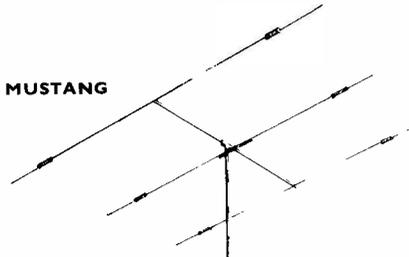
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The SHORT-WAVE Magazine

EDITORIAL

Reasoning *In the course of a twelvemonth we collect plenty of comment on the MAGAZINE and its contents. One of the most frequent criticisms is in the strain "Why do you burn up so much space on the news features—who wants to know what somebody heard or worked last month?"*

The answer is quite simple. It does not turn altogether on the fact that, as we know, times-1000 people are interested just in reading CDXN or VHFB as ever think of themselves writing in with their bit of news. Those band-by-band discussions, activity reports and lists of "calls heard, worked and QSL'd" (which, incidentally, years ago was our sub-title for CDXN) keep a great many people informed as to what is possible and available in the way of DX and what is happening on the communication bands generally. We are all—or 90% of us, at least—essentially communicators. To communicate by radio, "across the parish or across the world" (as our saying is) was the original reason why most of us went for a licence in the first place.

If, to pursue our critics' broad argument to its logical conclusion, we and all other of the world's radio amateur periodicals together ceased to discuss the practicalities of Amateur Radio communication, in about five years' time the very idea that it is possible, almost any day, to talk between attic bed-rooms in London, Sydney, Seattle, New York, Rio or Cape Town would become forgotten or smiled at as a fiction—till some enterprising radio amateur journalist started it all over again by getting himself into print with a feature like CDXN!

* * * *

We are likewise often criticised for the space taken up by our regular "Clubs" feature. The reason we give such coverage is that it is from the Club movement, looking over the country as a whole, that Amateur Radio derives much of its virility and its potential for the future. It is mainly through the Clubs—in all their variety of size and effectiveness—that not only do the new recruits come but interest is maintained in the whole concept of Amateur Radio as a spontaneous world-wide activity.

And there is another very important reason why the Club movement should have all the publicity support that we can give it, and have always given it over the last 25 years: It proves to Govt. bodies and other authorities who may have a mind to be acquisitive or interfering that Amateur Radio is a powerful—even if a minority—movement, supported by identifiable groups of enthusiasts throughout the United Kingdom.

*Austin Foxgk,
G6FO.*

COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

HOW nice it is to sit down to the writing of this piece with a bagful of letters from which to build up a picture of DX as seen from the viewpoints of a cross-section of the population, rather than by one operator.

At the time of writing, the annual re-awakening of life is showing definite signs—which means that by the time this reaches the reader all the many and various forms of what might be called “active QRM” will be in full swing—gardening, house-painting, cricket and so on. This is also the time, before the weather becomes too hot for more than sun-bathing in the garden, to look at aerials, and to consider what improvements and rebuildings can be done to prepare for the coming year’s activity.

Then there is the /M gear to be considered—an activity that for most of us is confined to summer days when we attend the various Rallies, or maybe go out to some good location near home, and work as much of the DX as we may before the batteries die. What a wonderful thing is Amateur Radio—so many facets that no one amateur can have either the talent or the time to look into more than about a tenth of the available activities wrapped up in that word “Communication.”

On a slightly different tack, now the mails are back to a state of near-normality, it is interesting to notice how much or how little various individual DX-ers reacted to being cut off from the “jungle telegraph” in the form of their particular DX source. Some were to be heard at all sorts of hours, as they tried to keep an ear on all developments, while some others seem to have all but flung in the towel and either gone completely QRT or given up thoughts of working anything but the run-of-the-mill stuff.

So let us get back to business and see what our various correspondents are saying about the bands.

Top Band

A note of considerable interest

to those G’s interested in working “over the Pond” indicates that from May 1, certain changes in the Stateside frequency allocations are being made coincident with changes in the Loran-A radio navaid. Without going into all the details it means that essentially, the Pacific Coast W’s are being shifted from segments in the upper half of the band to the LF end; it looks as though pretty well all parts of the U.S. will from May 1 be able to use the DX segment of 1800-1805 kHz, which should generate some more DX interest on Top Band.

W1BB comes in at this point with his *DX Bulletin*; the last one to hand was dated January 31, and indicates that, by and large, we have has a good season. SWL Allen, who has done so much work in VK6 on Top Band, hopes to have his own call ere long and to be able to complement the efforts of VK6NK and the others over there. PJØCC gave pleasure to many, as indeed did VP2EE (Anguilla), VP2AGA (who was on Anguilla for a time) and is now 8P6DR on Barbados, active on all bands CW. K5TFG is running a *two-element beam* on Top Band, using 1/10-wave element spacing, at fifty feet—this array netted 589 from GM3YCB, and is capable of working into Hawaii *off the back!*

However, all this is a bit off-putting to those of us who have either wire aerials which are too short or too low for the band, or no facilities for outdoor arrays; but even these lads need not give up all hope, if they know the *operating* form. As example, consider the case of G3LXP in St. Albans, and his “loft-owner’s special” aerial hooked to an old AM/CW rig and an HRO. With this set up—the aerial in the loft is a full half-wave doubled about the loft, believe it or not—Derek made a CW QSO with UT5CO last year, which has now been confirmed—the interesting part being that several of the locals, including such as G3NOH, heard the ‘LXP end of the contact, but could not

hear the UT5. This must be at least equal to working East Coast W, when the difference in the quality of the path is considered.

Just before Christmas 9Y4NN up his 160m. machinery and made several QSO’s with G and GM; K8IUA/KL7 has heard some Europeans, notably G3RCE/A, G3RKJ, and G3ZDY . . . over the VK path, there were 19 dates when it opened to Europe, and SWL Allen aforementioned logged no less than a dozen calls from U.K. plus of course DL9KRA and OK1ATP. As a little light relief, the tale of KØDCF, who finds he has not the trees in the right places for his purposes, and is afraid to put poles up on the ice lest the local snow-mobiles collide with them.

G3WTA (Morpeth) mentions his QSO with 9Y4NN. Seems Mike had called “CQ DX” and was listening when he heard a station tuning up—quite a surprise to find it was 9Y4NN. However, the contact was brief as the QSB was very deep and, at the 9Y4 end, the QRN pretty bad. The aerial Mike uses is perhaps of interest; the top is 770 feet at sixty feet tuned against ground—the earthing arrangements, which are the crux of the matter, comprises a radial mat containing three *miles* of wire. Equipment is a transistor exciter driving a 6146 as PA, and a CR-100 receiver on the DX frequency plus an HRO on the transmitting, the latter being fed by a 210-footer at forty feet. Mike is now playing with verticals for the band and would very much appreciate *useful* SWL reports.

Some people may be wondering at the absence of some of the GW contest club entries on Top Band or rather their loss of signal-strength—the latter should be well noted by those who are always beefing that the top stations use too much power, since they will be using the same rig but will no longer have the advantage of being able to work with the GW3UUZ aerial on Nash Point Lighthouse. The reason is simply

that Andy has been posted to serve on the Skerries Light. Permission to operate from there has not yet been received from Trinity House and Andy thinks it unlikely he will be on from there before August at the earliest, although he may be firing up from his new home in Holyhead ere then. On a different tack, GW3UUZ, like so many others, is very worried indeed at the possible outcome of the next frequency-allocation conference as far as Top Band and Eighty are concerned. While there is no doubt at all that the administrations of many countries are backing continued use of these frequencies by amateurs, it is equally obvious that these same authorities, including our own, are very disturbed at the increasing abuse of the licence conditions by both DX'ers and those who try to stop any DX-chasing activities; it is known that the authorities are in possession of several recordings of happenings on our bands, and there seems little doubt that operators in at least three or four countries are in for a very unpleasant shock; we must hope that the good sense of the rest will prevail so that we do not lose any of our privileges and facilities on either of these two bands. There are letters from GM3IAA and GW3AX, as well as GW3UUZ, on this particular subject.

G3YMH (Staines) was home for the weekend of the *CQ WW 160* contest, and managed to work quite a lot of interesting stuff; but more interesting still is his list of gotaways, which takes in ZD8AY (569 on the first morning and 449 on the second); W9UCW/HKØ, at 559 around 0300z on January 31; 9Y4NN, heard very weakly at about the same time; and YV1OB, at 449 a couple of hours later. Things were generally spoilt by the twits who *still* don't know that the DX on 1802-1805 kHz listens around 1825 kHz, and a little more so by the YV, who was listening on his own frequency, sublimely unconscious of the fact that half Europe was hearing him—resulting in the said half of Europe all transmitting on 1805 kHz within ten seconds of him appearing!

GM3IAA (Inverness) and G3ZDY also, were hearing a station signing VS6DO on January 29, and wondering . . . GM3IAA, indeed being quite convinced of its not being

good—but it is known that VS6DO was on the band at the relevant times, so it leaves only the waiting for QSL cards to settle the matter.

In his first year of operation G3ZES (Barking) raised a total of 26 countries with his Codar A.T.5., including such as ZD8, PY, W's, 9H1, 5T5, 9Y4, VO, VE and TA, as well as the usual European countries. Alan started with a 240-foot centre-fed loop with a vertical section of 50ft., which was later supplanted by a 60ft. vertical, top loaded. Activity has been 85% CW, 13% AM and 2% SSB, the latter on a home-built rig built into a biscuit-tin!

The spirit is still there on Top Band, avers G2DF (Warrington) who, as a result of that comment in March CDXN, received a telephone call from GC3YIZ to arrange a sked. To do so the GC had to modify his aerial—a chance S7 QSO with your scribe earlier the same day gave a reasonable hope, and sure enough at 2100z the trick was turned to give Fred his 98th.

On the theme of daylight DX we have a letter from G3ZGC, aboard a Shell supertanker of 98,000 tons gross, call GYKW, who writes to say he was between Spain and Gibraltar and heard G3VVO, G3UGB on AM calling CQ; also G3HOS at 559; G3YCC at 579

with QSB; by 1955z G3ZES was making a test call, at 599. On both February 16 and 17th, the latter when they were anchored off Las Palmas, G3HRW was heard giving forth with a CQ DX, and as far as G3ZGC could tell, getting no joy. Around the African coasts little 160m. traffic was heard, although there were lots of unidentifiable carriers; the bloop-bloop thing on 1.9 MHz was up to S9 in the daytime at Walvis Bay, and DHJ reappeared at S6 when Joe was in the Persian Gulf.

During June 19-22, G3IKR, G3VPE, G3XIP and G3ZXO hope to be on Skye, signing GB3SKY. For Top Band, they will be using 1820-1840 kHz between 2000 and 2100z on the 21st, CW, while the SSB addicts will be catered for by operation from 2200-2359z on June 22, around 1860 kHz. Let us hope this one comes off successfully. They also intend to do Roxburgh over June 15-16, and if it turns out the way they want it, another rare GM county on the 23-24, when heading home.

Top Band Trans-Equatorials

As a result of the QSO's with Europe made by a few PY's last year, it has been decided to hold regular Activity Periods this season. Daily throughout June these will continue, from 0001 to 0030 GMT,



Roger Williams, G3YRO, Red Lion Hotel, Fareham, Hants., got his licence in September '69, at the tender age of 14—so he has plenty of time before him, the lucky chap! Roger's main interest at present is Top Band, AM/CW/SSB, the AM/CW Tx being home-built with a CR-100 receiver, and for SSB the rig is a 160m. transceiver. Using an end-fed wire 264ft. long by 42ft., his Top Band DX worked covers some 18 countries, including W1-2-4-8 and VE3—nice going.

with the Europeans leading-off for five minutes and then every other five minutes, the southern hemisphere types taking the intermediate periods. Reports, both transmitting and SWL, in the usual way, and at the same time to SWL Rolf Rasp, Box 51-ZC-00, Rio de Janeiro, after July 31, in case the activity continues well into July. Rolf will then analyse the data, and put out a second newsletter, adding to his circulation all those who have shown interest by reporting. Incidentally, Rolf is handling, from the same address, QSL's for PY1MGF, whose address is not correct in the current *Call Book*.

Rare to join in Top Band activity is G2DC (Ringwood) who found he could raise anything he wanted in the way of EU's during the *CQ WW 160* contest, but could not do a thing with the W's. Perhaps the reason is the one put forward by W1WY (Stamford, Conn.) who comments that conditions were "foul." Although the odd EU signal could be heard on occasion, the QRN on Saturday night/Sunday morning was colossal—the only bonus was that the path to the

Caribbean was open and some QSO's were possible in that direction.

G3YMH (Staines) tells us all went well on the GM6UW/P trip, and 800 QSO's were booked in. Ron says it helps no end if you are perched on the edge of a cliff with the aerial 300 feet above sea level. Another University type is G3YPT (Swanage) who managed to get away from Essex and back to the rig over Easter and collect a couple of new countries in the way of Anglesey and, believe it or not, Beds.

G2HKU (Sheppey) maintained his usual level of steady activity, and raised PAØPN, GM3NVU, GD3GMH and G13OLJ on SSSB, plus OK's, DJ6TK, GM3FXM and PAØINA on the key.

Eighty and Forty

Quite a clip, when both are taken into account. G3LZQ (Brough) updates his scores, having returned from ZS, and indeed has slipped in a quiet trip to VK since! All the cards have gone out, thanks to the efforts of G3JXE. Most of the 258 G's worked were by way of ten-metre SSB although G3IGW made it on Forty. During the 7 MHz Phone

Contest no less than 58 U.K. stations were heard but the ZS QRN spoilt things. As for the Top Band—addicts please note—the QRN out there is something one has to experience to believe, wrecking even HF operation on most evenings, and so any attempts should be organised for the months of June, July, August or September.

G3UML (Ilford) has some very pertinent comments to offer on the subject of DX-net operation; Laurie says that because of the vast disparity in signal strengths between locals and DX there is just no hope for a normal operator using the "hunt and call" technique of the HF bands. So soon as a few stations hear the DX and call, it attracts the others and buries the DX—and all the DX can hear from his end is an S5 QRM noise. Thus, everyone loses out. By net operating, on the other hand, the DX knows where he is going to get a fair chance of a clear channel, and more people at the EU end of the link get a chance. However, to succeed, certain essentials are needed: Stations must *shut up* unless they are called or asked to call, for a start. Secondly,



This is a remarkable photograph—it must have been taken in the late 1930's on a field-day occasion at or near Morley, Leeds. We have some of the callsigns but no very positive identification. We would be very glad to hear from anyone who can identify himself, or the others, with notes on the occasion.

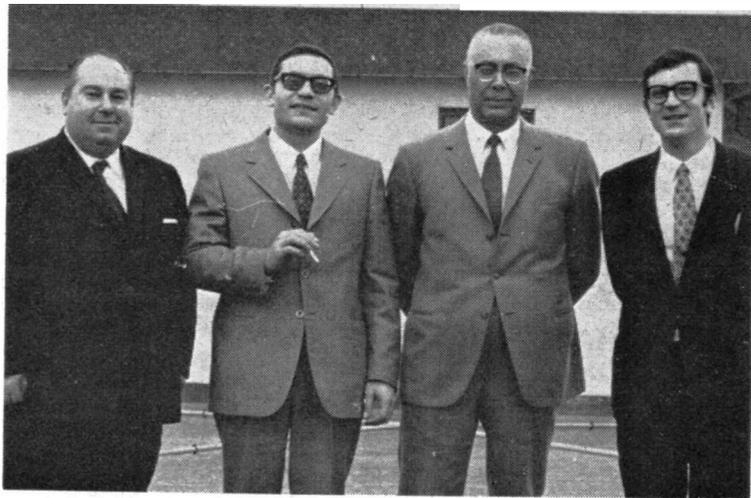
the net control *must* be audible to the DX; as only few stations can achieve this, those few get accused of being DX-hoggers—Laurie says “You try shovelling others through for an hour to an S3 DX station!” Thirdly, the net must be there, and must attract (by letters and contacts on other bands) the DX to come on the bands. G3UML has possibly added the main one when he concludes by saying that it is best to call the control station earlier in the evening if you can, to let him know you will be listening, so as to reduce the QRM from callers-in during the Net proceedings.

W6AM (Long Beach) is of course a regular habitué of all five bands; but quite apart from Don's regular activity reports, his comments are often amusing; as for instance his claim to be the only one to profit by the earthquake on February 19—it seems the 'quake caused the contents of the distribution transformer station over the road to blow up. After 13 hours, the old transformers had been replaced by a 100 kW and two 50 kW items—to the delight of W6AM his power regulation was much improved by this result of the earthquake.

VS9MB (Gan) comes in at this point with some details of the operating picture out there, at least as far as the U.K. goes. Most G's are heard on Ten around 1000-1130z; on Fifteen 1130-1345, sometimes later; and on Twenty, 1630-1830z, again sometimes later. For the 3.5 MHz types, VS9MB's crew try to be on both 7 and 3.5 MHz every Saturday evening from around 1830z, although the noise level is often such as to make useful operation near-impossible. VS9MB QSL's should go through G3KDB.

The phased verticals with which G3XAP (Stowmarket) was going to assault Forty have come to the proverbial grinding halt but even with just one, all W call areas have been booked in, not to mention VK2VN, VK3MR (no less than five times) VK7ZD, ZL2IR, PY1DUB, PY2FAO, PY2EQO, PY5OF, KV4CI, HV3SJ, ZC4CB, MP4BIY, 9H1CG, EA8ET and a whole host of less exotic European stuff.

G3SXR (Fowey) was 8P6DO over Christmas, and so when he got home decided to try Eighty again and see if it looked the same as it did when



Executive committee of a newly-formed body called the “DX Old Timers' Club”, with Hq. in Palermo, Sicily, (Box 143), and at present offering the W.I.I. (Worked Italian Islands) certificate. In this picture are, left to right: IT1SEZ, IT1TAI, IIAA and IT1ZGY.

he was the DX. In terms of contacts, it has meant VE1-3, VO, various W call areas, W9/TF, JX4, XE1, KP4, KZ5, CM2, VP2VI, VP2VAG, VP7's, VP9, PZ5, 8P6's, YN1, CT2, EA6, EA8, ZB2, ZC4, 4X4, TA3, OD5, UW9, MP4, EP2's, ZL2-4, JA, ZS1 and ZD8. Equipment used is a KW-2000 driving a home-built linear to 350 watts output, feeding a Windom firing South-West. All on SSB.

G2NJ (Peterborough) is still collecting /MM QSO's; OH2BHI /MM was raised on Eighty when bound for Tees-side, and a couple of YO/MM's were heard working PAØFRI on Forty—unfortunately the two /MM's were lost into the noise before G2NJ could call them. G3VDW (Coalville) is another who is interested in /MM's, and he found JA4JUV/MM on Forty, when the latter was in a tanker off Madras.

A dipole for Eighty at thirty feet is used by G3YNC (Harringay) as an alternative to QSO's on Top Band, or helping to build up the new Scout Club station at Gilwell Park. Incidentally, the latter have a nice high BXI tower, to which G3YNC is adding an arrangement to enable the HF and VHF beams to be rotated independently of each other by two separate beam-rotators—using concentric tubes for the two masts, one would assume. Anyhow, John can

use Eighty occasionally, and has ZL1, ZL3, ZL4, KZ5, PZ5, TI9, CM2, XE1, VP7, VE1-3 and much of like ilk booked in to prove it.

Eighty at G2DC was mainly a case of again noticing how DX CW QSO's started on a clear channel are almost always lost under a mess of stations calling CQ and then working locals! Mornings have been better than evenings from this point of view; overall the haul adds up to VO1AW, VU2UX, ZC4CB, ZL3FZ, ZL4IE, ZL4BO, 8P6DR, 9V1LW, all W call areas and VE1-4.

For once in his life G3YMH deserted Top Band for an evening and tried 0001—0400z on Forty. The four hours ended with log entries for YU, W9, W2, UK3, K4, W8, HK4AJF, and (nearly!) HC1KP.

GM3JDR (Wick) reckons the bottom has dropped out of Forty till summer is over, for folk who have to keep decent hours, so he has retreated to Fifteen; however, his “parting shots” were, on CW, seventeen VK's, all different, XE1UI, VU2REG, JH1EYB, JH1APG, HI3PC, 8P6BU, EA8FJ, PY5CFX, W5ZIS/YVI, XE1CE, CM3LN, TA3AY, KV4AM, W7JLU, OX3LP, W6's, KV4CI, W7FT (Wyoming), ZL1SV, TI9J(!), W7SF, 9H1BP, 8P6DR and all W call areas.

Next G3YDX (Newquay) who stuck to 40/80m. On Eighty, CW

gave G6ZY/CN/M, ZL's, VK3MR by short path, VK3APN 'other way round, YN1CW, and 9H1's. SSB came up with CO2FA, EA6BN, EA6BR, EA8EZ, EP2TW, FM7WE, HV3SJ, KP4AN, PZ1CU, TA3GB, WA6EGL/TF, W51LR/TF, VP2GBG, VP2VI, YV1KZ, ZB2A, ZB2BD, ZB2CC, ZC41K, ZD8AY, 4U1ITU, VE3MR/4X, 4X4DK, 8P6AJ, 8P6CX, WA4OVP/8R1 and 9H1BX. As for 7 MHz, we find SSB yielding 9Y4KR and CW HV3SJ, OX3LP, VK2RA, VK2QL, VK2VN, VK3APN, VK3MR, VK6HD, VK7GK, VS6CH and PY7PO.

The HF Bands

As a tailpiece last month we mentioned the FCC proposals to alter the U.S. Phone Bands. Something completely overlooked then was that the proposal to use 28150-28250 kHz on Ten as a Novice CW allocation cuts right across the world-approach to Ten-metre beacons, both our own European ones and indeed the proposed VE beacon as well.

Twenty

G2DC finds the early-morning VK/ZL path is still doing its stuff around 0800, albeit there has been a general falling-off in the DX potential of the band, not to mention a horrid noise which seeps through and makes operating all but impossible, also a T5 thing signing DBZ3 and ruining the CW end as well. However, the trusty bug was used to raise KX6DC, VP7DC, VS6BU, VS6BC, VU2ON, all W and VE districts, VK2-8, ZL1-4, 3B8CR, 8P6DR and 8P6BU.

For G3NOF (Yeovil) Twenty was the best DX band, as ever, and Don's SSB connected with CR4BC, CT2AK, ET3DS, FR7ZX, HI8LA, JY1, JY1/B, KH6HJF, KJ6CF, KL7AP, KL7CVX, KL7EEY, KL7EKO, KL7GKZ, KL7HDB, KL7MF, TR8MC, VK's, ZD7BB, ZL's including ZL4OL/A (Chatham Is.), 4S7AB, 5Z4KZ, 7Q7BC and 9Q5CO.

Now to G3DCS (Ipswich), on CW with W's, VE's, VO, 3B8CR, 9J2WR, TA1TS, 8P6DR, YO8AHL and 6Y5LT, SSB being used for UK2FAD and JW7UH.

After a long silence a familiar handwriting re-appears in the pile, that of G3UOL (Coventry) who has been forcibly silenced from the

bands for two years awaiting permission to put up a "reasonable aerial"—Bill is now operational once again, 14 MHz only for the moment, with a dipole at 150 feet through about 100 feet of feeder—which can't be much of a help. The K.W. Viceroys at the bottom of the feeder has rung the bell with CE6EZ, CR4AY, EP2FB, FG7XL, FP8CT, PJ9JR, PY's in various contest-prefix guises, PZ2AC, VP2GCF, VP7APS, VP9's, YV's, ZP5JX and ZP5KA, 5H3MV, 5Z4MO, 8R1U and 9Y4VP, for a couple of all-time new ones and a good start to renewed activity.

There are no less than *four* letters in from W6AM (Long Beach), thanks to the mail hold-up. Looking at the latest list, one notes that Don seemed to have concentrated on CW, putting his usual 599 on Twenty into receivers at W9IGW/CEO, VP8JV, DU1BP, 5W1AR, GC2LU and OD5EJ. On a different tack, Don talks about TVI as it hits the W's. Mrs. W6AM—who is, incidentally, W6MA in her own right—has a colour TV on which she can look at 15 TV stations with no interference, except their Channel 2, when W6AM operates 14 MHz. This was cured by a stub on the final, which has not been touched in twenty years and still does the TVI trick. On the 15-metre PA, there is a stub to cure QRM to aircraft from a harmonic—this one was not even trimmed to the frequency! All the finals are wide open—"haywire" is the W6AM description—and *nothing after the VFO's is screened at all*; there are four VFO's and six finals, any VFO to drive any PA at the kilowatt level. Actually, in the radio room is another TV set, which is running as Don is operating, on three feet of wire as an aerial, with no TVI. What a difference, compared with the G situation! The prime reason, one would think, is that with their 117-volt AC supply, the TV sets are transformer-driven whereas ours are all AC/DC on 240 volts. Certainly the G3KFE shack TV set—a 1945 vintage transformer powered Channel 1 box—is far happier than the modern ones.

G3ZEM (Hartlepool) has only been on Twenty twice during the month. The first session, one Sunday afternoon, resulted in bookings with VK4JS/M, VU2ZJD,

JA8EFI, KC6RK, ZL3GM and several JA's. The second was during the *CQ WPX SSB* shindig, and this turned up ET3ZU, 4X4's, 9C9WB, EP2FB, 4U1ITU, OG2A, KR6JX, XW8DK, VK2APK, EP2DX, 5Z4ML, ZS2A, KL7BZO, ZB2A, PJ9JR, KP4AST, VP2LY, HI3XAM, EL2CH, VP2VAG, TI2CF, ZL4BO, 3A2GE, 3V8AH, ZC4SS, KS6DH, ZL1MK, FM3YXH and a horde of W's, PV's, PX's, PW's, PY's, JA's and suchlike calls.

Coming back to the rhubarb in this piece last time out, G3ZAY (Petts Wood) quite rightly points out that in the open DX pile-up it is mainly the job of the *DX* station to control the pack, and cites cases to prove his point. Fair enough, in the free-for-all type of affair, but our discussion was more on the *DX-Net* type of operation, where there is much that can be described as deliberate interference to legitimate net working, and resulting hot tempers and words. Martin lists PX1MB, PW1MHB, PW2CAB, YA1QW, VP2LG, VP2MY/2A, VP2VAA, KZ5EE, FP8CT, IC1PUG, VP8HZ and ZD8AY, with gotaways HW6KAW, KC6RK, JC9AA, JY9AB, ST2SA, 7Z3AB and YK1AA.

Twenty for G2HKU meant ZL1VN, ZL2FM, ZL3SE, ZL3NC and EA8HH, all around 0700, on his morning sessions with the ZL's. Ted, like your conductor, has the outboard VFO facility on his KW-2000—his is the single 6146 version—and finds the split-frequency facility very handy indeed. As a sideline, he has been brushing-up his CW, and has a VERON 25 w.p.m. certificate and a Mercury 30 w.p.m. one to prove it, although at that sort of lick, writing it all down is far and away the biggest problem unless one can take it on a typewriter.

Contest Result

Thanks to W1WY, we have to hand the results of the 1970 *CQ WPX SSB Contest*; the single-operator all-band winner was PJ9JR, with GC3UML honourably taking third place. Of the single-band entries one notes G3NLY third on Forty, and in the multi-operator single-transmitter category GD3TXF fourth, followed closely

into fifth place by G3WYX. Congratulations to all of them in their efforts.

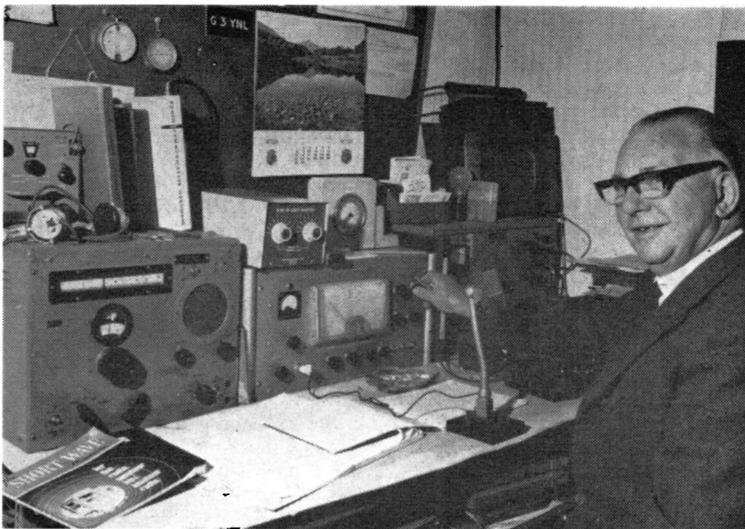
Ten and Fifteen

Thanks to the avalanche of mail that descended on us this time, some compression was—to put it mildly—essential, and as these two bands seem to have been a bit scratchy on the whole, they are being lumped together.

G2DC says that Fifteen has been much as would have been expected, saving that its closing time has been somewhat erratic; but a swing of the beam to the S/W when the band has shut to the U.S. has often yielded South America at workable strength. Ten, on the other hand, has definitely shown signs of deterioration, closing early, and with the morning VK opening peaking at 1100z, after which there has been very deep QSB to fight. In QSO terms, CW on Fifteen gave EP2DX, EP2FB, KR8HK (S8 on 10 watts), VK's, PY8MG, CE2DO, OA4MV, VU2FC, VS6BL, VP7DX, VP9BL, VP8CW, ZD5X, ZE3JO, ZL4BO, 4S7DA, 7Q7AA, 7Q7BC, 8P6DR, 3B8CR, all W call areas and all VE/JA districts. Ten provided a thing calling itself "AC8J" (which fiddled with the Tx and then vanished when challenged), MP4BIO, MP4BHM, VK's, CR7CN, UK9OAD, UV9PS, UV9UD, UA0AN, UJ8AW, UH8CS, VR5LT, XW8BP, 4S7AB, 3B8CR, 7Q7AA, 7Q7BC, 9J2XZ and all W/VE call areas.

Only a few SSB QSO's were reported by G3NOF, including CT2BB, I1BGJ/ID1, I1BUP/ID1 (both on Tremiti Is.), JA's, VP2LY and W's. Ten has become distinctly unstable as compared with early March, when all W call areas could be worked; the late-afternoon path to Africa has probably been the star turn and ZS1KZ has been worked most days. Others included EA9EJ (Spanish Sahara), HK0BKK, 5B4IS, ZS's, W's, 7Q7RM, 9J2FS and 9J2TF.

For G3DCS both bands have been productive of entertainment. Enver put up a cunning four-element vertical Yagi, aimed over the Pole, the whole contraption dangling from the long-wire—the first QSO gave S9 from PX6FI, the second a W2 also S9, the loudest signal was an



About four years ago, Frederick Price, a textile chemist and an inventor, of 32 St. Hilda's Road, Harrogate, Yorkshire, found himself getting out of his depth with his younger son's conversation about radio—so he decided to study for the R.A.E. and become at least a licensed amateur, his son now being a professional. Thus was G3YNL brought into being, with a Morse capability of 16-18 w.p.m. but not yet up to his son's 25-speeds.

EA, and after the second QSO there was just a silence in response to CQ's—something wrong somewhere? Enver heard JY2, a local girl, and was appalled at the ill-mannered butting-in which interrupted her QSO's. Turning to the log, G3DCS shows CW on Fifteen with W's and PX6FI, CW on Ten with W's assorted, and Sideband on Ten with 9J2PV, CR6LF, OD5GQ, 4X4NJ, 4Z4JT, EA8GZ and ZS1WS.

G2DF (Warrington) is primarily a Top Band man, one feels, as he finds work gets in the way of any DX'ing during the day; one suspects Fred is thinking seriously about the old adage that "if work interferes with radio—give up work!" However, a later letter notes that a new prefix was hooked on Fifteen on March 16, in the shape of 8X8AA.

As indicated elsewhere, GM3JDR reckons to have cleaned out Forty and has returned to his old love 15 metres. Only a short period has elapsed between starting operations and his report, but so far CW has produced VP8KF and SSB EL2CH, ZB2A, ZB2BV, VU2IRA, FG7TI /FS7, YV1YC, 3V8BB, all JA call groups, and MP4TDT, which seems a fair start.

G3MBL (North London) still sticks to his AM on Ten and had both-way-AM contacts with 5B4Z

and OD5CX around noon, with ET3BS missed a bit earlier.

An escapee is also recorded by G3ZAY, who was mortified to lose KR6IL, but worked as consolation prizes KG6SW (Saipan), EA9AQ, YN8AJC, 9C9WB, VK9FH, A2CAH, 5VZWT, HM1AQ and HI8LA.

A new reporter to this piece is G3ZXZ (Wakefield) who has a K.W. Vanguard at 50 watts to a dipole on Fifteen, receiving on a Trio JR-500SE. So far, 21 MHz operations have yielded CW contacts with 9J2PV, 9J2RA, PY1DDI, PY2BKS, CR6JA, CR7EY, ZC4BP, LU9FAN, YV5AHN, HV3SJ, ZS5UB, ZE1BL, 7Q7AA, UA0YT, JA's, all W call areas, and shoals of assorted European and UA stuff. A very promising start, and we hope to hear more.

Another one of the many after JY was G3XAP, who was listening from Stowmarket after a session on Forty and before changing to Fifteen, when he heard JY9AA at 599, obviously a YL. After about ten attempts using an ATU and the 7 MHz G/P (on Twenty!) it was no-go—so at 0030z out went Phil, armed with coil and capacitor under one arm and SWR bridge in t'other, and builds an ATU out on the grass with croc-clips, running back and

forth each time he wanted to make a measurement and change the tap. Finally it came down to 1 : 1 VSWR, with everything on the wet grass; back in the shack JY9AA was raised first call with 599 report, to please one DX'chaser no end. On Fifteen, operation on CW turned up VK's, LU8AHN, CO2BB, VK9SS, 9V1PV, MP4BHM, VU2REG, EA8ET, TY1ABE, JA1-6 and all W call areas. Sideband failed to give W7, but did all the other W call areas, also JA's, ZL4IF, EA6AS, 5N2AAN, ZB2BV, KP4DCR, KP4DKI, 9Y4HR, LU2DAW, WA6RJS/HK3 and 9C9WB.

W6AM worked the W9IGW/CEO lot on Juan Fernandez on both Ten and Fifteen SSB and CW, all 59 of course, along with PY0AD, 5W1AR, SV0WO, 7Q7AA, K4BZH /VP7, all on CW, during the month

under review. In a slightly different context this real Old-Timer showed in the 1971 ARRL DX Tests that he is still at the top of the pile, in no uncertain terms. For Phone, W6AM raised 138 countries for a score of 165,600 and on CW 172 countries from 545 QSO's, to make a final score of 281,220, with all the big W6 kilowatts right on the doorstep, so the speak, at that. That is *operating!*

Finally, if you hear or work W7TNA/MM or K7BGS/MM on any band 10-80m., CW or SSB, it will be the hydrofoil-stabilised sailing trimaran *Chamaru*, on a world cruise and about now in the South Atlantic, heading for Baltimore, Co. Cork, Eire. Her owner-skipper is Cdr. Charles M. Sturkey, U.S.N., ret'd., W7TNA of Seattle, who has his wife K7BGS with him. We are

asked to say that it would be much appreciated if any contacts with *Chamaru* could be reported to: The Hydrofoil & Multihull Society, 31 Riverside, Martham, Great Yarmouth, Norfolk. They have a direct interest in the craft but no means of communication with her. And we would like to hear, too.

Conclusion

There, good folk, you have it—as much as the Editorial space will allow, at least, as the axe has had to fall on some of the bits-and-pieces, QSL addresses, tabular matter and so on, for which a corner is normally found—but we'll get 'em in next time! Talking of next time, it is May 10 latest for your letters, as always addressed to CDXN, SHORT WAVE MAGAZINE, BUCKINGHAM. 73.

WORLD TELECOMMUNICATIONS DAY

Monday, May 17

This has become an annual event, conceived and sponsored by the I.T.U., Geneva, the object of which is to focus public interest and attention—in whatever manner may be practicable—on the importance of telecommunications in the world around us. At the moment of writing, we know of no special events to mark the occasion (a Monday is not a good day for Amateur Radio in this context). So perhaps we might mention that there are now some 16,400 radio amateurs licensed in the U.K., of whom about 50% are members of the RSGB. The first licence in the new G4/3 sequence has been issued, to G4AAA of St. Neots, Hunts., see "New QTH" page in this issue. The membership of our Amateur Radio charity organisation—the Radio Amateur Invalid & Bedfast Club—now stands at nearly 370, of whom no less than 140 are licensed U.K. amateurs in the category of being either blind or totally incapacitated.

BROADS HOLIDAYS /M

Readers who have it in mind to hire a cruiser for a holiday on the Norfolk Broads—with their miles and miles of open water and many interesting places to visit—and also having a predilection for mobile working under no-so-usual conditions may be interested to know that going /M on the Broads is not only easily possible but also very enjoyable from the Amateur Radio point of view. All you need is a straight mobile licence (which covers operation on *inland* waterways), the gear and the agreement of the boat-yard to fit it up; this permission is usually readily forthcoming so long as you don't want to drive screws into varnished wood-work or use fierce clamping—neither of which should anyway be necessary with the normal /M rig out of the car. Most modern Broads cruisers have a hefty 12v. power supply system—with alternator charging off the main engine, into one set of batteries for starting and the other for boat services—

and are of GRP (fibre-glass) construction. This poses the only practical problem—how to get a good "earth" connection. Don't try taking a lead to the prop-shaft main bearing! The easiest way to do it is to hang a copper plate over the side (or some such large-area earth mat), taking care not to get the lead tangled round the prop! It is probably not too much to suggest that with a KW-2000A and a Joystick the "world can be worked", as the saying is, from a Broads cruiser swinging on its mooring weight in the peace of South Walsham Broad. (Of course, the XYL might have different ideas about dragging Amateur Radio into this sort of a holiday!) We would be glad to have reports, with photographs, from those who try this way of going mobile.

IF YOU WANT

To be sure of having the *Magazine* regularly and on time, see the bookstall manager of your nearest branch of W. H. Smith's. And if your round-the-corner newsagent complains, as many of them do, that he "can't get copies of this *Magazine*", tell him that either he can order direct on us (Circulation Dept., Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1) or get whatever copies he wants through his nearest W. H. Smith wholesale department. For years, we have been struggling with the problem of local distribution—many more readers wanting the *Magazine* than could get it, because they've not tried their nearest branch of W. H. Smith.

SMALL ADVERTISING LEVEL RESTORED

We are glad to be able to draw readers' attention to the fact that—after the disastrous postal stoppage—the flow of notices for our Small Advertisement columns is getting back to normal. It is quite usual for £100's worth of gear to change hands through an advertisement costing as little as 75p. For anything you may want to buy, sell or exchange you cannot do better than try our Readers' Small Advertisement section—see pp.181-188 in this issue.

• • • **SWL** • • •

SHORT WAVE LISTENER
FEATURE

NOTES ON HOTTING UP THE RECEIVER —
OUR NEW ENTRANTS — MORE ABOUT GETTING
HOLD OF MORSE — ODD STATIONS
HEARD — COMMENTS AND QUERIES —
HPX POSITIONS TO DATE

By Justin Cooper

IT would rather seem as though the end of the postal strike produced one of the biggest mass starts in history of this piece, with all our correspondents suddenly realising they had next to no time to catch the deadline. Result—a large body of panting SWL's!

Perhaps now would be as good a time as any to discuss modifications and improvements to a station receiver. Even the chap with an HRO-500 or Racal RA-17 can mould it a little nearer the heart's desire, since *any* receiver sold on the market-place in numbers is of necessity a compromise.

Considering the usual variety of receiver with an IF around 450-460 kHz and no crystal filter (or maybe just an SSB filter) as our typical example, let us consider what can be done. In the first place, a Q-Multiplier, either valve or transistor, could be added. This will do much to sharpen-up the IF response for CW and for SSB under difficult conditions. Such a unit could be built to any one of several circuits picked out from such as the *Radio Communication Handbook* or the *Amateur Radio Circuits Book*. The BFO injection is probably, unless the receiver has a product detector, a bit on the low side, and the coupling capacitor can be increased as much as it will stand without upsetting the BFO stability; or, if this is not good enough, it may be injected a stage earlier in the IF amplifier, so as to take advantage of the IF amplifier gain.

All this being done, it will probably be found the drift is a bit too high for comfort. For this there are several measures which may be taken. First, make sure there is a way for air to flow through the case—it is wise to remember what many case designers forget, which is that heat rises. A few well-sited holes in the chassis will do much to get moving the hot air trapped under an inverted-dish chassis; it can then be encouraged a bit more by making sure there is a way in on the underside of the cabinet and a way out of the top—decorative louvres on the side of a cabinet are not much use if no air can get underneath the chassis and then up and away!

Those annoying variations in frequency, when the mains-voltage changes slightly, can be tackled—if rapid, by fitting a stabilising circuit to the HT supply, culled once again from the books already mentioned; if they are slow, taking about 30 secs. to move, then drifting back exactly to where they started from, suspect

the *heater* line, which can similarly be stabilised if a bit of thought is given to the matter.

More selectivity in the *AF* stages is a useful thing; for SSB one can use a suitable bandpass AF filter on the lines of the "Torofil," which has been in recent *ARRL Handbook* issues—it makes SSB sound a bit unnatural but much easier to copy. For CW, and for rejecting heterodyne whistles on SSB, one can use the "Selectoject," versions of which have appeared in various books and in the *Magazine*—a current design is in recent editions of the *ARRL Handbook* in transistor form, while older ones have a valved circuit. Both are good, perform the same function and very useful gadgets result from building them.

An ATU or a matched aerial goes without saying. Many SWL's seem to be a bit hazy over the use and abuse of preselection or converters. A quick but good test to see if your receiver needs any more front-end gain is to put resistor, of whatever value of input impedance the receiver should have, across the aerial and earth terminal, wind up all gains to maximum, switch on the BFO and centre it, and listen to the sharsh on speaker or in headphones. Now, tweak the "aerial trimmer" control (or the trimmer which covers the input tuned circuit) and notice whether the noise ("sharsh") peaks up as you turn it through resonance. Repeat on each band. If it *does* peak up, then no more preselector or front-end gain is needed to receive anything you are likely to want—and if the receiver has more than one RF stage it is certain that an attenuator in the aerial feeder to the receiver, adjustable from, say, 0-30 dB will help to reduce the noise level on the LF bands due to big signal driving the mixer into non-linearity and increased noise, blotting out many weak signals. Again a suitable circuit can be found in the *ARRL Handbook*.

The New Entry

T. George is about four miles from *Lands End*, and is in a valley, screened to all except the South-East; a Trio 9R-59DE is fed either from 220 feet of wire, or, on the HF bands, dipoles, those for 10 and 15 metres being rotatable (quite an elaborate set-up). Although he has only been an SWL for a year, R.A.E. is being taken during May, and it is hoped the full ticket will be achieved by September.

Lots of people don't believe that the needful 200

prefixes for a first entry to HPX can be collected up in one weekend. However, just to prove, once again that it can be done, along comes *T. Grimbleby (R.A.F., Digby)* to say that his CW list was made in this way, using a Racal RA-17 and a long-wire aerial, the Rx borrowed for the moment until a receiver of his own can be located and acquired.

S. Wessely (Sheffield) wishes there were such a thing as a Russian callbook—so, often, does your conductor! Simon mentions 4M7AV in Venezuela, the use of IR0 as a prefix for Rome, and OR4CR/AP2, which last is a call used by various operators from the Belgian Red Cross effort in East Pakistan. Finally, one hopes with tongue in cheek, he wants to know whether he can count the “other end,” even though he cannot hear it, of a two-way QSO. Nothing doing—you must hear 'em and clearly identify them before putting them in the list.

From *W. M. Bell (Bristol)* comes a long and interesting letter and a prefix list. Sad to say, from an opening offer of 245 prefixes, only 215 survive, partly, one would think, due to errors of transcription. Downstairs, the family colour TV set has a very potent line-output stage, in terms of its radiation into the SWL receiver; but it has compensating advantages in that the VHF range tuning is continuous, giving in the process coverage of Two and the area around it. However, the family are not keen on having their TV tweaked out of its normal spot and so it is “barred”—never mind, you can always build a converter!

J. V. Parker (Newcastle-on-Tyne) has been a SWL since last autumn, using a B.40 plus preselector to a vertical aerial. Crystals are awaited, and when they come to hand the preselector will be transformed into a converter. However, our correspondent is a bit of a pessimist—he reckons it is always *his* posted orders for bits that get snarled up in postal strikes, or lost by the firm, or something—one knows the feeling.

Since 1962, *S. Emlyn-Jones (Tunbridge Wells)* has held his R.A.E. pass slip, but for various reasons it has not been turned into a call sign. The gear is a 52 Set, somewhat battered but still bringing the signals in, from 120 feet of wire. A good catch hidden in the list was C31AH, from that rarest of European countries, Andorra.

H. Goodwin (Streetly) has one “stinker” in his list in a station calling himself X4MA/MM, who claimed to be “operating under International Law,” and to be radiating one hundred kilowatts, no less. Obviously a pirate, but with a screw loose as well, poor chap!

The SZ prefix used by Greece as a commemoration has puzzled quite a few folk, among them *P. Reeves of Burton-on-Trent*. The rest of Philip's questions are covered in the new set of HPX Rules, published with the piece last time round—see p.46, March issue.

J. Woods (Woodbridge, Suffolk) has a Trio 9R-59DS, to which can be coupled one of three available aerials, namely a Mosley RD5 trap dipole, an 80m. dipole and a sixty-six footer, end fed.

Among The Regulars

Now, we turn from the newcomers, to those who are termed here the “regulars.” One of the most consistent of these is *N. Hembrey (Northiam)* who has kept up his interest for as long as your scribe can remember. His

present interest is working for awards.

K. Plumridge (Southampton) has put in an entry for the 1971 list, mainly so that he can compare his ability in 1971 with what he achieved four years ago, when instead of the present JR-500SE he had an HRO. It should be an interesting comparison, as the two periods are on either side of the sunspot peak, and the number of hours devoted to operating each week is usually pretty comparable.

Fifteen as a happy hunting-ground for Slow Morse is a thought that had not occurred to your conductor; but *S. Rawlings (Twyford)* gets most of his over-the-air Morse practice by listening to the American Novice section of the band (21.10 to 21.25 MHz, CW only) which of course is well filled with them during the afternoon and early evening hours, conducting real QSO's.

From *Wigan, A. Mercer* comes in to say a word of thanks to G2HFC, who has lent Alan a converter for 21 MHz, which seems really to have been pulling in the DX, enough indeed to encourage Alan to put in an initial entry to HPX.

The hard part of learning Morse is the “sticking at it” with regular practice, says *M. Fisher (Bradford 9)*. Mike finds that his recorder has to play him over some Morse regularly, or else he not only fails to progress, but actually slips back quite rapidly. True enough in the initial stages, but less so once you are over the “hump” around 8 w.p.m.

Often we are asked whether we will allow the /P stations to create another prefix series, as with the /MM chaps. One would not think so, although this is a little difficult, in that there are some exceptions to the rule already, as where the suffix on the call counts for something else—exceptions already noted in the HPX Rules last published in the March issue.

K. Kyezor (Perivale) is having a change of gear and aerials for this year, turning to a Trio 310, plus a pre-selector and ATU, which will be coupled to a Joystick in preference to the old indoor wire.

M. Gawthorpe (Hull) has been making hay while the sun shone, as he was coming up to—and by the time this is read will be right into—his O-Level studies. This, of

NEW HPX LADDER

(Starting January 1, 1970)

SWL	PREFIXES	SWL	PREFIXES
PHONE ONLY		PHONE ONLY	
P. Goff (Towcester)	418	P. Reeves (Burton-on-Trent)	232
T. George (Penzance)	343	S. Rawlings (Twyford)	228
Miss L. Hyder (Southampton)	332	Rev. L. J. Turner (Gornal)	218
K. Plumridge (Southampton)	283	W. M. Bell (Bristol)	216
S. Wessely (Sheffield)	274	H. R. Goodwin (Streetly)	212
J. Parker (Newcastle-on-Tyne)	271	M. Gawthorpe (Hull)	210
		S. Emlyn-Jones (Tunbridge Wells)	206
		T. J. Thornton (Wargrave)	206

Listings include only recent claims. Starting score 200. This is the first appearance of this Table. Rules as for HPX, given p.46 March. DX Zone Map and latest Prefix List 85p post free from Publications Dept., Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

course, means that Mick will not get to the receiver much, if at all. But there is no doubt that the school-work is more important than a hobby at his time in life.

Practice and more practice—Morse, that is—cuts into the time of *G. Dover (Nottingham)*, who has got to within shooting distance of the target. This is the way, and there can be no doubt that the pleasure of a full call is well worth the effort in getting the Morse.

* * *

The locals have been wondering what had become of *D. J. Browning (Bishops Stortford)* of late, since he had not been seen at Club meetings. However, all is now clear—it is those O-Levels that are keeping the Browning nose to the grindstone.

Eltham is the home of one of the keen types, namely *R. A. Treacher*, who seems to hear most of what the bands have to offer. Bob logged 5Z4LW signing 5HMOG from an East African Airways jet, over ST-land, and wants to know if it can be counted—sorry, but the answer must be No!

One's idea of what constitutes DX is a very personal thing. *J. Spearing (Orpington)* has an amusing example of this to offer; he heard UQ9RK come up on Fifteen one day, to be called by a gaggle of W's, among whom were to be noted XT2AA and 6Y5GS!

The *Hyder* family of *Southampton* have been in the wars one way and another. Dad has nothing to offer as he had landed in hospital with appendicitis, while daughter Lynne, having left school and started in a bank, now finds she is working just as hard in the evenings for banking exams—but this problem should resolve itself when the exams are over, at least for a while. That leaves son, *M. T. Hyder*, who carries the banner with a couple of new ones to add to his score, picked up in the intervals of school work.

Much to his surprise, *J. Lee (Nuneaton)* passed R.A.E., although his pass-slip was hung up in the mails for a long time. However, the GPO must have known how he felt, because the Morse application-form was asked for on a Monday and received by the Wednesday morning delivery; so by the time we are in print, Jim may be happily banging away with a nice new G4/3 callsign.

After his old home in *Lincoln*, *P. Harris* finds Kings-ton-on-Thames quite awful, with no contact with the locals, no copy of SHORT WAVE MAGAZINE at his time of writing, and, worst of all, no gear. However, there is no doubt it will all come out in the wash; and to get in contact with the locals, one would think a look in the Penguin Lounge would help, plus a call to G3GVU, who can be reached on *Kingston 2801!*

Rev. L. J. Turner is now settled in *Dudley*, and finds it better than he had thought. His old prefix score is scratched with the change to the Annual listings, but, in spite of more restricted listening times enough has been done to get back into the Tables—good!

Still with his pair of transistor portables, *J. Fitzgerald (Gt. Missenden)* was eagerly looking forward to the *CQ WW WPX Contest* and the Easter holidays, when he was hoping to boost his score up a little more. However, the rate of rise in HPX has slowed noticeably of late, the main reason being that John spends much time on

HPX LADDER

(All-Time post war)

SWL	PREFIXES	SWL	PREFIXES
PHONE ONLY		PHONE ONLY	
B. J. Gilbert (Tonbridge)	1226	M. Williams (Sleaford)	585
S. Foster (Lincoln)	1194	T. Rootsey (Ilford)	576
A. W. Nielson (Glasgow)	1071	A. Merser (Wigan)	574
J. Singleton (Hull)	1063	G. Foster (Preston)	572
R. Nicholls (Narborough)	923	G. Proud (Letterston)	567
G. Dover (Nottingham)	847	K. Kyezor (Perivale)	565
G. S. Taylor (Rugeley)	828	P. Harris (Lincoln)	564
J. Fitzgerald (Gt. Missenden)	828	E. Parker (Hove)	562
R. Shilvock (Lye)	807	N. Askew (Coventry)	551
N. Henbrey (Northiam)	797	P. Butterfield	
M. T. Hyder (Southampton)	796	(Sharlston Common)	542
W. Moncrieff (Hampton)	772	Mrs. S. Singleton (Hull)	527
R. A. Treacher (Eltham)	764	J. Lee (Nuneaton)	525
J. G. Ayton (Sunderland)	746	J. Spearing (Orpington)	522
M. Fisher (Bradford, 9)	742	A. Judge (Bishops Stortford)	520
I. Brown (Newtownabbey)	741	D. J. Browning	
R. Carter (Blackburn)	739	(Bishops Stortford)	517
J. P. Scragg (Stockport)	705	C. J. Deacon (East Ham)	509
D. Rodgers (Bolton)	690	B. Cushing (Kenley)	508
M. J. Quintin		J. Dunnett (Luton)	504
(Wotton-u-Edge)	690	R. Pepper (Bradford)	501
A. T. Cheesley			
(Kuala Lumpur)	687		
T. W. Hyder (Southampton)	676	A. Glass (Plymouth)	683
K. Plumridge		A. Vest (Durham)	656
(Southampton)	671	J. Dunnett (Luton)	619
H. M. Graham (Harefield)	663	H. Wright (Pontefract)	455
B. Hughes (Worcester)	653	G. Proud (Letterston)	442
H. Alford (Burnham-on-Sea)	640	G. Foster (Leyland)	391
D. Robinson		J. Halden (Newcastle. Staffs)	306
(Birmingham, 26)	631	J. Lee (Nuneaton)	255
L. W. Robinson		T. Grimbleby	
(Bury St. Edmunds)	620	(R.A.F., Digby)	218
P. L. King (Ryde I.o.W.)	601	D. Rodgers (Harwood)	206
G. W. Raven			
(London, S.E.13)	590		

Starting score, 500 for Phone, 200 for CW. Listings include only recent claims. Rules for HPX were given on p.46, March issue. The DX Zone Map and latest Prefix List, 85p post free from Publications Dept., 55 Victoria Street, London, S.W.1.

the WAB/HAB game, particularly to the net they have on Forty.

Another one who has a slower rate of gain is *A. Judge (Bishops Stortford)* who has spent most of his time listening on 80 and 160 to the locals, rather than in hunting DX. Tony has it in mind to add 21 and 28 MHz coverage to the station ere long, and when that is done, to get going on 144 MHz—a band on which there is plenty of local activity.

* * *

Now to *J. R. Cowan (Rochford)* who has some prize problems to offer this time. First-off, his CR-45 receiver hums like blazes on Eighty in the bedroom, but not, it seems, when used downstairs, right alongside the TV. An odd one this, especially as it does not occur on any other bands—but one would hazard a guess that the problem is connected either with the manner in which the receiver gets its signal earth, or alternatively the aerial-plus earth is at some length which accentuates the problem. For the rest, SWL Cowan has a couple of odd ones to offer. "V1AAH" heard on Ten one lunch-time, was claiming to be on Marion Island—which will no doubt startle ZS2MI no end! The other one was giving the call "HY5CE," again at lunch-time, but

this time on Fifteen. One would think both should be consigned to the waste-basket.

After having a good look, *I. Brown (Newtownabbey, Co. Antrim)* has given up his intention to use Dexion for his tower, and substituted scaffold-poles, for which he is now searching. Incidentally, Irwin is another to hear an aircraft using its own call in the amateur bands, this time 5XUVJ/AM—and again we have to turn it down. Sorry!

There is no doubt that a change of one's listening time is about the best way known of lifting a score that has run into the doldrums. This has been proved all over again by *G. Proud (Letterston)*, who has shifted from early evening to the period 2200 to 2300z, at which time Twenty is often pretty productive.

M. Williams (Sleaford) has a lot to sort out this month. First, U5ARTEK—quite OK and a well-known call who seems to have taken up active operating again. Maurice also notes from his logs hearing both YT2RCZ/MM and YU2RCZ/MM—for certain the same station using either prefix to choice. On a different tack, Maurice is still making great efforts with his R.A.E. and Morse, and showing signs of progress; this is good to hear, as Maurice is one of the few OT's who, realising the brain gets a trifle slower with age, accept it and are still determined to get a call. Nobody should be put off by age. One of the best R.A.E. aspirants J.C. can recall took the exam. and passed, then afterwards took a course, just to make sure he knew what it was all about—and is making steady progress with Morse, having by now retired and taken up a job which keeps him busier than ever. As if that were not enough, this particular "lad" spends all day on Fridays in the Technical College day-release call on Electronics!

Keeping a proper spirit of scientific disbelief is the attitude of *R. Shilcock (Lye)* who has just put up a halo for Two and is waiting for an opening—which event is what he refuses to believe in till he hears it!

Delving back into history has been amusing *N. Askew (Coventry)* who notes that Carson of the American A.T. & T., was the first person, in 1928, to use SSB for transmission of TV signals. This is a development from the much earlier published work of Western Electric, who, in 1915, put in an addition to Patent Number 102503 of that year, disclosing the proof that modulation of a carrier results in sidebands, and offering all the techniques to make use of that fact in the modern way. This patent, which is in essentials British Patent 111649 of 1917, was also due to Carson.

R. Pepper (Bradford) comes into the A-T-P-W list, with a score of 501. Robert mentions a good spell on the bands over March 6-7, when a contest was on and much DX was logged.

A. E. Glass (Plymouth) has changed his receiver again, this time going from the 9R-59DS back to an *Eddystone S.640*, which Bert reckons to be better for CW. (It was, in fact, one of the best post-war designs ever offered). And Bert should be pretty hot on CW—one notes such Top Band loggings as VS6DO, HK4DF and a ZC4, albeit it is getting to be a bit more of a struggle to find new all-time prefixes on the other bands.

CW is also taking up some of the time and interest of *T. Thornton (Wargrave)* who has already heard some 40 countries by this mode. However, Tim is always a

bit put off when some great S9 signal comes galumphing over his bit of S4 DX and squashes it out of all hope of salvage. But aren't we all? The answer to this one could well be that AGC be left on, particularly if the receiver is primarily designed for SSB; otherwise, one must disable the AGC and if possible add a Q-Multiplier on the IF side, to sharpen up the selectivity *before* the AGC take-off point and so stop its capture by unwanted signals in the pass-band.

Two months' sleep has been allowed to the receiver of *M. J. Marsden (Ilford)* because of O-Level studies; and what is more it has to go on sleeping for a bit longer, the only exception allowed being the local ragchews on Top Band.

Another CW operator coming on the HPX Ladder this time is *D. Rodgers (Harwood)* who, after topping his All-time Phone list up to all but 700, now starts on the CW climb with a first list of 216. Dennis has a fine site with a good take-off in all directions except East, where the ground rises to almost 1000 feet in half-a-mile.

J. Marchant (Sharnbrook) has returned to the fold to add a couple to his score; but it looks as if he will have to continue piling 'em up a bit before he can get into the A-T-P-W.

The Rest

Under this head are gathered the correspondents who only offered amendments to their scores, together with one or two late letters that were a bit too far adrift to take into the main script. The group includes: *E. Parker, Hove*; *E. W. Robinson, Bury St. Edmunds*; *R. Carter, Blackburn*; *H. Alford, Burnham-on-Sea*; *M. J. Quintin, Wotton-u-Edge*; *S. Foster, Lincoln*; *P. Goff, Towcester*; *G. W. Raven, London, S.E.13*; *J. G. Ayton, Sunderland*; *T. Rootsey, Ilford*; and *T. Vaughan Williams, Warwick*.

And The Coming R.A.E.

Our good wishes to all who will be taking this next R.A.E. If they have done their home-work they ought to get through no-trouble-at-all, perhaps with a Grade 1 pass, which means a distinction. But even a Grade 3 award is good enough for a licence—and there is still time to look again at the heading note on p.751 of the February issue of SHORT WAVE MAGAZINE. We hope to hear, during the next few months, of the success of many who follow the "SWL" feature which, over the years, has given inspiration to a great number of today's active amateurs, some of whom have become leaders in the field.

When you go in for the Exam., Take It Easy and don't allow your confidence to be shaken by a first reading through the Question Paper. There will be plenty of it that will have a familiar ring, when you've given yourself time to think.

Sign-Off

So, that's it once again—with one request: Do write on *one* side of the paper only! You have no idea what a tussle it can be checking through letters written on both sides of ordinary correspondence-size sheets! For next time, the deadline is **May 17, at latest**, addressed to "SWL," SHORT WAVE MAGAZINE, BUCKINGHAM.

VERSATILE SUB-MODULATOR

WITH SPEECH COMPRESSION— USING IC UNITS

A. H. DORMER, C.Eng., F.I.E.R.E. (G3DAH)

SPEECH tailoring and compression have long been recognised as adding considerably to the legibility of a phone signal at range as well as providing a safeguard against over-modulation on speech peaks. If the compression takes the form of an audio-derived AGC, as opposed to what has always seemed to the author the rather brute-force method of clipping the peaks of the speech waveform and then attempting to restore them—by means of a hefty filter at the same time eliminating the harmonics which must certainly be generated by this maltreatment—then a constant output level signal, compensated for variations in speech input, becomes available for further amplification and application to the PA. The apparatus to be described does just this, and by the addition of a simple two-stage voltage amplifier, provides outputs suitable for the generation of AM and NBFM signals on the two-metre and 70 cm. bands. There is, of course, no reason why these outputs should not be applied to transmitters on other bands also.

General Principles

The heart of the unit consists of two IC's, the Plessey SL630C microphone amplifier and the SL620 Vogad (Voice operated gain adjusting device, to give it its full title!). These are preceded by a small amplifier to produce some gain and to provide suitable matching for the high-output impedance type of microphone in common use, and followed by a two-stage valve amplifier, which is based on the series-gate modulator described in the *Radio Communication Handbook*, with appropriate

modifications. The block diagram in Fig. 1 shows the layout. A few words on the operation and characteristics of these two IC's may be useful.

SL630C: Some twenty-one transistors are incorporated in this device and it is not proposed to detail the exact function of each one of them. Let it suffice to say that, typically, the voltage gain is 40 dB with a 1 mV r.m.s. differential input and 46 dB with a single-ended input. With a 6v. supply, the maximum output voltage is 1.2v. r.m.s., which rises to 2.8v. with a 12v. supply. The input impedance is about 1K and the output impedance about 1.5 ohms. The gain control range is 100 dB. An external capacitor connected between pins 3 and 4 of the device controls the HF response. It can be shown that for a roll-off around 3.5 kHz, the value of the capacitor should be $0.022 \mu\text{F}$. The low-frequency response is controlled by the value of the input capacitor and by the time constant of the output circuit. With $\text{CR} = 2 \mu\text{F}$ and 300 ohms respectively, and an input capacitor of $0.047 \mu\text{F}$, the response is 6 dB down on 1 kHz at 200 Hz. Excessive input will negate the high frequency tailoring, and the frequency response becomes virtually flat up to 10 kHz or so. By suitable additional circuitry, the SL630C can be used as a straight microphone amplifier or as a headphone amplifier; for those interested in this application Fig. 2 shows the arrangement.

SL620: The SL620 is the audio version of the SL621 which may be used in SSB receivers specifically to generate an audio-derived AGC voltage. It will maintain an output voltage between 70 mV and 87 mV for an input variation of 35 dB. A one-second "hold" period is provided which prevents any increase in background noise during pauses in speech. Briefly, it consists of an input amplifier and two detectors having long and short time-constants respectively, the one looking after the high-level fast transients and the other establishing the AGC level. Peaks are effectively limited by the fast AGC action, while the long time-constant detector "remembers" the pre-peak level. The time-constants

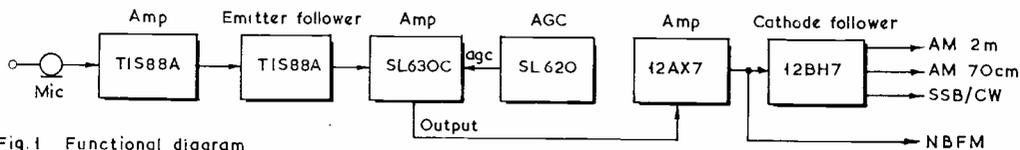
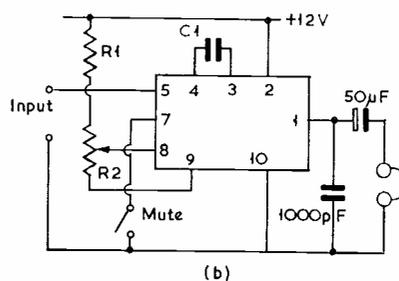
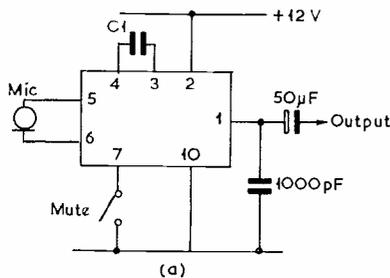


Fig. 1 Functional diagram



C1 value to suit desired frequency response
R1 and R2 chosen to give desired gain control range
Input impedance at pin 8 = 3.6K Ω

Fig. 2 SL630C as (a) Microphone amplifier and (b) Headphone amplifier

of the circuits providing this action are connected externally to the IC, as shown in the circuit diagram in Fig. 3, opposite.

Characteristics are briefly as follows: Input for 0.65v. DC output = 70 mV. Input for 1.5v. DC output = 87 mV. Fast-rise time (attack time) = 20 msec. Hold time = 1 sec. Maximum output voltage = 2v. Input resistance = 1.4K and output resistance = 40 ohms. The supply voltage must not exceed 6v.

Circuit

Fig. 3 shows the complete circuit used in this particular application, and is so straightforward as to require little comment. However, the following observations may be of help to intending users.

The pre-amplifier uses TIS88A's, which have a very good noise figure. Other types may be used as long as the gain of the amplifier is held at about ten times. Excessive gain here will degrade the noise performance, risk RF feedback and will adversely affect the HF performance. Some cost saving may be achieved by deleting the emitter follower, which in this case merely serves to give an impedance match, and transformer coupling the amplifier to the input of the SL630C. This also has the advantage of speeding up the attack-time by providing a differential input to the amplifier. The supply voltage to both the pre-amplifier and the IC's should be zener stabilised. Do *not* omit the 250 μ F capacitor across the supply as there is a risk of motor-boating, particularly if batteries are used. This component should be of the best possible quality and should have a very low resistance.

Although the AGC will start to operate with inputs as low as 4 mV, it may be found that the attack time at these very low levels will appear unduly long—in other words the device will not operate satisfactorily until several syllables have been enunciated. With the *Shure 201* microphone in use at G3DAH, the output on average speech was found to be around 3 mV, with peaks going higher than that, and this was insufficient to give reliable operation. Hence the need for the pre-amplifier. Other types of microphone may not require amplifiers, but may need matching to the low input impedance of the SL630C.

The valve amplifier has been in use for some time, and was based upon an idea suggested by G3BA, who uses the same sort of set-up. It is operated in conjunction with the KW-2000 transceiver, the cathode-follower output providing the DC and audio to screen-modulate the final 6146 in the transmitter, so giving AM from this essentially SSB transmitter, the transformer in the output of the first voltage amplifier having its secondary winding connected in series with the varicap diode across the KW-2000 VFO to give NBFM when the ITT mode is used. Although it has not been tried, it would seem feasible to apply this system to other transmitters having similar facilities. Note that the TIS88A and the SL630C operate from a 12v. rail, but that the SL620 is rated at 6v. only!

Setting-Up Procedure

As already mentioned, the frequency response and the attack and hold times of the IC's can be varied to suit the individual case, and it is well to do a frequency-

Table of Values

Fig. 3A. The Compressor-Amplifier

C1 = 250 μ F	R2 = 3,900 ohms
C2, C7,	R3 = 10,000 ohms
C11 = 50 μ F	R5 = 1K, variable
C3 = .05 μ F	R6 = 300 ohms
C4 = .047 μ F	R7 = 200 ohms
C5 = .0022 μ F	R8 = To suit zener
C6 = 2 μ F	diode used
C8 = 0.5 μ F	Z1 = 6v. zener
C9, C10 = 100 μ F	Tr1,
C12 = 250 μ F	Tr2 = TIS88A
R1, R4 = 0.5 megohm	

Notes: All fixed resistors are rated $\frac{1}{2}$ -watt and electrolytics are 12v. working.

Table of Values

Fig. 3B. The Sub-Modulator

C1, C5 = 100 μ F	R2, R4,
C2, C6 = 25 μ F, 12v. wkng.	R8, R9 = 100,000 ohms
C3, C7 = .005 μ F	R3, R7 = 1,000 ohms, 1w.
C4 = 16 μ F, 350v. wkng.	R5 = 20,000 ohms, 2w.
C8 = 0.1 μ F, 250v.	R6 = 47,000 ohms, $\frac{1}{2}$ w.
VR1 = 0.5 megohm	R10 = 1.5 megohm, $\frac{1}{2}$ w.
VR2 = 25K, 2w.	R11, R13 = 220,000 ohms, 1w.
	R12 = 100 ohms, $\frac{1}{2}$ w.
	T1 = 10 : 1 step-down
R1 = 4.7 megohm, $\frac{1}{2}$ w.	V1 = 12AX7
	V2 = 12BH7

Notes: Resistors R2, R9 are rated $\frac{1}{2}$ -watt and R4, R8 one watt. S7 is 4-pole 3-way Yaxley and S2 SPST toggle.

run at various input levels to ensure that the desired response is being attained. With the values shown the response is 6 dB down on 1 kHz at 200 Hz and 4.5 kHz.

Setting up the screen-grid modulation is rather more difficult unless it is done with an audio signal generator and an oscilloscope. Some sort of result *can* be obtained without these adjuncts, but to get the maximum *undistorted* modulation it is very desirable that the proper aids be used. No figures are given for the various voltage levels, as they will vary depending upon the transmitter used, but it is as well to remember that this form of efficiency modulation can *never* give 100% distortionless modulation—so don't push it too hard. It will also be found that the screen voltage will need to be reduced to about one half its normal value, thus reducing the output available from the transmitter. However, in the circumstances in which it is used by the writer, this is of no great significance, since the KW-2000 on 14 MHz gives ample output, even at this reduced level, to drive a transverter producing an output at two metres and thence to a linear amplifier with a pair of 4CX250B's. Of course, one does not have to use the circuit uniquely in this way—there are obvious variants.

Failing possession of a deviation meter, there are two simple methods for setting up the NBFM. One is to insert a 3 kHz tone at average speech level and look for the first pair of sidebands on either side of the carrier, using a selective receiver. The audio gain control should then be set at the position at which the second pair of sidebands just appears.

The other method is to make use of the Bessel

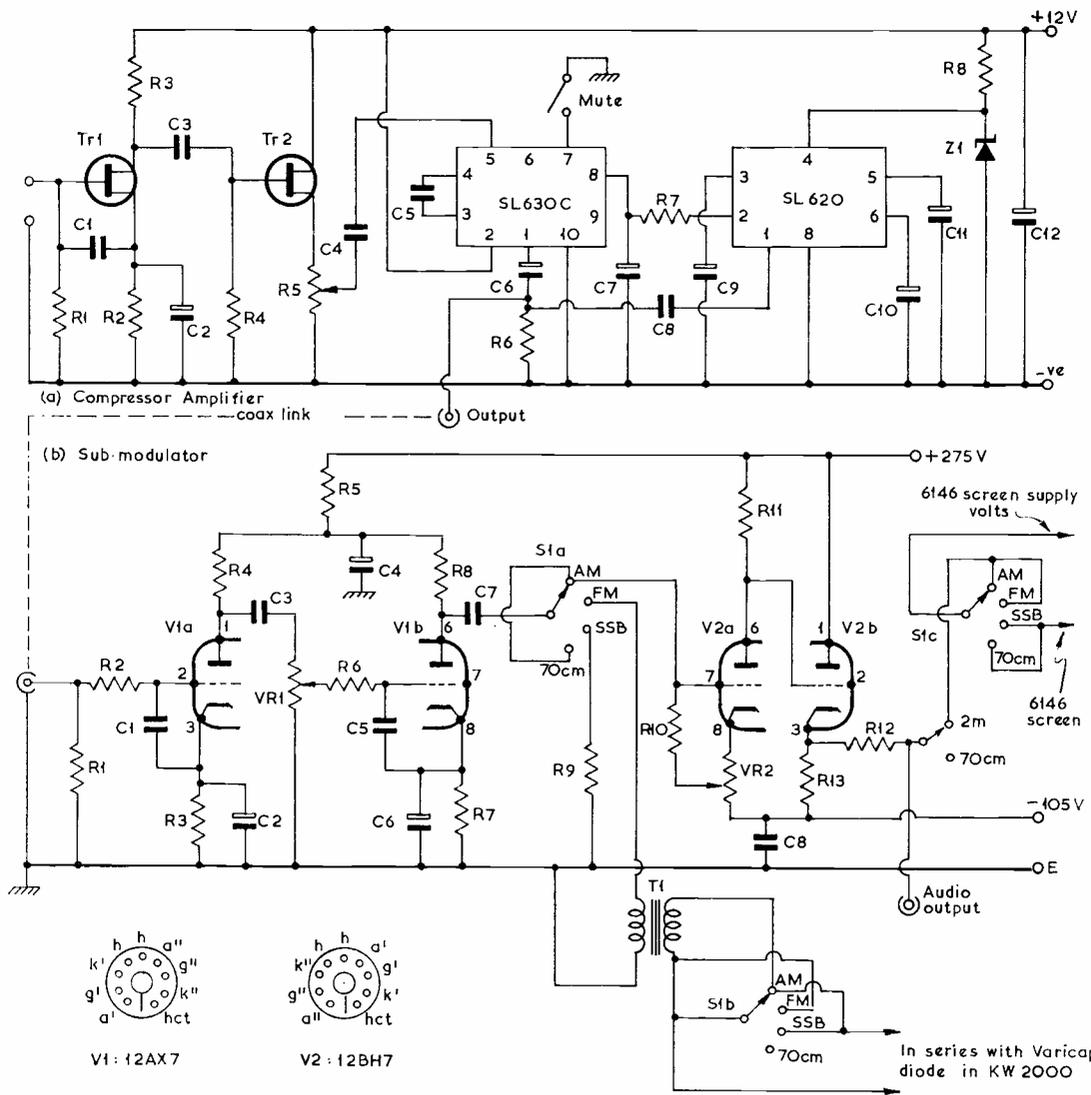


Fig. 3 COMPRESSOR/AMPLIFIER CIRCUIT DIAGRAM

M
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Function charts, which show that with 3 kHz audio and 3 kHz deviation limits, the carrier amplitude will reduce to zero at a Modulation Index of 2.4. If, therefore, an audio signal of 3/2.4 kHz, i.e., 1.25 kHz, is injected into the modulator, and the audio gain control advanced until the carrier, as observed on the S-meter of a selective receiver, reduces to zero, the setting is once again correct.

Construction

No details of the construction employed are given as this will largely be a matter of individual choice. In the writer's case, the TIS88A's and the IC's are made up on Veroboard in a separate box and the valve amplifier in a standard die-cast container, with coax cable con-

necting the two. The whole thing can be very compact, even including stabilised power supplies.

Standard components are used throughout, and although holders are used for the IC's, these are not strictly necessary, and they are rather difficult to get and fairly expensive when one can get them! Possible sources of supply for the IC's are the usual component stockists, or SDS (Portsmouth) Ltd., Halsea Industrial Estate, Portsmouth, Hants.

Although circuits have been published in the past showing the use of these IC's for compression purposes, they seem to have been taken directly from the manufacturers' data sheets which, in practice, are not always directly applicable to amateur use.

CHEAP GENERAL-COVERAGE RECEIVER

FURTHER NOTES AND CIRCUITRY ON THE MODERNISED R.1155

Part II

J. STEBBINGS

PICKING up the detail from p.98 of the April issue, where we were discussing the BFO section: the vacant compartment adjacent to the BFO was used to house the transistor audio amplifier. It was convenient to use the connector pins for the supply and speaker connections while the input was taken by screened lead from the headphone socket to the top of the box where

The first part of this article appeared on pp.94-99 of the April issue of SHORT WAVE MAGAZINE and should be read for continuity as there is much cross-reference between the two parts.—Editor.

a suitable hole already existed.

The rest of the assembly and wiring was gradually completed stage by stage towards the aerial input, using tagboards where convenient for mounting components. The only screened leads provided were from the anode of V5 (pin 7) to the headphone socket and audio amplifier, and from the cathode of V9 to the 100K preset pot. and the panel controls. The anodes of V9 (pins 1 and 6) were connected to tags 1 and 3 of IFT1 through an existing hole in the coil box near the gears. This kept the leads short and they did not appear to require screening.

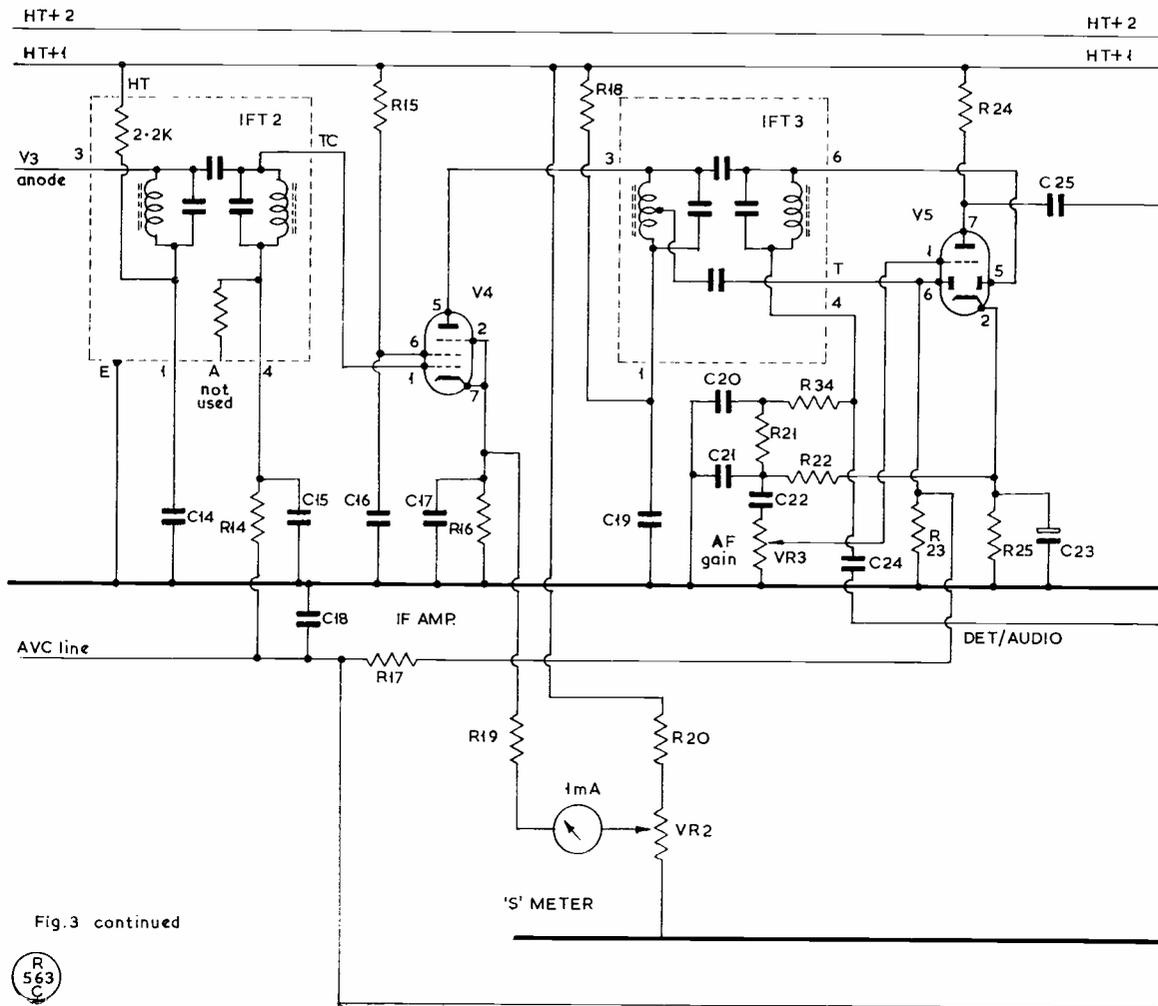


Fig.3 continued



First Tests

At this stage the work was checked and the signal and IF stages were aligned by means of a signal generator and the receiver's S-meter. A Class-D wavemeter also was found to be useful for accurate calibration. The IF stages were dealt with first, keeping the Q-multiplier switched on and the selectivity control just on the point of oscillation. The pre-set pot. had first been adjusted so that oscillation occurred near the end of the travel of the selectivity control.

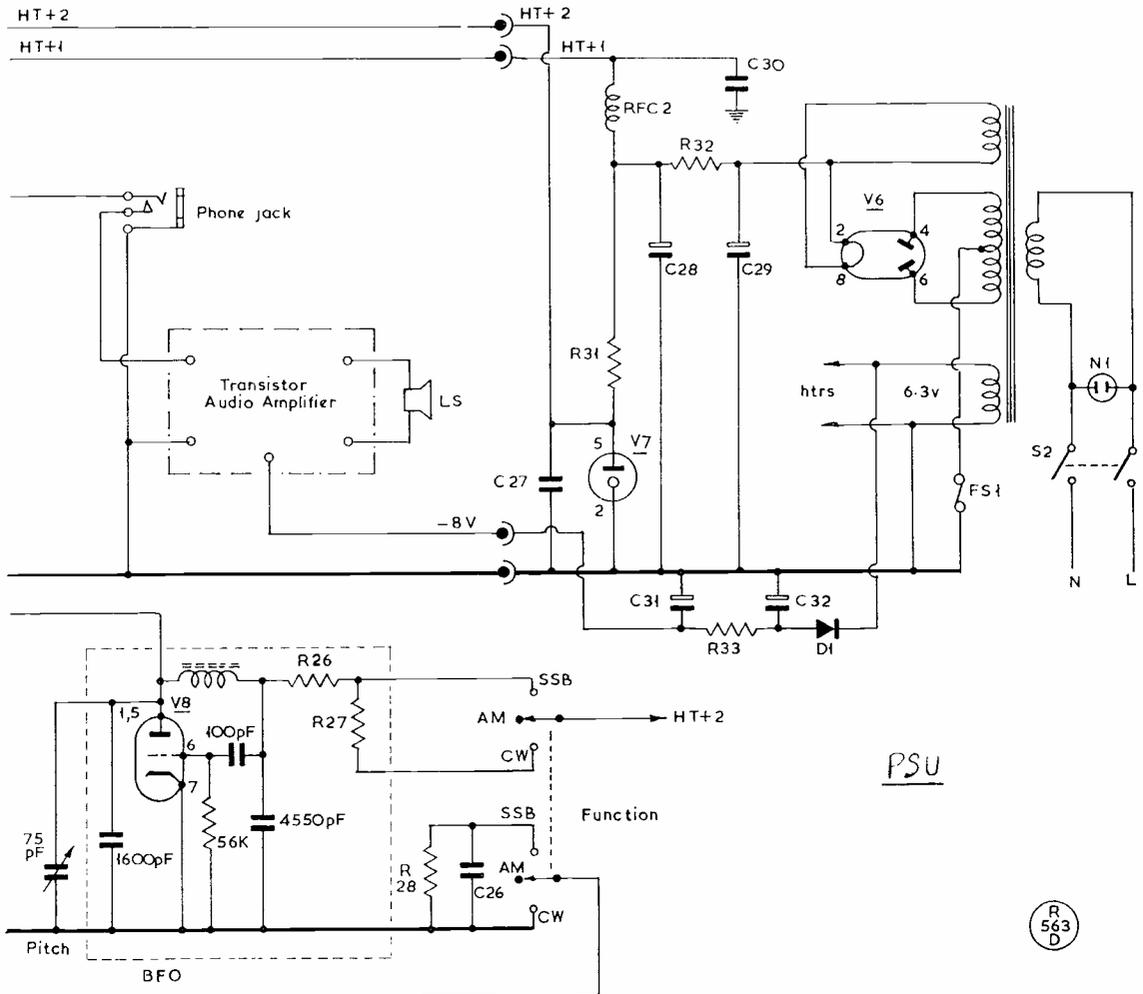
The R.A.F. manual does not give frequencies for adjusting the coil cores. The trimmers were adjusted at the recommended frequencies and the cores at those shown in Table 1. Band 6 had not yet been added and this will be described later. It is worth mentioning that the oscillator trimmers for bands 1 and 2 are of a type common in ex-Service equipment, where the adjusting screw is connected to the moving ceramic top plate by a blob of solder. This frequently gives trouble by parting from the top plate with the result that rotation of the

screw produced no change in capacity. This can happen unnoticed and cause confusion when the coil box cover plate obscures all but the screw head. In the writer's receiver one trimmer failed in this way and was replaced by a 4-40 μF Radiospares type mounted on a small piece of paxolin.

Addition of 3.8-1.5 MHz (Band 6)

Some rough calculations were made of coil inductances, padding and trimming capacities for this range with an intermediate frequency of 560 kHz. Fortunately, the inductance ranges of *Osmor* coils are published and it was found that the QA4, QHF4, QO4 set would be suitable with the existing trimmers of Band 5 and a 1300 pF padder. Since the oscillator and mixer coils

Table of Values for the circuitry shown here and overleaf appeared in Part I, on p.99, April issue. Some final notes will be given later.



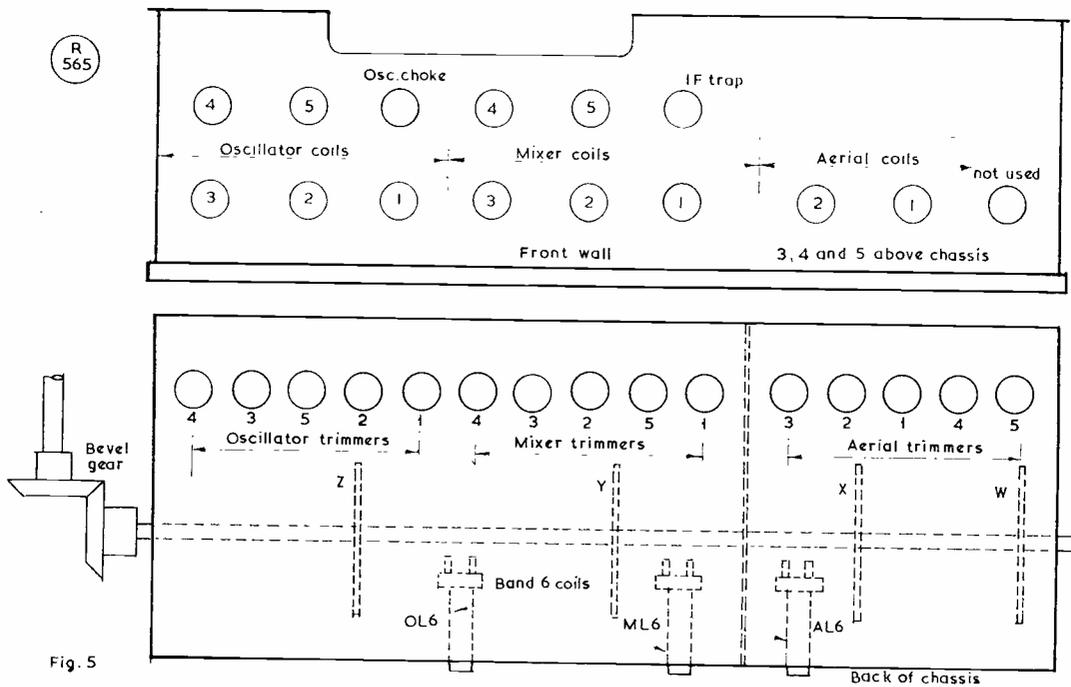


Fig. 5. Arrangement of Coil Unit — see text.

of Band 5 were practically inaccessible the new coils were mounted in the positions shown in Fig. 5, above, over the bars of the range switch. (See also Fig. 9). The oscillator and aerial coils are mounted on L-shaped

brackets attached to the bars, while the bracket for the mixer coil is bolted to the division wall of the coil box. The photograph (Fig. 7) shows separate trimmers alongside the coils since, as previously mentioned, the author

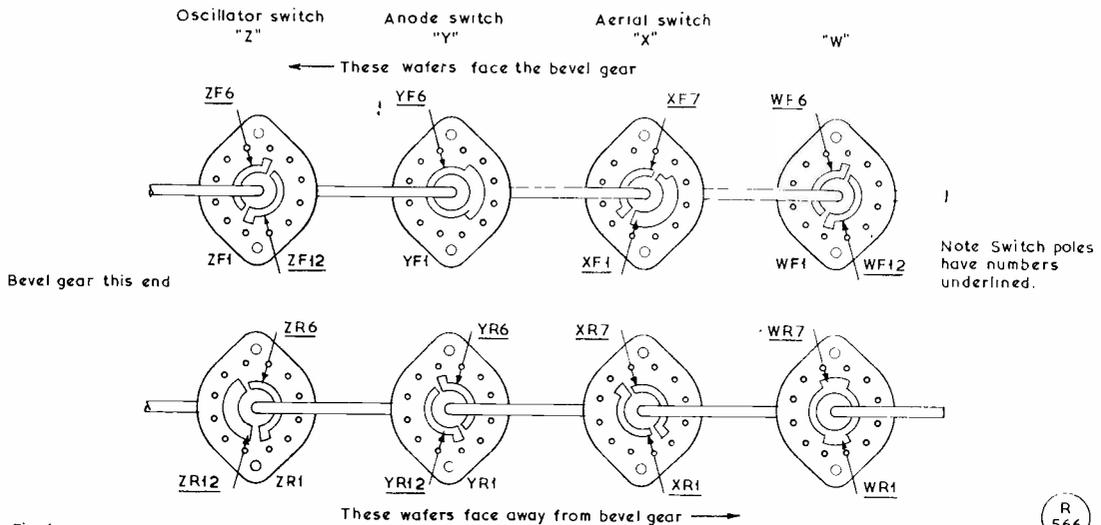
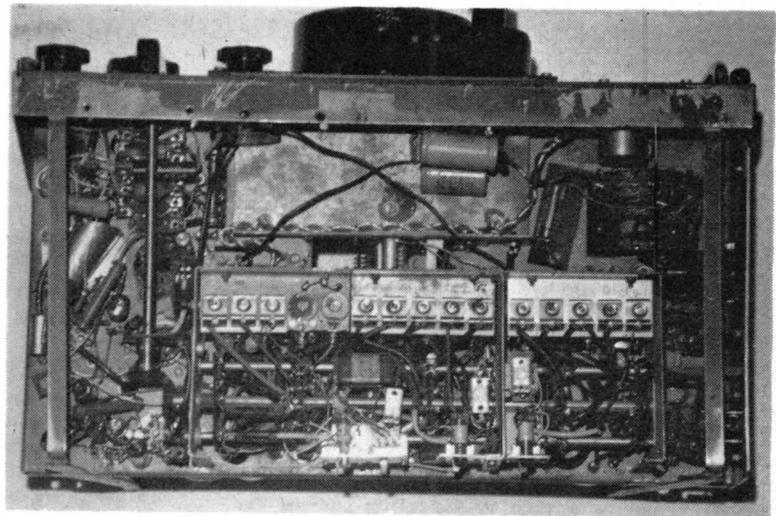


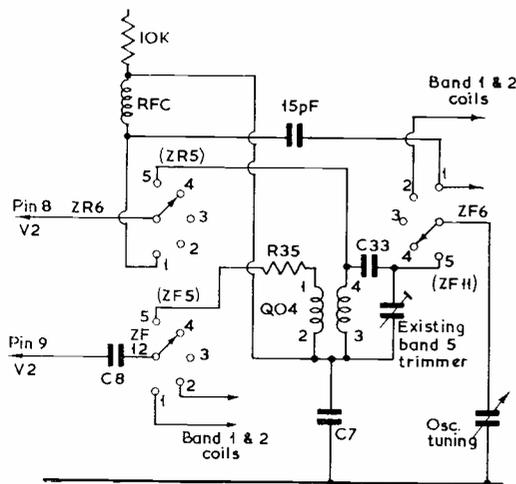
Fig. 6

Fig. 6. Arrangement of band-switch wafers, as seen from rear of chassis when upside down. All switches are shown in extreme counter-clockwise position of switch knob. All wafers are on same shaft, facing in directions indicated.

Fig. 7. Underside of chassis with coil cover removed, showing general wiring and the three new 1.5-3.8 MHz coils mounted on the band-switch bars (see text for further details).



provided additional switching between Bands 5 and 6. However no details are supplied because it is thought that others would not wish to go to the same trouble.



Tag	Aerial coil QA4	Mixer coil QHF 4
1	Earth	Junction C3, R6
2	Switch XR6	Switch YR5
3	Earth	Earth
4	Switch XR12	Switch YR11

Fig. 8



Fig. 8. New Band 6 oscillator coil circuit and connections for aerial/mixer coils.

Table II
Voltage Reading

VALVE	ANODE	SCREEN	CATHODE	
V1	225	82	0.7	
V2	248	120	3.7	(Hexode)
		95	—	(Triode)
V3	230	110	1.0	
V4	225	105	1.0	
V5	120	—	1.5	
V8	37	—	—	(CW)
		88	—	—

Taken with 10 kilohm/volt meter. HT +1,250v. HT +2,145v. RF gain control in full gain position.

The existing Band 5 trimmers can be reconnected to the new coils.

Fig. 8 shows the circuit for the new oscillator coil replacing that of Band 5 and a table of connections for the new aerial and mixer coils. The Band 5 oscillator coil has a tapping to the anode but this is not provided in the QO4. Otherwise the circuit is similar. The connections from the existing coil to tags ZR5, ZF5, and ZF11 should be cut and wires soldered between these tags and the new coils. This work requires some patience and manual dexterity; and a thin soldering iron and a pair of very long thin pliers are essential.

The 1K resistor connected between pin 1 and the switch was found necessary to cure parasitic oscillation over the high frequency end of the band. Works of reference suggested any value between 100 ohms and 5K, and the writer settled for 1K, with much relief.

The connections between the band switch tags and the old Band 5 coils should be removed. Before doing this it is advisable to check the identification of the tags by making sure from Fig. 5 that the leads do, in fact, run to the Band 5 coils.

If the Band 6 conversion is done after previous alignment it would be desirable to re-align all IF and RF circuits.

THE MOBILE SCENE

Rally Dates and Arrangements

WITH the opening of the Rally season, details are beginning to come in of the events laid on for the next few months. There being about 3,000 U.K. amateurs now licensed /M—many with very sophisticated equipment, capable of working world-wide DX on the HF bands while thundering along the motor-ways (though this is not a practice we recommend)—it is a fair assumption that the well-organised and better-publicised Rallies will be very well attended.

As in previous years—indeed, ever since our coverage of the very first Mobile Rally held in the U.K., near Oxford 16 years ago—we shall be reporting those Rally events of which we have the necessary details.

Accordingly, organisers are asked to let us have reports as soon as possible after their meeting, the main details wanted being an estimate of attendance; number of mobiles worked by the talk-in stations, by bands; estimated total of vehicles actually fitted /M; and, if possible, a rough break-down of the mobiles in terms of bands for which they are fitted, *i.e.*, Top Band, HF, VHF. (This sort of information is extremely important for statistical purposes.)

Also, of course, we are always very glad to have good photographs relative to Rally events; these should be fully explained on a separate sheet, with occasion, call-sign(s) and any other relevant details. Those pictures we can use will be paid for, immediately on publication.

All material for "The Mobile Scene" should be addressed: Editor, SHORT WAVE MAGAZINE, BUCKINGHAM.

May 2: Spalding Tulip Rally, at the Picnic Site, Surfleet, 4m. north of Spalding, on the A.16 road to Boston, Lincs. There will be trade stands, bring-and-buy stalls and a raffle, with refreshments available on site. There will also be facilities for overnight camping and caravan parking. Top Band talk-in is to be by G3VPR/P on 1980 kHz and G3XBS/P on 145.8 MHz, both stations opening at 10.0 a.m. Further details, with maps of the famous Tulip Fields, from R. Harrison, G3VPR, 38 Park Avenue, Spalding, Lincs., PE11-10X.

May 16: Northern Mobile Rally, in Leeds, at Manor Grange School, West Park, Leeds 16, on the A.6120 ring road. Talk-in stations will be in operation on 160-4-2m. Attractions will include trade stands and events for all the family. This has always been one of the bigger Rally occasions, established some years ago. For details and information, write: D. Binns, G3MGI, 80 Gipton Wood Road, Leeds 8, Yorkshire.

May 30: Spring Bank Holiday weekend Rally, at the Y-Sports Centre, Maidstone, with talk-in stations signing GB3YSC on 2-4-80-160m., opening at 9.0 a.m. There will be trade stands, also a bring-and-buy stall and events for the children and the XYL interest. Overnight caravan stay can be arranged and how-to-get-there maps obtained on application to: A. S. Walter, G3WXL, 31 Lansdowne Avenue, Maidstone, Kent.

June 13: Annual Mobile Party organised by the Pembroke & District Amateur Radio Club, at the Regency Hall, Saundersfoot, Pems., with talk-in on 1875 kHz and 144.35 MHz. So that catering arrangements can be kept under control, please notify intention to be present to: J. Hogg, GW8DMD, 2 Pembroke Road, Pembroke Dock, Pems., West Wales.

June 13: The second Elvaston Castle Mobile Rally, organised by the Nunsfield House Community Association Amateur Radio Group, Derby. Enquiries to: P. Neal, G3WFU, QTHR.

June 27: Echelford Amateur Radio Society, in collaboration with Hanworth Carnival Committee, will be organising a Mobile Rally for the London area at Hanworth Airpark.

June 27: Anglian Mobile Rally, at the Suffolk Show Ground, Ipswich, organised by the Colchester and Ipswich Radio Clubs, working together. This has become a very popular Rally event. Applications for trade space are invited; overnight caravan parking will be available; and there will be all the usual Rally attractions, with refreshments obtainable on site. Trade enquiries to G3SJO, QTHR, and for other Rally details and information apply: D. W. A. Thomas, G3ZLN, 9 Burlington Road, Ipswich (55200), Suffolk.

June 27: Annual Mobile Rally at Longleat House, near Warminster, Wilts.—always a very well-attended event in particularly attractive surroundings, with the great house, the home of the Marquis of Bath, fronted by a lake and standing in a magnificent park. And, of course, there are the Lions! There will be trade stands, a bring-and-buy stall and a raffle. This year there will also be facilities for over-night camping, and a caravan park. Talk-in stations, opening at 10.0 a.m., are to be G6YB/P, 1924 kHz; G3JMY/P, 70-425 MHz; and G3TAD/P, 144.350 MHz. Further details and information from: B. Croker, G3ULJ, 36 Portland Street, Staple Hill, Fishponds, Bristol BS16-4PT.

DEFINITION TO NOTE

On certain circuit diagrams, particularly those of Continental origin, where values are written in—a practice that we deplore, the C1, R1, L1 notation being much more suitable when circuit elements have to be referred to in the text—the symbol nF may occur. This should be read as meaning that $1nF$ is equal to $\cdot 001 \mu F$ and *e.g.* $4.7 nF$ is $\cdot 0047 \mu F$, or $7 nF$ is $\cdot 007 \mu F$. The probability is that it will be years yet before an immediately-recognisable capacity notation can be agreed internationally—this is because the Farad, the original measure of capacity, was given an impossibly high value in relation to the practical values we use in radio today. A condenser unit of one Farad, charged to 250v. across the plates, would be about the size of the average sitting-room. This is why, in radio circuitry, we have to fiddle about with quantities like microfarads, picofarads and micro-microfarads, all being fundamental units in the radio context but all based on this idiotic concept of the Farad as the unit of capacity. It is rather like establishing 10,000 miles as the basic measure for speed and distance.

TRANSISTORISED T.U. FOR RTTY

CIRCUITRY AND CONSTRUCTION FOR A PRACTICAL UNIT

A. J. GOFF (G8DKL)

HAVING gained an interest in RTTY the author set out to build a terminal unit, but as no information on transistorised equipment of this kind could be found it was decided to develop one. The use of transistors would make the unit quite compact and reduce the cost compared with valves.

Receiver Converter

The receive converter was designed to accept the audio output of the product detector in the associated receiver, and therefore required to operate with a fairly low input level. In order to achieve satisfactory performance on weak signals a high-gain amplifier is used, Tr2, Tr3, Fig. 1. The input stage, Tr1, is arranged to give a high input impedance so as not to load the receiver unduly.

Incorporated in the amplifier are two double-diode limiters, which prevent the amplifier blocking with high input levels. They also improve the limiting, so that a wide range of input levels can be handled with ease. Tr4 is the output stage of the amplifier and feeds the limited signals at a low impedance to the "mark" and "space" filters. Isolation between the two filters is provided by the 1K series resistors.

Each filter simply consists of a parallel tuned circuit, with the input tapped down the coil so as to minimise damping. From each filter a resistor connects the detectors (Tr1, Tr2, Fig. 2), which are common-emitter

amplifiers with no bias. When there is an input to a detector, the output consists of half-cycles of the input waveform, and the capacitors between the collectors and the emitters smooth this to produce DC. The base feed resistors are individually adjusted so that the detectors just limit.

From the detectors the DC pulses are fed to limiters (Tr3, Tr4, Fig. 2), which remove any AC components. These limited pulses are now used to trigger a bistable. The "mark" pulses feed to one base of the bistable, and the "space" pulses to the other. This means that with a "mark" condition being received, the bistable is held with Tr6 switched on, and Tr5 off. The bistable will remain in this state until the "mark" is replaced by a "space," whereupon Tr6 will be switched off, and Tr5 switched on. This method of producing the signals for the teleprinter magnet was found to be more reliable than just using the detector outputs, particularly when interference was present.

The bistable outputs are fed to a DC differential amplifier with the magnet connected between the

Table of Values

Fig. 1. Receive Amplifier and Limiter

C1 = 50 μ F, elect.	R6, R21 = 2,200 ohms
C2 = .005 μ F	R8 = 56,000 ohms
C3 = 16 μ F, elect.	R9, R16 = 4,700 ohms
C4 = 4 μ F, elect.	R10, R17 = 3,300 ohms
C5 = 125 μ F, elect.	R11 = 330 ohms
C6 = 22 μ F, elect.	R14 = 220,000 ohms
C7, C9 = 0.5 μ F	R15, R22 = 1 megohm
C8 = 6.8 μ F, elect.	R19 = 22,000 ohms
C10 = 15 μ F, elect.	R23 = 56 ohms
C11 = 8 μ F, elect.	MR1,
R1 = 100,000 ohms	MR2,
R2, R7,	MR3,
R13 = 1,300 ohms	MR4 = MR36
R3, R12,	MR5 = OA10
R18 = 10,000 ohms	RLA = 6v. hi-speed relay
R4 = 15,000 ohms	Tr1, Tr2,
R5, R20 = 27,000 ohms	Tr3, Tr4 = ACY20

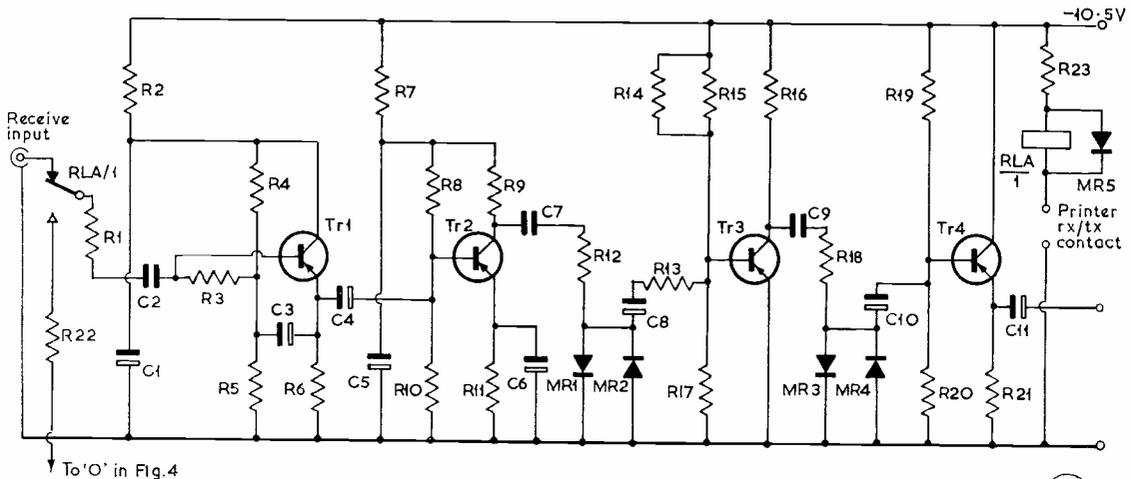


Fig. 1

Fig. 1. Receive Amplifier and Limiter.

X
330

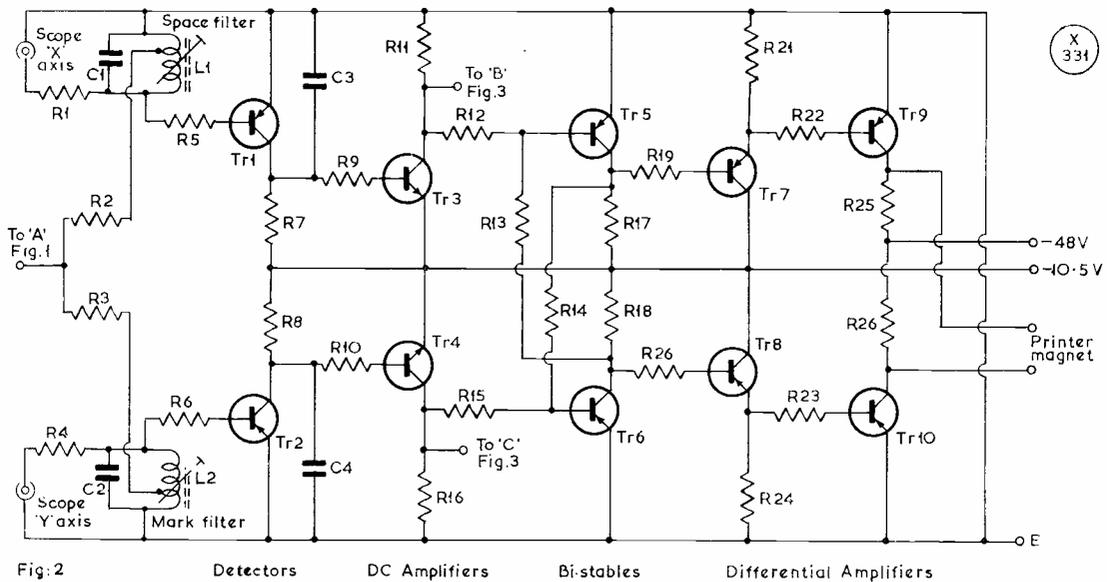


Fig. 2. AFSK to Double-Current DC Converter.

Table of Values

Fig. 2. AFSK to double-current DC Converter

C1 = .0417 μ F	R17, R18 = 4,700 ohms
C2, C3, C4 = 0.1 μ F	R21, R24 = 15,000 ohms
R1, R4 = 240,000 ohms	R22, R23 = 2,000 ohms
R2, R3 = 1,000 ohms	R25, R26 = 820 ohms, 3w.
R5 = 47,000 ohms	Tr1, Tr2, Tr5, Tr6 = ACY20
R6, R19, R20 = 10,000 ohms	Tr3, Tr4 = D983
R7, R8 = 5,600 ohms	Tr7, Tr8 = BCY30
R9, R10 = 27,000 ohms	Tr9, Tr10 = BCY39
R11, R16 = 6,200 ohms	L1, L2 = 120 mH ferrite pot cores, tap 10% from earth end
R12, R15 = 820,000 ohms	
R13, R14 = 220,000 ohms	

collectors of the output pair, Tr9, Tr10, Fig. 2.

Outputs from the filters are provided to enable an oscilloscope to be connected, and a cross-pattern displayed to facilitate easy tuning on the receiver. Two lamps driven by DC amplifiers were incorporated to indicate when signals were being received, but the oscilloscope was found to be the best method.

Transmit Converter

This consists of two LC oscillators which run continuously, their outputs being controlled by DC keyed gates, Tr2, Tr3, Fig. 4. The gates are keyed by the teleprinter transmitter.

In order to remove clicks from the signal (produced

by the keying of the gates) high-pass filters are used (C7, R8, C10, R11). The outputs are then combined and fed through a low-pass filter (L3, C9), to remove any keying clicks and oscillator harmonics.

It must be pointed out that this circuit is intended to feed an SSB transmitter to produce an FSK output. If an SSB transmitter is not involved, then this circuit can be dispensed with, and direct keying of the transmitter oscillator used instead.

In order to print local copy when transmitting, a high-speed relay is operated by the teleprinter transmit/receive contact, and this disconnects the receiver, and loops the "transmit" and "receive" of the TU. This ensures that the TU operation can be checked while transmitting.

Power Supply

The PSU is straightforward and provides 48v. for the magnet supply, and a stabilised 10.5v. supply for the

[cont'd. p.166]

Table of Values

Fig. 3. Indicator Lamp Circuit

R1, R4 = 27,000 ohms	Tr2, Tr4 = BCY30
R2, R5 = 1,000 ohms	Lp1, Lp2 = 6v. indicator lamps
R3, R6 = 56 ohms	
Tr1, Tr3 = ACY20	

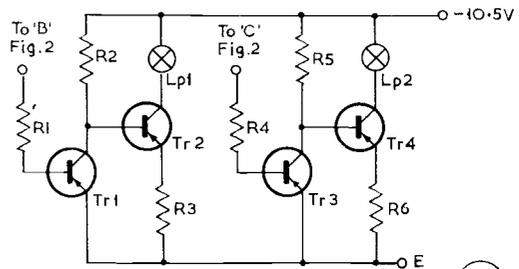


Fig. 3

Fig. 3. The Indicator Lamp Circuit.

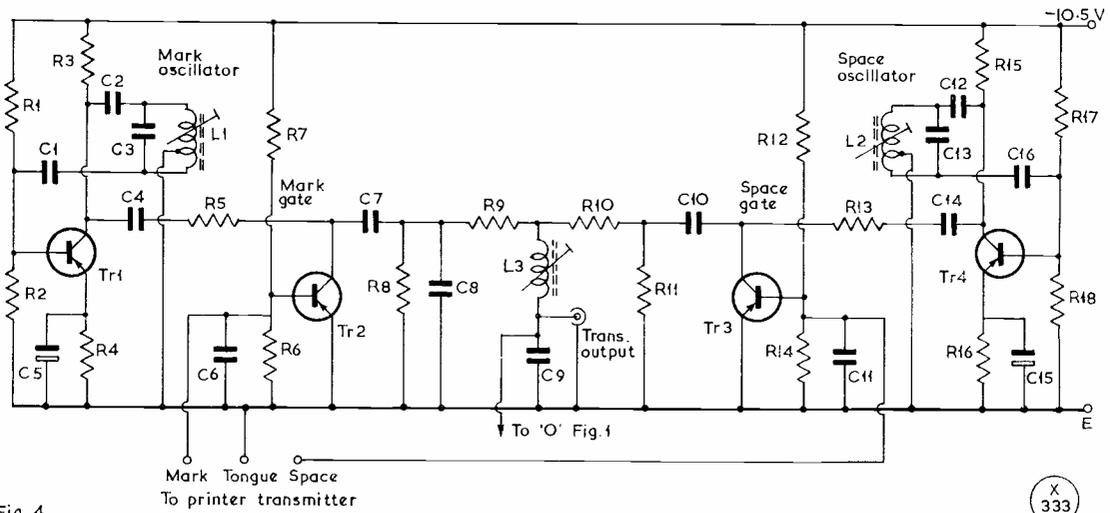


Fig 4

Fig. 4. Circuit of the Transmit Converter.

Table of Values

Fig. 4. The Transmit Converter

C1, C9 =	R4, R16 = 680 ohms
C16 = .047 μ F	R5, R13 = 56,000 ohms
C2, C12 = .06 μ F	R6, R8,
C3 = 0.122 μ F	R11, R14 = 39,000 ohms
C4, C14 = .022 μ F	R7, R12 = 47,000 ohms
C5, C15 = 16 μ F, elect.	R9, R10 = 15,000 ohms
C6, C11 = .0022 μ F	Tr1, Tr4 = ACY20
C7, C10 = .01 μ F	Tr2, Tr3 = BCY33
C8 = .0147 μ F	L1, L2 = 100 mH ferrite pot
C13 = .0473 μ F	core, tap 20%
R1, R17 = 150,000 ohms	from base
R2, R18 = 8,200 ohms	L3 = 630 mH ferrite pot
R3, R15 = 10,000 ohms	core

Table of Values

Fig. 5. The Power Supply Unit

C1, C3 = 2500 μ F, elect.	MR's = BY-100
35v. wkng.	MR5 = OAZ213
C2 = 150 μ F, elect. 15v.	T1 = Mains pri., 30v.
wkng.	2A sec., tapped
C4 = 2000 μ F, elect.	15v.
50v. wkng.	FS1 = 1.5 amp.
R1 = 10 ohms, 2w.	FS2,
R2 = 470 ohms	FS3,
R3 = 2,200 ohms	FS4 = 1 amp.
R4 = 15,000 ohms	Tr1 = GET587
R5 = 100 ohms, five	
Radiospares	
20-ohm power	
sections in series	

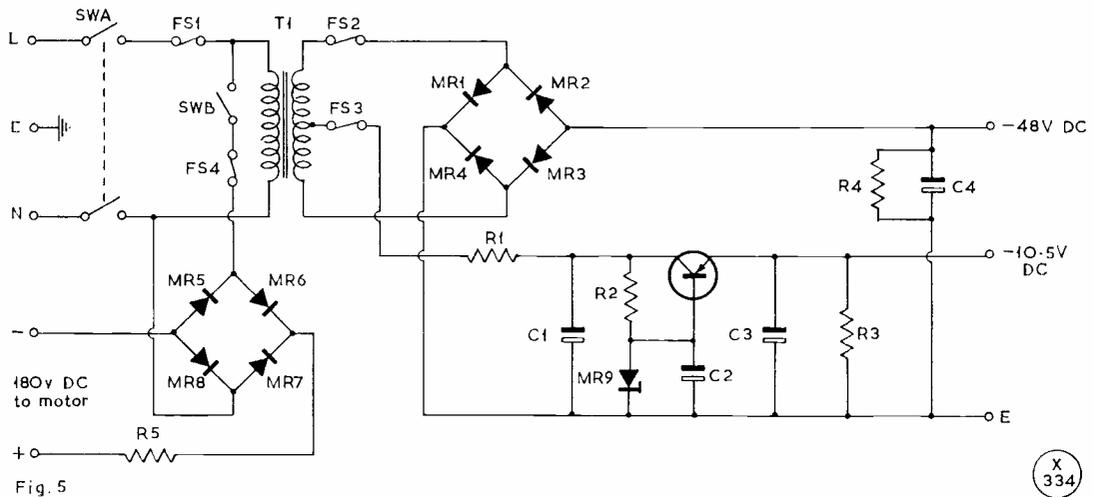


Fig. 5

Fig. 5. Suitable PSU arrangement.

amplifiers, oscillators and associated circuitry. A DC feed for the teleprinter motor is also incorporated, this being a bridge rectifier and voltage dropper resistor, direct from the mains.

Construction

The circuit was constructed on *Veroboard* and if the layout is carefully planned it can be made quite compact. The only critical point about this is to keep the receive amplifier input and output circuits well apart, as there could be a chance of oscillation due to its high gain. Screened wiring should be used for the input and output connections to avoid noise pick-up.

Frequencies

The frequencies used in this TU are 1444 Hz and 2294 Hz, to give a frequency shift of 850 Hz, the lower frequency being "mark." Any other frequencies could be employed by changing the tuned circuit component values as necessary.

Setting Up

Initially, the filters and oscillators need to be set at the correct frequencies, the best method being to use a

frequency counter. The oscillators are set on the desired frequencies by adjusting the resonating capacitors and the tuning slugs in the ferrite pot cores. Then the "receive" filters can be adjusted using the oscillators.

The next step is to adjust the resistors, (R12, R15) which feed the bistable, so that it will only trigger to a fully-limited signal. This means finding the largest value that gives reliable triggering. (It is necessary to do this to prevent spurious operation due to noise.)

The third adjustment is to equalise the levels of the tones on the "transmit" side, by altering the value of C8 in Fig. 4. This varies the level of the LF tone. The output level of each tone should be approximately 50 mV.

The "receive" sensitivity is quite high, the original unit operating correctly with an input as low as 3 mV. Normally, the input level used is 100-150 mV.

Performance of the TU was found to be very good when interference was present on the desired signal, but the addition of pre-limiter filters would of course make this even better.

It is hoped that this article will be useful to others wishing to build similar units, and of course any suggested improvements would be welcome.

SPECIALLY ON THE AIR

Activities so far notified under this heading (*see* p.104, April, for details needed) are:

GB3FI, May 23: Operating from Flatholme Island, Bristol Channel, as last year, commemorating Marconi's original tests in 1897. Bands worked will be 10-160m., CW/SSB, and two metres, AM. Collaborating station GW3VKL/A, Lavernock Point, also possibly stations in Cornwall (Poldhu) and Italy (Bologna). A special QSL card will be issued for all contacts and SWL reports.—D. H. Adams, GW3VBP, College of Further Education, Colcot Road, Barry, Glam., South Wales.

G3EKW/A, July 10-25: Arrangements in hand by the local Nottingham Amateur Radio Club for the Nottingham Festival '71, Wollaton Park, as last year. Further details later.

THE MEDICAL LIST

Following the suggestion on p.24 of the March issue of *SHORT WAVE MAGAZINE*—about listing U.K. amateurs in the various professional categories, and as a start asking those members of the medical profession who might be interested to write in—we have had details from:

Dr. Ian Sykes, MA, MB, B.Chir (Cantab),
DRCOG, G3OWY (Stinchcombe, Glos.)

Dr. W. S. Hossack, MB, Ch.B, DRCOG,
GM3UBJ (Macduff, Banffshire)

Dr. D. P. Nicholls, MB, Ch.B (Manc.),
G3ZVZ (Manchester)

Dr. E. J. B. McArthur, MB, Ch.B, VU
Manc., DRCOG, G3VVA (Upton, Birken-
head—group practice)

Of course, there must be many more who could be included in the list and we hope that this first appearance will encourage them to make themselves known. There is no ethical problem involved—in fact, since we suggested

this listing, we have been informed that there are moves afoot to form a Radio Amateur Medical Association on a world-wide basis—so we hope to hear from more of our doctor-readers for inclusion in the Medical List.

In the meantime, we invite those who are qualified in the practice of the Law to recognise themselves in the same way, also mentioning (where applicable) the Inn to which they belong.

Entries will be listed in the form shown, no full QTH being given and it will be understood that any information that we receive under these headings is intended for publication. Address is either "Medical List" or "Legal List", c/o *SHORT WAVE MAGAZINE*, BUCKINGHAM.

THE N.S.R.A. CONVENTION *Belle Vue, Manchester, May 9*

This is an important Amateur Radio event in the North-West, assured of wide support, which takes place at the famous Manchester centre of Belle Vue on Sunday, May 9. Information and advance details were given on p.83 of the April issue of *SHORT WAVE MAGAZINE*. This is a reminder that the talk-in stations on 2-4-160m., and the installation for HF/DX working, will all sign GB2BVC and that enquiries and QSL's should be directed to: S. Potter, G3YKJ, *QTHR*, Tel: 061-980 2523, evenings.

IAN ORR-EWING, G5OG, LIFE PEER

In the Prime Minister's list published on April 8 appears the name of Sir Ian Orr-Ewing, Bt., O.B.E. (G5OG), elevated to a life peerage. After war-time service in the Royal Air Force, in which he became a group captain and was made O.B.E., Ian Orr-Ewing had a distinguished career as an M.P. (sitting for Hendon North), as a junior minister and latterly in business as a director of several companies. We congratulate G5OG on his distinction—the first active radio amateur to become a serving member of the House of Lords.

THE CONICAL MONOPOLE AERIAL

INTERESTING MULTI-BAND DESIGN—WIDE FREQUENCY ACCEPTANCE—GOOD SWR OBTAINABLE

E. W. OSBORN (ZS6CR)

ANTENNA systems have always been one of the main interests in Amateur Radio at this station. However, space and neighbours' reactions have also to be considered. Interest in 7 MHz DX having been aroused again in late 1968 (this band was the main source of DX in the early 1930's, when amateur activities first started at ZS6CR), thoughts turned to the most suitable type of aerial for this band.

A full-sized Yagi is a forbidding structure and needs to be at least 60 feet above ground—as do long wires and

dipoles, to give the low-angle radiation which is of course so necessary for long distance transmissions.

There is no easy solution to the problem of a good DX antenna at the lower frequencies, except perhaps the Vertical, which so many amateurs seem to avoid.

Reading through many radio books and periodicals turned up a very interesting article in *QST* by K6EZ, describing the "Conical Monopole". This is a base-fed system that has an omni-directional pattern in azimuth, but in which most of the vertical radiation is kept down close to the horizon. It consists of two hexagonal cones joined at the base, as shown in Fig. 1.

Its big advantage is that it is a wide-band antenna giving a frequency coverage of some 4 : 1, with a SWR of less than 2.5 : 1. It is a type that has been used with considerable success in commercial applications.

To simplify construction the cones are simulated with wire elements to form a cage. In commercial versions, the central support is generally a metal pole or tower, the whole structure being at DC ground, thus protecting the station from lightning damage.

Fig. 1 shows the overall dimensions of the antenna that has been made up by the writer to cover the 7 to 28 MHz bands. Complete constructional details are not given as these may well vary to suit individual requirements. The main supporting pole can be of wood or metal, as too, can the horizontal support arms at the base of the cones.

At this station, the centre pole and arms of the antenna are made from 1½ in. by 1½ in. wood, the support pole being "laminated" from three pieces to strengthen it. Six earthing wires, to conform to the Fig. 1 configuration were run down this pole, but would of course not be necessary with a metal pole or tower.

The cones were made up of 12 wires, all being 7/029 stranded copper "electrician's earthing wire" with the

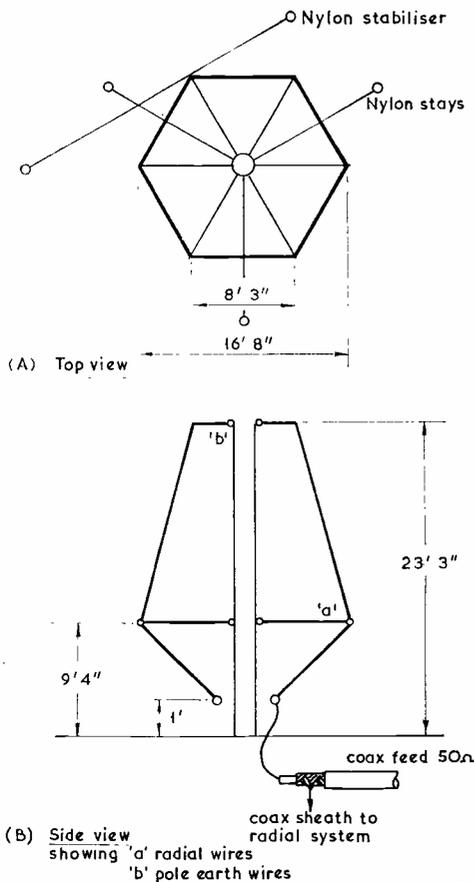


Fig. 1

A 508

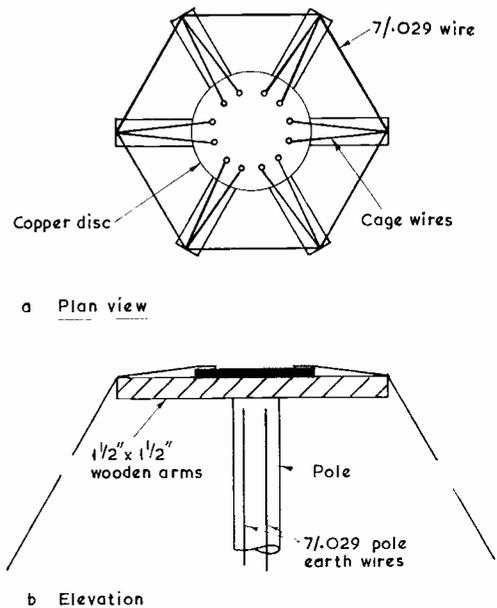


Fig. 2 Top hat with Cage wires

A 509

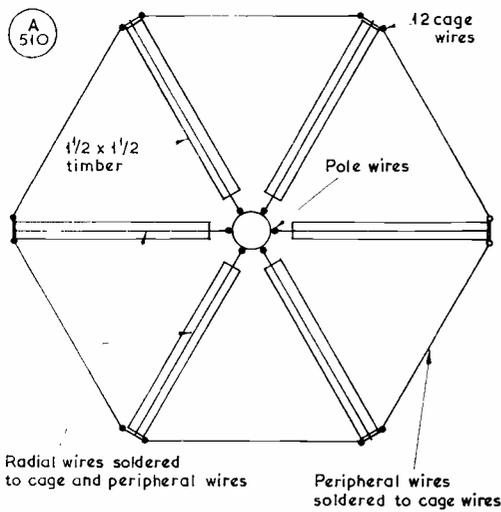


Fig. 3 Detail of Central Spoke Assembly

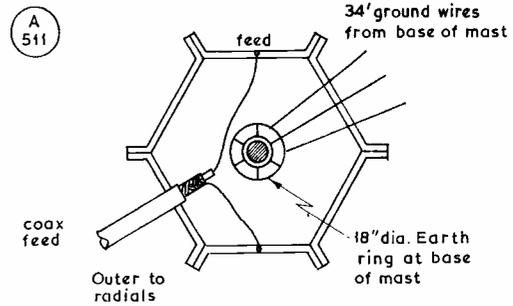


Fig. 4 Top and Side view of Bottom Feed Ring

initial stretch pulled out before fitting. The "top hat", Fig. 2, consists of short lengths of 1½ in. by 1½ in. carrying a 9-inch diameter disc of 16g. copper, to which the 12 cage-wires and six pole wires are soldered.

At the bottom, the lower cone, wires were soldered to a hexagonal ring, made up from six lengths of half-inch copper pipe, the ends of which were flattened and then bolted together—see Fig. 4. This ring is held in place by six tensioning turn-buckles and insulators, to the base of the centre pole, as shown in Fig. 4. The inner of the 50-ohm coax cable feeding the antenna is joined by two copper straps to diametrically opposite points of the ring. The earth system, to which the outer sheath of the feed coax is connected, consists of 24 ground radials, 34 feet long, running out from an 18-inch diameter ring surrounding the pole base. These radials are buried some 3 inches or so below ground. The whole structure hinges at the base and is supported by three nylon stays, with additional stabiliser stays, as shown in Fig. 1.

Results

Now after all this material and work, what has one got? Over the two months of tests, it can be said that it is very worth while. Some of the results worth mentioning are: On 7 MHz, JA, W6, PY and VK, with average reports of 56/79, also all W1 to W0, Europe, Asia, CE, PY on 14 MHz, again with 569 average, and the same on 21 MHz.

Looking at the SWR—of utmost importance in relation to any radiating system—with the Conical Monopole constructed as described here, the readings obtained are 2:1:1 on 7 MHz; 1:8:1 on 14 MHz; and for 21 MHz about 2:1. Such figures, within or around the 2:1 mark, are quite acceptable and can be regarded as good for any amateur multi-band system.

The wide-band characteristics of the aerial are, of course, a great asset, allied to which is that band-changing is much simplified by reason of there being no aerial switching to do.

All in all, the results have been so encouraging that a start has been made in constructing an all-metal version, involving an aluminium support tower and central spoke assembly made of 1 in. by 1 in. by ¼ in. angle.

**L.E.C.S. EXHIBITION, OLYMPIA
London, May 18-21**

This important exhibition—the International London Electronic Component Show—will be of particular interest and importance this year. One reason is that though the electronics industry as a whole shows a healthy increase in exports and in sales generally, the truth is that the position is being eroded by steadily increasing imports—guess from where!—to such an extent that a slip is beginning to show in the industry's balance-of-payments position overall. It has also become evident that the semi-conductor price war is seriously affecting the smaller electronics components distributor organisations having too large a commitment to IC's and other semi-conductor devices. Even to maintain their position could mean the problem of achieving anything up to double their previous volume of sales. With the market in the highly competitive and somewhat unstable condition it now is, this would be virtually impossible. Some disasters are only to be expected among firms of distributors—and there are now about 100 of them—who have become too heavily committed in the field of transistory and have not been able to diversify through the whole range of electronic products.

VHF BANDS

A. H. DORMER, G3DAH

UNTIL the Easter weekend, it looked as if the propagation pattern on VHF was going to follow that of the last few weeks, with conditions very rarely better than average—but the good weather associated with the high-pressure system which developed over the centre of the U.K. brought with it a very welcome lift on the VHF bands. Contacts over 200 miles were fairly easy on Two, where the major activity occurred and should have been possible on Seventy also, since the Sutton Coldfield beacon was being well received in the South, and the London beacon at good strength for most of the time in the Midlands. But very little traffic was logged. Even G8ACN with his set-up seemed to be a lone voice crying CQ in the wilderness! Four was almost as unproductive of good contacts as was Seventy.

During the remainder of the period, the lifts towards France on March 21 and 28th were welcome, as was the North/South activity over March 12-14. The minor Aurora on April 9, which started at about 1830z and lasted for a couple of hours or so, was pretty restricted in the South, although it is reported that G3WZM and G3UUR in East Anglia heard an HB9/P (which is very unusual) and G3COJ of High Wycombe, Bucks, recorded a few PAØ's, also GM3EOJ and EI6AS.

As is usually the case, propagation seemed to be better generally speak-

ing in the South than it was in the North but, at last, the signs were there of the end to our long winter of discontent.

The *ARTOB* on April 10 proved a successful launch, but obviously favoured the Continental rather than the British stations. A listen on the SSB channel at around 1800z showed much weak DL/PAØ activity, but no U.K. stations were heard getting in on the exercise. To give some idea of the extent of the coverage of these balloon - borne repeaters, both HB9RG and OE2OML were worked by Dutch stations.

Contests and Awards

432 MHz Marathon: Final placings in this G8APZ/G8AWS 70 cm contest, which has done so much to stimulate activity on that band, show that of the 34 entries received, the leaders were G3NEO (Sheffield), 945 points; G3UBX (Wolverhampton), 710 pts.; and G8AUE (Pentrick, Derbys.) 655 pts. There were also three A/TV station entries—from G6AEP/T, G6AFL/T and G6AFA/T. The summary also shows that of the 34 entries, 26 were G8/3's. Going further into the statistics—altogether, 258 British calls were noted as active during the event, and of these 101 were Class-A licensees and 157 Class-B. Some 14 PAØ calls were logged, also six other EU's. No GM, GI or EI stations were recorded. Despite the small total of three Video logs received, they contained between them no less than 18 different G6/T callsigns and showed that a goodly proportion of phone stations are equipped to receive A/TV.

It is apparent from the logs that conditions were pretty poor for the entire contest period. There were a few minor lifts, and one or two occasions on which it was possible to work the Continentals. But by and large, it was pretty heavy going, particularly for those remote from centres of high activity, such as the Midlands and, to a lesser extent, the North of the country. As an example, G8ATS (Mildenhall, Suffolk) found that 95% of his contacts were DX. The logs also show that 70 cm activity occurs in fairly localised areas but that when conditions improve these areas rapidly link up. The finding also is that activity in the South, though healthy, does not match that to the north of the Home Counties.

Worthy of note is the fact that, although remote, GD2HDZ reaped a fine crop of Midland and Northern calls for his 181 points, seemingly irrespective of conditions—perhaps the callsign had something to do with it! His most regular customer seems to have been G8CUE (Rotherham), at 220 kms. Of the total, there were 19 stations who were active on more than 50 days, and who therefore qualified for the 50 bonus points—G3NEO worked between 10 and 20 stations *every night*.

An examination of G3NEO's entry shows 246 QSO's with Class-A stations, of which 27 were different; 516 with Class-B stations, of which 48 were different; and seven contacts with different Continental stations, of which six were PAØ and one ON. This gave a total of 769 QSO's with 82 different stations, including one GD, one GW and one G6/T. *Very nice going!*

It is hoped to be able to persuade the organisers to lay on another event of this type later in the year, possibly in the Autumn when conditions are likely to be good, or at least better. In the meantime our congratulations to them for a fine co-operative effort.

144/432 MHz Contest—March 5/6: Conditions were variable during this event, with the best propagation probably occurring during the Sunday afternoon, and more DX being available on Two than on Seventy (which, one supposes, is normal). Although this was a fixed-station event, some very high scores, normally associated with portable rather than fixed station events, were recorded towards the end. Notable among these was the double century of G3OXD/A operating from near Dudley, and the 150+ totals of G8BQX and G3ILO in Lewes and Dursley. There was a marked improvement in the quality of the signals radiated compared with last year's event, and, of course, compared with the /P contests. The increasing and effective use of the VFO was also worthy of note. There was little extended tropo. about, and therefore few contacts over the 250-mile mark, and Continental activity—in spite of the fact that the IARU Region 1 event was being run in parallel—was low and limited mainly to the French, Belgian and Dutch coastal areas.

70 MHz Contest—April 3/4: Conditions were generally a bit up for the four-metre contest over the weekend of April 3/4. There was some falling off early on the Sunday morning, but by midday good DX contacts were again being made. The Sussex beacon was receivable at 5 and 9 in the Midlands for most of the time, and the Sheffield beacon at slightly lower signal strength in the South of the country. One could say from the scores passed that propagation conditions in the North were better than in the extreme South. The activity appeared to be up on that noted during the corresponding event last year. The Welsh portables were doing well, although the GW3NUE/P signal seemed down on normal in Herne Bay but the University College team, GW3UCB/P in Llangollen, and the GW4ABR/P group in Montgomery, were consistently good. Much sought after was GM3RLE/P in Moffat, Dumfries-shire but he was very difficult copy in the South due to heavy QSB, and his signal rarely rose above S3. Up among the leaders must be G3OHH of Mow Cop with 86 contacts yielding 530 points—approximately six points per QSO this year compared with four last year—and this is probably a typical result. Notable features were the increasing use of VFO's and a move away from the stereotyped QLH/QHL procedure in favour of QSU (*listening first on this frequency*) and of progressive tuning up or down from the previous contact, which gives everyone a chance. The timing of the event seemed to meet with general approval.

Future events are the Two-Metre Portable over May 1/2, and the 432 MHz Open on May 22/23.

Activities To Come

The Southdown Amateur Radio Society, in conjunction with the Ashford, Chichester and Worthing groups, will be making an onslaught on the Northern stations on May 23 next between the hours of 0900 and 2100z. They have organised this "attack on the two-metre band" to stimulate North/South activity, and are offering "The South Coast Award" for the highest score based on points per kilometre calculations. Details from G3XUS, *QTHR*.

The Farnborough & District Radio

Society are organising a new type of contest with the object of assisting our G8/3's to obtain contacts. The idea is to work British stations, on one band only, in different counties and with different prefixes, a stipulation being that the prefixes must include one G8, either two-letter or three-letter. There are a number of categories, starting with the comparatively simple Class-L, which requires QSO's in five counties and with three prefixes (one of which must be a G8) and progressing through various combinations of increasing difficulty to Class-A, requiring 98 counties and 28 prefixes. Yes, it is possible if you can work G2, G3, G4, G5, G6 and G8 in G, GC, GD, GI, GM and GW! Further details from: M. R. Crayton, 47 Lye Copse Avenue, Hawley, Farnborough, Hants. There is an entrance fee of 25p at the start and a certificate at the end entitled "The G8 Single Band Award".

Claims and entries for the VHF Century Club Award, and for the Annual VHF Tables, will be welcome now that the postal services are back to normal. Claims received to date for the Tables are shown herewith.

Meetings and Conventions

The Ipswich Affair: The "get-together" mentioned last month as taking place at the Copdock House Hotel, on the Colchester road just outside Ipswich, on June 4, seems to be attracting a fair amount of attention. This is no formal occasion, with presentations and lectures, but a rendez-vous for VHF men to give them the chance to meet personally, if they haven't done so before, or to renew old acquaintance if they have, and to talk over, in pleasant surroundings, VHF matters of the moment. For the old timer, here is the chance also to discuss problems and so help the newcomers who, in their turn will become old timers, and for those just finding their feet among "this happy band of brothers" there should be plenty of expertise available on which they can draw. So come along at 7.30 p.m. Tickets, which include the food, cost 90p, and may be obtained from N. Thomas, G3ZLN, 9 Burlington Road, Ipswich. (*Ipswich 55200*). Hope to see you there.

Midlands VHF Assembly: This occasion, to replace the old Midlands VHF Convention, is to take place on

Saturday, June 19, at the Albright & Wilson Recreation Club, Oldbury, near Birmingham. The afternoon lecture will be given by Geoff Stone, G3FZL, who has chosen for his talk "VHF in the Seventies", which sounds very promising. After tea, a film show, followed by a dinner at 7.30 p.m. Admission is by ticket only at a cost of £2 for the whole day, £1.75 for dinner only, and £0.25 for the day only, including tea. The site is located within a ¼-mile from Exit 2 of the M5 Motorway and the junction of the M5 and the A4123. Tickets may be obtained from G3OHC, *QTHR*. Talk-in stations use G3TGL/A on 70.26 MHz and G3OXD/A on 144.3 MHz, and bets may be laid that Oldbury is not such a good two-metre site as the usual 'OXD contest location! See you there.

South East UHF/VHF Group: The next Meeting of the Group is at Wye College, University of London, near Ashford, Kent at 7.30 p.m. on May 7 when the speaker will be V. O. Hartopp, G8COB, of *J-Beams*. All interested amateurs are welcome and details of future meetings may be obtained from the Hon. Sec., G3DAH, *QTHR*.

South Bucks VHF Club: Bassetbury Manor, High Wycombe, is, as usual, the location for the Club Meeting which is planned for May 4, when there will be a talk on "Radar". A sales demonstration of VHF equipment has been arranged for the meeting on June 1, time 8 p.m.

DX-Peditions

G18CEA/P is proposing to operate from a 1,778ft. a.s.l. feature in QRA WO24c in County Tyrone during the May 1/2 144 MHz Contest.

GB3SKY will be on two metres with CW and SSB during 1500-1700z on June 19, also 1030-1200z and 2000-2100z on June 20. CW on 144.08 MHz and SSB on 145.42 MHz. He will also be operating as GM3ZXO with the same facilities from Roxburghshire on June 15/16 and from Perthshire on June 17. He hopes also to be on four metres, CW only, and signing GM3IKR or GB3SKY as appropriate. Contact man for skeds is G3XIP, *QTHR*. Don't forget the s.a.e.!

Paul Widger, GM8AGU, will be expeditioning again between Tuesday, May 18, and Friday, June 4. He

starts in Argyll and ends in Banff, and the route to be followed is being kept flexible, and will *not* include counties which are often visited during contests, or to which expeditions have already been made. Operating times are 0630-0730z and 1900-2300z Monday to Friday, and it is possible that there may be some activity over the weekends. Procedures are as follows: SSB, 145.4 MHz transceive for first quarter of each hour; CW 145.5 MHz searching 144.0 MHz to 144.15 MHz for the second quarter of each hour, and AM on 145.5 MHz searching the entire band (also for FM) for the second half of each hour, but concentrating between 2245z and 2300z on transceive operation (± 20 kHz on 145.5 MHz) for VFO-controlled AM or FM stations. The morning periods are available for SSB and CW contacts, and the band will be searched between skeds for other calls. Operators wanting to make skeds should write to GM8AGU at 87 Findhorn Bay Caravan Site, Forres, Morayshire, or to GM3JFG, *QTHR*.

The G3BA *et al* trip to Luxembourg is still on, and further details will follow. . . . But the G3VER expedition planned for June has unfortunately had to be cancelled.

Home News

G3QG (Luton Hoo) is getting good results and plenty of DX with his new antenna at 130ft. up on a chimney, and a QTH 520ft. a.s.l. One wonders how he finds the time for all the radio activity and also to enjoy his other interest, which is portrait painting. Look for him most evenings around 2000z and onwards.

G3SXX (Cambridge) is getting fine signals on his new converter of rather unusual design. He has 2N4417's in cascade in the front end, followed by a bridge mixer using the HP2900 hot-carrier diodes. The whole device has a gain of about 14 dB, and cross-modulation from the powerful locals is virtually non-existent. The 10 MHz IF second channel was a bit of a problem at first, but this has been eliminated by the use of twin helical resonators at the input.

José Brooker, daughter of Jack Brooker, G3JMB, has the distinction of holding the last of the G3/3

licences. She is G3ZZZ, and hopes to be on VHF shortly.

G3OHH, Mow Cop, Staffs., is now able to receive on 23 cm with a corner reflector at 30ft. He has already heard G3UQK and G3KMS in Salford and Macclesfield respectively. The transmitting gear is still under construction and will be 2C39's and a parabola. Roger is waiting for the better weather for getting the dish up, as it takes four even to lift it! PAØHVA can also now receive on 23 cm and hopes to have the Tx going shortly. He is also planning 13 cm.

Although G8DMH near Birmingham only uses a Heathkit Two'er for transmission on two metres, he is laying down a fine signal in the South. He says that anyone can do it. All you have to do is to QSY to a 590ft. hill and away you go!

G6CW, Nottingham, has now completed nearly 200 QSO's on two metres with PAØPCD. This all arose from a visit which the Dutchman paid to this country last year, and John says that they rarely miss. G5YK, who gave many of us here in the South a first QSO with GM, when he was operating from just outside Aberdeen, is now QRV on Two from Colchester, Essex. He seems to be getting out just as well from there. He was heard working DL and PAØ the other night when conditions were by no means all that good, and no one else appeared to be

doing so. G8COH, Enfield, has now obtained permission from the local authorities to erect a discreet antenna on the roof of the block of flats in which he is living. At 144ft. above street level, and 270ft. a.s.l., an 8-ele beam and a Pye base station are getting him a lot of contacts.

G3KES, late of Coventry, is now in Zambia and operating as 9J2TF. G3NBQ is off to Mauritius, but will come over to this country from time to time. G2JF, planning a trip to South Africa during the coming winter, has been allotted the call G2JF/M/ZS5, which will attract some attention, but two-metre G contacts are likely to be rare! G3WBC is now transmitting slow Morse practice on 144.32 MHz every night except Fridays; look for him from 1930z onwards.

Those looking for Huntingdonshire on Two can take heart. G3VCV, G3LEJ and G8DJK are all now active from that county. G8CRN (Longstanton, Cambs.) is on 70 cm with 10 watts to an 18-ele beam and is looking for skeds, *QTHR*. G8AMD, Sutton Coldfield, now has 625-line interlace AT/V available on 70 cm; he is using a QQV06-40A in the final at present, but has a 4CX250B in a tuned cavity coming along, and that, with the 46-ele beam should do the trick! He reports suffering badly with breakthrough from GB3SC, and this must be a bit of a problem for all the 70-cm

THREE BAND ANNUAL VHF TABLE

January to December, 1971

Station	FOUR METRES		TWO METRES		70 CENTIMETRES		TOTAL pts.
	Counties	Countries	Counties	Countries	Counties	Countries	
G3COJ	20	1	40	8	24	4	97
G3DAH	16	2	41	8	16	1	84
G3OHH	37	5	20	2	13	2	79
G3IAR	31	3	21	4	—	—	59
GD2HDZ	18	3	21	4	9	2	57
G8BKR	—	—	21	4	4	1	30
G8AUN	—	—	26	2	1	1	30
G2JF	—	—	26	4	—	—	30
G8BWW	—	—	19	4	4	3	30
G3FIJ	—	—	24	2	—	—	26
G8APZ	—	—	—	—	16	2	18
G8CYN	—	—	13	2	—	—	15

Just a reminder that the Tables go through to December 31, 1971. The Three-Band Annual Tables show claims to date for the year commencing January, 1971. Claims should be sent to "VHF Bands", SHORT WAVE MAGAZINE, BUCKINGHAM.

workers in that area.

* * *

G3URA, Dick Whittering (51 Percival Crescent, Hampden Park, Eastbourne) would be glad to receive any information about the chap who is pirating his call on two metres. Dick has never been on Two, operates HF bands only and has been QRT for two years. The pirate in question gives his name as "Roland" and is believed to be in the Sheffield area. He also states that he operates /A from Birmingham. Any information straight to the authorities or direct to G3URA, please.

* * *

G3COJ (Flackwell Heath, Bucks) has now got push-pull 4CX250B's going for him in linear on two metres, and a very fine SSB signal it produces, too! He has already covered as many pages of log book in the first three months of 1971 as he did in the first eight months of 1970—some of this, but not all, of course, due to increased personal activity. Incidentally, Brian was a contemporary at Cambridge of J. B. Gunn whose "Effect" was discussed in the April 1971 issue of SHORT WAVE MAGAZINE. Gunn, or "Bang" as he was dubbed in true undergraduate style, is English, although the effect which he discovered originated during his work for IBM in America. While up at Cambridge, he was a member of G6UW, the University Wireless Society, a respected callsign to be heard to this day on VHF.

Paul Quast, EI5BH, Co. Athlone, comes up with some interesting gen on the RTTY side. It seems that the SM and LA RTTY operators are prepared to run an aurora early warning service if the right contacts can be found in this country. They can get their information from the local BC stations (if they cannot see the display for themselves) as warnings are to be sent out with the daily weather forecasts in view of possible QRM with commercial circuits. SM4CMG is the sponsor over there, and it will be interesting to see if anything comes of this idea. Paul has made several attempts to complete RTTY M/S contacts, so far without conspicuous success. He is now thinking about a regenerative repeater after the receiver which will use the incoming signals as sync. pulses to trigger the repeater which will in turn key a pre-set audio signal

generator. A further development in the RTTY world is the proposed inauguration of the "Europa Amateur Radio Teleprinter Group" (EARTG) which aims to foster the exchange of ideas and information on RTTY within Europe. The Group asks for co-operation and participation, and those interested should write to EI5BH, at Post Office Box 73, Athlone, Ireland, for further details.

G3JXN (London) now has SSB on two with a 4X150A and seems to be knocking off the DX very successfully. G3TTG of R.A.F. St. Eval, Cornwall, is moving to Chessington, Surrey, next month and hopes to be active on Two and Four from there. The R.A.F. ARS Hq. station at Locking, Weston - super - Mare, Somerset, is reported running high power and a good beam on Two. The callsign is G3RAF and the frequency 144.186 MHz. They also use G3IRS and G8FC on other bands, the latter mainly on HF, and they are always keen to get contacts with past and present members of the R.A.F., whether members of RAFARS or not.

Welcome to two metres to the first of the G4/3's. G2JF reports working two of them, G4ACP and G4ABQ, both from the Bedford area. G3YDY and G3WSN, both of Chelmsford, have won their battle with the local authorities and have received permission to erect suitable antennae for two metres for a period of five years, when the agreement is to be reviewed. Both they, and their sponsors, G3PMX and G3OZF, will be very happy about this. From Kinloch Rannoch in Perthshire comes a reminder to those contemplating mobile operations in GM this summer that an almost 24-hour watch is kept on 145.8 MHz by GM8APX and GM8ELE, and that visitors will be very welcome. 'APX, who is schoolmastering up there as a fugitive from the Home Counties, has duplicated "swot notes" he uses for instruction in passing the R.A.E. and offers copies to anyone interested. These can be recommended if his pass-rate is anything to go by!

* * *

A real *cri du coeur* from Joost Bergen, G3RND, Godshill, Isle of Wight. During 1970, he piled on 800-watt Honda generator, an HW-

100, an SB-500 transverter and a beam into his car and went two-metre portable at a good site on no less than 25 occasions. Throughout the whole of that time he only clocked up 84 different stations on SSB, and is now asking if it is really worth doing it all over again for probably the same order of result. With over 200 British stations active on SSB on Two, to say nothing of the Continentals, one must agree that the results seem disappointing in relation to the effort involved, although there is many an operator sitting in a fixed station who has got nothing like that number of SSB stations worked in the same number of hours. So how about turning the beam towards the I.o.W. on Monday evenings and having a look for G3RND?

Another plea from the South, or at least the South-West, comes from G8DPV, operating from Cornwall, who says that he seems to have great trouble penetrating the "granite curtain" of Dartmoor, and asks that more beams be directed that way. He also asks that, anent QSU, those operators who announce that they are listening on their own channel after a CQ call, also then come up with a short burst to say whether they *are* being called on channel, since the caller is not always audible to the rock-bound listener, who then doesn't know whether to start calling off-frequency or not. Personally, one might think that it is always worthwhile taking a chance, but this may not be true in all locations and circumstances. John is also troubled by a very low QSL return rate—50 cards from 300 stations QSL'd, and that in spite of a 100% QSL policy. Someone isn't playing very fair!

Foreign News

After the British and French Band Plans comes the Belgian, as follows: 144.2-144.5 MHz, *Antwerp and Brussels*; 144.6-144.9 MHz, *Liege, Limbourg, Luxembourg, Namur*; 145.0-145.3 MHz, *East and West Flanders, Hainault*.

The CW allocation of 144-144.15 MHz and the International SSB calling frequency of 145.41 MHz remain unchanged. One cannot help wondering what goes on between 144.5 MHz and 144.6 MHz, and between 144.9 MHz and 145.0 MHz—or above 145.3 MHz, come to that.

This mention of Band Plans leads one to consider again in this connection the increasing use of VFO's on the VHF bands. There seems to be little, if any, justification for supposing that the allocation of frequencies to specific areas will need substantial modification in this country because of this new development. The idea of Zonal operation is still of great importance as far as making DX contacts is concerned, and for the operator who announces that he is QSU (*listening on own channel first*) it is quite permissible and indeed, desirable, to be able to QSY to the calling frequency (even if outside one's own Zone) complete the contact, and then return to Zone. But persistent operation out of Zone, whether xtal or VFO-controlled, remains a menace.

* * *

One hears often enough that radio amateurs are essentially practical chaps who are prepared to press into use all sorts of unlikely devices to achieve an end, but here is one unexpected trick that comes from PA0WDW. Have you had trouble with clearing solder from holes in PC board without lifting the copper or otherwise damaging the board? If so, proceed as follows: Place the hot iron bit over the hole until the solder melts. Remove the bit smartly and insert into the hole a wooden cocktail stick. Allow the solder to harden and then remove the stick. Result—a nice, clean, round hole. You can do 100 of them like this for about 5p.

TF3EA is still active on two metres. He has a sked every Thursday evening with Johnny Stace, G3CCH in Scunthorpe, between 2100 and 2130z. His frequency is 144.020 MHz and Johnny is on 144.010 MHz.

Beacons and Translators

A new frequency translator is in operation in the Ruhr. Listen for

DL0DG on 145.85 MHz after transmitting on 144.15 MHz (CW).

The constructors of *Oscar Australis*, who had a great success with the satellite in January of last year, are busy on their new project. This will comprise a four-channel NBFM translator accepting signals on 145.9 and re-transmitting them on 432.1 MHz, with a power output of 1 watt. Similarly, the German group headed by DJ4FZA are building the "Euro-translator" which will operate on the same frequencies, but which will have an output power of 10 watts on two metres, and will incorporate facilities for AM, NBFM, SSB, CW, RTTY and even slow-scan TV. The satellites will be launched under the auspices of the U.S. AMSAT Group.

The 23-cm beacon on which PA0DML has been working is likely to be in service by now. The frequency is 1296.5 MHz, QTH Schildwolde. The German 70-cm beacon, DJ2LF, is now in operation and a 23-cm beacon is planned for the same site, a water tower in Dortmund. Frequencies not yet announced.

Later News— Aurora Opening, April 14/15

The night of April 14-15 produced an interesting Auroral manifestation on two metres. Here in the South the first signs appeared at 2330z when GM3EOJ (Aberdeen) was heard with a 56A signal. The effect was intermittent, with best beam heading swinging between N.E. and North, and was in evidence till at least 0300z. The well-known VHF/DX operator UR2CQ in Estonia was peaking 43A in Herne Bay but apparently was a better signal further to the North, judging by the report he got from GM3EOJ. Oddly enough, no PA0 stations were heard, and only one DK.

Consistently good *Ar* signals were noted from SK6AB and SM5DWF,

the latter in position "JT51G", which puts him off the eastern edge of the QRA Locator Map!

A contact of particular interest was that between OZ6OL and G3LTF, who were able to exchange reports using Sideband phone—an extraordinary effect audio-wise.

From Herne Bay, following is a list of the calls heard active during this interesting opening: GM3EOJ, GM2DRD, GW2HIY, SK6AB, UR2CQ, SM6BAE, SM5DWF, OZ6OL, SP2RO, G3LTF, G3USB and G3COJ. The note characteristic of the English (local) stations changed at frequent intervals from T9x to T5A—in other words, they were receivable either direct or by reflection off the Auroral curtain about 2,000 miles away to the North.

If you were not in on this opening, you missed something of quite extraordinary interest.

Twickenham VHF Convention: Held on April 17, this was again a very successful event and well attended, numbers being up a bit on last year. However, in the course of his dinner speech, Mr. Harold Stanesby, of the Ministry, had to announce the reduction of our 70-centimetre frequency allocation to 432-440 MHz, in order to accommodate more business radio and commercial mobile channels. Though the general communication sector of our band, 432-434 MHz, is not affected, it will obviously mean some rearrangement of A/TV frequencies and another look at the Seventycm band plan. The actual date when the reduction to 432-440 MHz takes effect has yet to be announced.

Deadline

Deadline for the next issue is **May 8**, and the address for news, views, claims and comments is: "VHF Bands," SHORT WAVE MAGAZINE, BUCKINGHAM. Cheers for now, and 73 de G3DAH.

SOME MID-WAR TITLES

In the period 1920-'39, between the Kaiser's War and that perpetrated by Hitler, there existed—as some readers at least will well remember—something of a plethora of radio periodicals, generally available on the bookstalls. They were called *Amateur Wireless* (one of the first in the field), *Modern Wireless*, *Popular Wireless* (now called *Practical Wireless*), the *Wireless Magazine*, *Wireless Weekly*, the *Wireless Constructor*, *Radio Review & Short Wave Wireless* (a BBC publication), *Short Wave Magazine* as now is, and, of course, our respected

contemporary *Wireless World*. Of all this lot, only three survive—*Wireless World*, *Practical Wireless* (originally *Popular Wireless*), and *Short Wave Magazine* itself, which first appeared on the scene in 1937. To forestall any possible critical comment, let it be said that we have not forgotten the *RSGB Bulletin*—but this is, and always has been, a subsidised members-only periodical, not available on the bookstalls and not in any sense in the category of being commercially competitive.

THE MONTH WITH THE CLUBS

By "Club Secretary"

(Deadline for June issue: May 7)

(Please address all reports for this feature to "Club Secretary," SHORT WAVE MAGAZINE, Buckingham.)

BACK to something near normal again—for us therefore, back to a "regional" layout, the first group to be dealt with being those whose boundaries are in terms of common-interest rather than parts of the country.

The **British Railways Club** is for amateurs who are employed in the Railway service, and is in regular communion with similar groups in several other countries, the most recent contact having been with a large and active crowd of W's in the same calling.

It is indeed a long time since last we heard of **WAMRAC**—the World Association of Methodist Radio Amateurs and Clubs. This is mainly due to the fact that the secretary, G3NGF, and his XYL have both been in the wars one way and another as far as health goes—so much so that a change of circuit to an easier task was indicated, resulting in the new address shown in our Panel. Nonetheless, the association is still alive, still kicking, still looking out for new members, both licensed and SWL, and very much looking out for the overdue subscriptions of those members who had thought the group defunct.

The **Nigerian Club** newsletters covering two months came in simultaneously, and so it is interesting to notice how much good healthy controversy there is over the vexed question of amateur licences in 5N2-land and the mode of approach to the authorities. It is also of great interest to notice how many folk, having left Nigeria, feel they should keep up their membership—a good thing, this.

Nice to see a copy of *Radial* again with all the news of the **R.A.I.B.C.** members and supporters. This issue contains a very good tale with a twist at the end concerning the installation of North Sea Gas, as well as much news of members and supporters.

The **Royal Navy** society keep in touch by way of their net activities, the **QRQ** runs for the CW merchants—this service is open to all, incidentally—and of course the *Newsletter*, the current one of which is one of the best they have put out for some time.

In a letter regarding other matters, G3SAZ suggests that all SWL's should give very serious consideration to joining a Club—and we could add to that that if you happen to be a **BOAC** employee the one you join could well be the **Speedbird** outfit; G3SAZ is in fact the hon. sec. (address as in Panel p.177) and they have Hq at the Clubhouse, High Street, Cranford, Hounslow, Middx., with G3NAF as the Club callsign.

The **Royal Air Force Club** call, G3IRS, being operated

by G3ZDW, was heard by a VK6 when in QSO with another G on Top Band—the rig at the time was the little Codar AT5. A 'way-out comment is that the operators at R.A.F. Locking confidently claim that the reason there are no flies in Somerset is that all of them hibernate in the Hq station beam rotator!

Quite a long gap since last we heard from the **British Amateur Television Club**. In the meantime they have run off a portable /T trip to GD-land to make the first GW-GD TV QSO; this is reported in their current *CQ-TV*, along with some good articles of interest to anyone concerned with A/TV.

Wales and West

At the instant of writing, this is still a thin clip, as compared with the heavier representation of recent months.

Conway Valley get together every third Thursday at the Parade Hotel, Church Walks, Llandudno, the start being timed for 1930. Each month there is an organised activity of some sort; last time it was a lecture entitled "Chips with Everything," by GW3MZY, while for this month G3AOS will have the attention of members while he talks about "VHF and UHF," on May 20.

A new formation next announces itself. It serves the area around **Bangor** in North Wales, with Hq at **Bangor Technical College**, where they have a booking for alternate Thursdays with the start at 1900. This early start is, of course, to enable them to get in a meeting of reasonable length during College hours. At the time of writing the main pre-occupation of the group is with a special-activity station which they are committed to put on for the National Eisteddfod.

Ever hopeful, the scribe at **Hereford** wrote up his screed during the strike and then "sat on it" until the strike was over, then sending it off with just a covering note of explanation—a labour-saving scheme! Hereford programmes are for the first and third Friday in each month at the Civil Defence Centre, Gaol Street, which is, we gather, very easy to find as it is right under the main Police station! At present the Club station is on HF, but we understand there are plans afoot for VHF operation as well.

Now to Bristol, where the same scribe reports for both the **Bristol club** and for **Shirehampton**. To deal with the latter first, they are operational with the Club station, and are pleased to have several R.A.E. passes to report from G3YOH's classes. There is also rumour of a

DX-pedition they are going to mount. As for Bristol, we are not given any great detail beyond the comment that the programme is well organised and interesting through Spring and into Summer.

The lads at **Barry** (College of Further Education) advise us they are still very much alive and kicking by sending us advance notice—details are elsewhere in this issue—of their annual commemoration of the Marconi-Kemp tests between Flatholm and Lavernock Point; this year one notices they have roped in the Bologna, Italy, group as well.

Although this is a first report, **Thornbury** have been active as a group for a year or more now; from only two licensed members then, the tally has risen to seven, thanks to some hard work on R.A.E. For the summer, they are planning a DX-pedition, to activate Merionethshire. Find them on any Wednesday evening in the Chantry, Castle Street, Thornbury, Glos.

Over in **North Devon**, the form is meetings on May 12 and 26, June 9 and 23 at Crinnis, High Wall, Sticklepath, Barnstaple, Wednesdays at 7.30 p.m., with a start one hour earlier for those grappling with the R.A.E. In his letter, **G4CG**, *QTH Panel*, mentions that there appears to be sufficient interest for the starting of Club in Bude, further down the North Devon coast. Those who would like to go further with this are asked to get in touch with him. (Careful, Bude is in Cornwall!—*Ed.*)

The **Yeovil** boys now meet on Thursdays, instead of as heretofore, in the club room at the Youth Centre, 31 The Park, where they now have a K.W. Atlanta for the Club station, **G3CMH**. On May 6, they have **ZS1KZ**, appearing in person, to talk about Amateur Radio in South Africa; then tape lectures and recordings by **G2BCX** on May 13; and another by **G3DCS** on June 3.

Our copies of the newsletter called *The Cornish Link* prove that this group is as active and as lively as ever, and in a reasonably healthy financial position, the balance in hand being £62. Next meetings are on May 6 and June 3, while over the weekend May 15-16 they will be running a Scout exhibition station at Wadebridge; on July 4 they have their Mobile Rally, ever popular because it is right in the holiday season—we had better have the details about this as soon as may be.

Because we are talking about The West, the **Bangor** (Northern Ireland) Club is included here. Their next meeting, on May 7 at the Silverstream Hall, Belfast Road, should be very interesting—it is to have a talk by old-timer **G15SJ** on the Development of Amateur Radio since 1928. A wide and sweeping subject, if ever there was one! (And the writer of this note should know, as he himself was licensed in 1928—*Ed.*) We fear that as time goes on there is going to be some confusion between the Clubs for Bangor, North Wales and Bangor, Northern Ireland—but we shall do our best to keep them sorted out!

Scotland and the North

Hull's secretary has much to tell now the mails are back again. The big event for them has been their shift of venue to another room in the same premises at 592 Hesse Road, which is bigger, and, which is more to the point, has four sound-proof studios built in it, looking into the main room; this means that the group can run more than one transmitter without audible interference. This accounts for two of them; the third is being used for

R.A.E. classes and Slow Morse, while the fourth is being turned into a library where a member may sit down and read in peace. Turning to the May details, we see a general forum on May 7, with the 14th down as an SWL Night. On the 21st the Top Band rig falls to the lot of **G3RDM**, and to set the month off the 28th is down as "Bash it, Bend it, and Drill it!"—whether in theory or practice our reporter does not say.

The crowd that used to be known as **Pudsey** has now grown and changed its name to the **White Rose Radio Society**. Hq, at the moment, is the White Horse Hotel, Armley Town Street, Leeds, where they are to be found every Wednesday evening. On-the-Air activity is by way of a Top Band net on Sunday evenings at 1930 clock, and there is a proposal to run one on Four as well in the foreseeable future.

Also in Leeds is the **Star Short Wave Club**, who take their name from the Star and Garter Hotel, Bramley Town Street, Leeds, 13, where they have Hq. For them also, Wednesdays each week is the form, starting at 8.0 p.m. On the last meeting of each month, there is a lecture, and on other evenings there are Top Band and Two-Metre rigs to be fired up.

Northern Heights are next on the clip, mainly with April news, among which one notes with amusement that this time the hon. secretary would make no prophecies as to whether or no he would manage to get "off the hook," after umpteen years in the job. Looking on to May 8, we note they are booking **G3ADQ** to talk on SSB.

Tape Lecture

Still with **Northern Heights**, **G3MDW** adds a rider to the effect that at long last he has some spare dates for both the Mark 1 and Mark 2 versions of the **W1BB** tape-and-slide lecture, covering Top Band DX'ing and people. Both are well worth booking for a Club showing and fill in an evening nicely—for details write to **G3MDW**, address as in Panel for **Northern Heights**.

Newly formed is the club at **Billingham** on Tees-side, where they are going to work to a weekly schedule, the booked dates being Wednesdays. For the moment they are "running-in" and trying to assess their chances of supporting a club in the future, and will hold an AGM after six months to decide on a permanent name. The Hq is very well-placed for erection of aerials, and permission is already verbally given. A programme is being formulated, and special-activity stations being organised for **Billingham Fête** in early June, as well as the **Billingham Show** in late August, to help attract new members. Membership, we understand from a later letter, is increasing fast and anyone is very welcome on the specified evenings at the **Billingham Community Centre**.

A sad note from **Spenn Valley** advises the death of their Hon. Sec., **Norman Pride**, **G8BSC**, who had held the post for twenty of the 22 years of his membership and had done a great deal to build up the Club—a fine record of service, which will be sorely missed indeed. However, the show must go on, and so we find on May 6 **G3HCW** lecturing on VHF Aerials, followed by a meeting at **Bradford University** when the subject will be "Lasers." Then, on May 20, **G8AAC** is booked to talk about 420 MHz. All the meetings of the club, unless otherwise stated, are at the Hq, the Grammar School, Heckmondwike.

At **Wakefield**, the arrangements are meetings at the

Youth Centre, Zetland Street, on May 4, when G3MFJ discusses Time Lapse Photography; on May 18, the Club call G3WRS is featured under the heading Operational and Constructional; and on June 1 they have a junk sale. Start time is always 7.30 p.m.

Our old friends up at **Lothians** (Edinburgh) have a Post Office talk on TVI on May 13 and they brief for NFD on May 27; times 7.30 p.m. at 66 Hanover Street, Edinburgh 2.

The **Border** boys meet on May 2 at the Tweed View Hotel, Berwick-on-Tweed and, this being a Sunday, the time is 3.0 p.m., when G6UC will launch out on the vast, entertaining and very important subject of Aerials. Their future events have yet to be finalised but we gather that they hope to organise a Mobile Picnic for June 6.

For their Social Evening on May 15, the **Yorkshire Television Amateur Radio and Television Society** have to stipulate that all members, friends and visitors must be over 18 years of age—because the party is to be held on licensed premises and the law must be observed. The basic idea is an “eyeball with high-ball” occasion (but where and at what time we are not told). However, hon. secretary G8DCT can put you right on this and we note that he writes from the “O.B. Sound Dept., Unit 1.”

The Midlands

The Hq of the **Rugby** crew is at 10 Drury Lane, where they foregather every Tuesday at 8.0 p.m. However, their AGM, which comes up on May 25, is being taken in the small lecture room at the Percival Guildhouse, Rugby, starting at the same time as usual.

On to **Lincoln**, where the venue is No. 2 Guardroom at Sobraon Barracks, Breedon Drive, off Burton Road, Lincoln. May 4 is an “away night” in that they have a visit to a telephone exchange teed up. On May 11, they have an operating Night, and on May 18 a Treasure Hunt. This leaves May 25 for an Open Night. This crowd make a special mention of the fact that visitors and prospective new members are always welcome.

Now to **South Manchester**, where we have much to tell. The usual weekly sessions will be continued at the Conservative Hq 449 Palatine Road, Manchester 22. After May 28, the Friday evening sessions are moved to a new Hq at Sale Moor Community Centre, Norris Road, Sale. However, May 7 is D/F Practice; May 14 the AGM; May 21 a talk on VHF by G3FNM; and May 28—the last at Palatine Road—is an Activity Night. As if all this were not enough, they have a VHF group, who can be found at “Greeba,” Shady Lane, Manchester 23, any Monday evening.

Lots of news to catch up on in the **Wolverhampton Newsletter**; but we must mention here the request to all members and visitors to be careful when parking near Hq, which is at Neachells Cottage, Stockwell End, Tettenhall. Please don't block any drives or entrances; please don't park in the yard, unless you have something bulky to bring into the clubroom; and if parking in the private lane immediately adjacent to the cottage, don't block the gate into the yard, or make things awkward for pedestrians. Now, to the equally important question of “what's on?” And to this we have to say that we don't know, at least as far as the May syllabus is concerned, albeit we know that something will be going on on most Monday evenings, and that the first and third ones will

be set aside for the lectures.

The Annual Open Night of the **Government Communications** group comes up on April 23, which means it will be gone before publication; but it is an annual “do” so now is the time to make sure you are forewarned next year!

The May meeting of the **Midland** lads will, as ever, be at the Midland Institute in Margaret Street, the date being the 18th; but at the moment we have no news of the subject.

A humorist is at work in **Wirral**—he starts his newsletter by saying “If you are reading this, your copy has reached you!” The Hq is at Harding House, Park Road West, Birkenhead, and the plan to foregather on alternate Wednesdays. May 5 we note as being down for G2FOS to talk on “Scope for Measurement,” and May 19 for a discussion on Field Day details.

Mid-Warwickshire assemble at 28 Hamilton Terrace, Leamington Spa; May 3 sees them having an evening out—a visit to the very fine P.O. long-distance Radio Station at Bearley, with the rendezvous at 1930. On May 10, G3HCM takes the stand to describe simple resistance and capacitance measurements, while May 17 is for D/F, mc., by G3OOQ. May 24 is set aside for G8CSS, who is to take Transistors for his theme. As for May 31, that date is the Spring Bank Holiday and so the meeting is cancelled.

A few weeks ago the Annual General Meeting of the **Stourbridge** crowd took place; and the result reflects in our Secretaries' Panel opposite. All the details of the programme, which takes place on the first Tuesday of every month, can be obtained by contacting him. The Hq, incidentally, is Longlands School, Stourbridge.

Newark have an informal every Tuesday for a bit of Morse, transmitter-on-the-air, or plain ragchew. In addition there is a “formal” on the first Friday in each month when a guest speaker gives a talk on some topic of interest. All are at the Newark Technical College; the informals start from 1900, and the lecture meetings at 1930.

Just having been elected by the AGM the Radio Club of **Nottingham** committee are busy cooking up the calendar of events, on top of those—such as NFD and special-activity stations—to which they already have commitments, like the “Nottingham Festival '71.” To find the result of the committee's deliberations is easy—just show up any Thursday evening at Sherwood Community Centre, Mansfield Road.

The May meeting of the **Cheltenham** group is down for the 6th, the venue the place that used to be called “the Great Western”—it apparently has been renamed and at the time of writing the *Newsletter* no-one had noticed what the new name is! If you don't recall the ex-Great Western, perhaps you are best advised to contact G2FWA—see Panel.

Derby next, and their Hq is at Room 4, 119 Green Lane; they have a Surplus Sale down for May 5, followed by a demonstration of meters and their uses. May 19 is a D/F Practice, and on the 26th the subject is “Contest Operating and DX Listening.” Finally on May 31, there is an exhibition station at the County Show at Elvaston.

Now to **Solihull**, where the first opportunity to meet the boys will occur if you walk into the rear bar of the Malt Shovel, High Street, on May 4, from 9 p.m. onwards.

This is the informal; the "proper" meeting comes up on May 18 at the Manor House, High Street, when one of the Post Office folk will be coming along to talk about the Post Office Tower in Birmingham, as preparation for a later trip to see over that imposing pile.

If you are anywhere in the North Midlands or

North of England, you will be interested in the **Northern Radio Societies Association** who are having their Annual Convention and Exhibition at Belle Vue on May 9. Member societies will have a stand each, and the trade will be represented; in addition there will be a special-activity station operating, licensed bars, a film show for the weary

Names and Addresses of Club Secretaries reporting in this issue:

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 WIRRAL: A. Fisher, G3WSD, 34 Glenmore Road, Oxton, Birkenhead (652 5078), Cheshire.
 WOLVERHAMPTON: J. P. H. Burden, G3UBX, 28 Coalway Road, Wolverhampton, WV3 7LX, Staffs.
 WORCESTER: G. Spink, G3WUI, 1 Belvoir Bank, North Malvern, Worcs. WR14 4LY (Malvern 3088).
 YEOVIL: D. L. McLean, G3NOF, 9 Cedar Grove, Yeovil, Somerset.
 YORKSHIRE (Television, Ltd.): A. P. Flood, G8DCT, Yorkshire Television, Ltd., Television Centre, Leeds LS3 1JS.

ones in the afternoon, the inevitable raffle—and of course, for the XYL and the junior ops the magnet will be the Zoological Gardens at Belle Vue. Finally a small aside; the **Stockport** group Hon Sec, G8BCG, sent all this information in lieu of a report on his own club—so all we can say about Stockport is that they will be at the show, but if you want to find out more of them we must refer you to G8BCG, address as in Panel, p.177.

Bromsgrove make one of their rare appearances to tell us that the hon. sec. has been re-elected once again, along with the chairman and treasurer. On the second Friday in each month the gang foregather in the "Royal Oak," Barley Mow Lane, Catshill, and in addition they are keen on running outside events of one sort and another.

At **South Birmingham** there seems to have been a change of secretary and Hq since last we heard from them. Their rendezvous is now Hampstead House, Fairfax Road, West Heath, and here they will be found on May 5, listening to Mr. Parish of Langleys, who will be informally discussing and demonstrating the Langley range of equipment racks and enclosures.

A nice long letter from the **Coventry** secretary brings us up to date with the doings in that area. A recent visit to one of the new "commercial" radio stations yielded at least half-a-dozen mentions of the club on the air—valuable publicity indeed! They are hoping to visit Radio Birmingham just before this reaches the reader, so no doubt they will become known in that part of the world as well. The May programme is a little provisional, in that some confirmations are still to come in, but can be taken as Nights-on-the-Air on May 7 and 21, plus a talk on RTTY for May 14 and a lecture on VHF/TV on May 28. If they do have any late changes, the latest news can be obtained by contacting the hon. secretary—see Panel.

The latest we have from **Worcester** is their March *Newsletter* from which we get it that their next meetings, at the Crown Hotel, Broad Street, are on May 15 and June 12, with a Mobile Rally in prospect for July 11; we hope to have details of this in good time for appearance in the appropriate space. The big event during April was to have been the judging for their annual constructional contest—not many Clubs are able to stage such an event these days, though indeed much very good constructional work does go on all over the country.

One of the newer formations is **Bicester**, meeting every Wednesday and Friday at their own premises—11 Stoneburge Crescent—where they hope shortly to have a Tx installed. Morse classes are run weekly and several constructional projects are under way.

Round The South

Our first mention must be for a new group reformed after a lapse of no less than 32 years. **Horsham**, in their revived form, are to be found at the Swan, West Street, in the club room, on the first Wednesday of each month. In addition, on every Monday and Friday evening G3VPO runs Morse practice. New members are of course welcome, but in addition the committee would like to hear news of any members of the original Club, or of its activities in those distant days. Can anyone help? If so, contact G3PYC, as Panel, or pop into a meeting if you can.

A completely new formation is in process of getting going for the **Chichester-Bognor** area. The initial meeting is to be at the Boys Lancastrian School, where G3PC seems to be Headmaster. At the moment, the form seems to be that they assemble on the first Tuesday and third Thursday of each month.

A change of Hq has come up, for, of all people, **Grafton**—one would have thought their place in Isledon Road had been theirs since the year dot! Now, however, they are to be found at Whittington School, Highgate Hill, London, N.19, each week.

It is quite a while since we last heard from the **Paddington** lads; but it seems they are going strong, and still in their old Hq at the Beauchamp Lodge Settlement, 2 Warwick Place, London, W.2. For all the gen contact G8AWV, as in Panel, p.177.

At **Greenford** the form is alternate Fridays, as it is for so many groups. This gives April 30, May 14, and May 28 are the dates of direct interest and the venue the Greenford Community Centre, Oldfield Lane.

Gosport and Lee-on-Solent get together every Monday evening at 19 Pier Street, Lee-on-Solent, says the new hon. secretary, G3UWI. What is more they always like visitors, and so there is an open invitation to pop in or make contact through the nets which are run on 2, 4 and 160 metres.

North Kent have the most important meeting of the year in May—the 13th is the date for the Annual General Meeting—but they don't tell us where the Hq is, so once again we have to refer you to the Panel.

At the time of writing we do not have the latest details of the **Purley** programme, for which we refer you to G3FTQ—but we can say the Hq is, as far as long as your conductor can recall, the Railwaymen's Hall, Whytecliffe Road, Purley.

Again, for **Sheffield** we have no details as far on as May, although we can say the form is of weekly sessions on Thursday evenings, at the Church Hall on the road to Amptill.

It looks like the second Thursday each month for **Mid-Herts**. Although we cannot tell you for certain what goes on in May, April 8 was all for G5UM, back in his old stamping-ground, to tell the newer ones all about "25 Years of Mid-Herts Radio."

Although we have both the February and March issues of the **Southgate** news-sheet, we are, unfortunately, not able to give the details on their next meetings. However, we do know that the secretary will be only too pleased to tell you, and bring you into the ring.

On now to **Cray Valley**, where we are given May 6 as the date when G4KD is to talk. This is followed on May 20 by a Natter Nite, both dates being at Eltham Congregational Church Hall, London, S.E.9.

A new name for an old club next; the one we all used to know as **Thames Valley** now prefers to call itself "Hampton Court (TVARTS)" so as to indicate the part of the Thames Valley it aims to serve. They have a place at the Three Pigeons, Portsmouth Road, Long Ditton, Surrey, where they assemble on the first Wednesday in each month. The May meeting features Bob Tillin, G3MES, and his Antenna Noise Bridge, and the June one, naturally, is preoccupied with Field Day.

Echelford, we note, are still growing steadily, and it is understood that at the time of the AGM there were no

less than 149 members on the books, among them several YL's and XYL's, one of whom has just been licensed as G8ENX. Your next chance to get to know the group—and G8ENX!—is May 10, when Mr. Blatt of RCA's Training Department will present the "Principles of PAL Colour Television." May 27 will bring in Mr. J. R. Turner of the GPO Telecommunications Office, who is to talk about the Interference problem, licensing of radio-mobiles, and so on, as well as the Amateur Radio interests of the club. One notes with amusement that the newsletter advises pirates *not* to attend! The venue for this one is, as always, at The Hall, St. Martin's Court, Kingston Crescent, Ashford, Middx.

Although they have been in existence for about a couple of years now, the **Haverhill** crowd have recently started an intensive publicity drive in the hope of roping in as many as possible of the local radio-minded types. The club meets on alternate Wednesdays at Leiston Hall Community Centre, Clements Estate, Haverhill, starting me being 7.30 p.m.—and they really *would* like to see you there!

At **Wimbledon**, regular meetings are held on the second and last Fridays in each month at the St. John's Hall, 124 Kingston Road, South Wimbledon, from 8.0 p.m. We are told that the Club is in a "sound financial position" (good, that's the way to be) and that even after the acquisition of a KW-2000 for their own station G3WIM, there is some cash in hand. At the Club QTH they have an inverted-Vee aerial and it will be in use on May 14, when they have a CW session—and on this occasion they will be running a simulated G.P.O. Morse Test for those concerned. (A very good idea, this.)

The **Wessex** group (Bournemouth) have a series of D/F events planned for the summer months and, being in what is described as "a solvent condition financially," propose to purchase some equipment for contest work.

From the compendious **Mid-Sussex Matters** we get it that the Club meetings forthcoming are on May 6, May 20 and June 3, 7.45 p.m. at Marle Place, Leylands Road, Burgess Hill. There is some useful and interesting material in the April issue of their publication.

A brief note from **Stevenage** announces that their regular sessions are on the first and third Thursdays of each month, at Hawker-Siddeley Dynamics, Ltd., Gunnels Hill Road, and that they welcome new members. Subjects for May 6 are Semiconductors, by G3TIK, and on May 20 a discussion on future projects.

The **Kingston** group have their meetings at the Penguin Lounge, 37 Brighton Road, Surbiton, 8.0 p.m. on the second Wednesday of the month, making the next May 12 for an Introduction to IC's, by G3GVU, while on June 9, the subject is to be A Modular D/F Receiver, by G3OSQ—this should be interesting, and we too would like to hear more about it.

On May 7, the powerful **Crawley** group kick up their legs, as the saying is, when they have their annual dinner-dance at the local Airport Hotel—this is always a lively and well-supported event; tickets and information from G3FRV, *QTHR*, or the hon. secretary. On May 26, the meeting at Trinity Congregational Church Hall, Ifield, will hear a talk by G3NMH on Contest and DX Operating.

Over at **Basingstoke**, the gathering-place is Chineham House, Shakespeare Road, Popley, where the doors open

at 7.0 p.m. prompt on May 1 (constructional work and Morse practice) and on May 15 for a talk and demonstration of Transistor Transmitters by G8CKN. This group is hoping to increase its membership and widen its scope—get in touch with the hon. secretary about joining.

Lowestoft Hospitality

The boys over at Lowestoft are running what must surely be a unique exercise in the context of Amateur Radio hospitality. During the Summer holiday season they will be keeping on-the-air watch for any /P's or /M's operating in the Norfolk-Suffolk area—this to include not only those in cars but anybody operating /M from a Broads cruiser. By QSO, and by listening to the contacts being made by the visitors, they plot position and work out where the "target" could be at some convenient time. He is contacted, met with, or otherwise "accosted" by a member of the hospitality committee, and then inveigled to the Lowestoft Club Hq for a session of "good old radio amateur hospitality."

A very nice idea, as well as being most generous in its concept. And that the scheme works is proved by the fact that during last Summer season some 14 unsuspecting radio amateur visitors to the area were successfully "intercepted" and entertained, in many cases with their families. Watch is kept on Top Band and Two Metres—so you know what to expect!

Of course, if you are contemplating a non-radio holiday in those parts, you can easily make contact with the Lowestoft group by getting in touch with: G. E. Grimmer, G3KJU, 58 Kirkley Run, Lowestoft, Suffolk.

For Next Time

And that just about brings matters up-to-date, so far as we have been informed—anyway, we hope that the gap caused by the postal hiatus has now been closed.

We would particularly remind those who report for Clubs that they should be sure to include the secretary's name, callsign and QTH (also 'phone number, where applicable) for the important Secretaries' Address Panel; the location for meetings, with start time and the programme for the month following the date of issue of the *Magazine*. This basic information is asked for every time your report is sent in, so as to avoid mistakes and misunderstandings at this end.

For our June issue, therefore, the deadline is **Friday, May 7**, addressed as always to "Club Secretary," **SHORT WAVE MAGAZINE, BUCKINGHAM**—incidentally, for some unaccountable reason certain Club scribes *still* send their reports to our London office. Of course, we don't mind this—except that, taking weekends into account, such reports can take up to five days to reach the right quarter, by which time they are usually too late to catch the current issue!

FORWARD DEADLINE DATES

For "Month with The Clubs"—**May 7** (June issue); **June 4** (for July); **July 9** (August); **August 6** (for September issue). This should ensure Club reports being on time for the next few months! Address: "Club Secretary", **SHORT WAVE MAGAZINE, BUCKINGHAM.**

NEW QTH's

This space is available for the publication of the addresses of all holders of new U.K. call signs, as issued, or changes of address of transmitters already licensed. All addresses published here are reprinted in the U.K. section of the "RADIO AMATEUR CALL BOOK" in preparation. QTH's are inserted as they are received, up to the limit of the space allowance each month. Please write clearly and address on a separate slip to QTH Section.

- DA2XT**, M. G. Taylor (*G3UCT*), R. Signals, 3 Von Stauffenberg Strasse, 4811 Oerlinghausen, Western Germany.
- G2MU**, E. J. Bayliss, 30 School Lane, Kenilworth, Warks. (*re-issue*.)
- G3YXF**, C. Ford, Clock House Flat, Knowle Lane, Cranleigh, Surrey.
- GM3ZSH**, J. Donaldson, 7 Seamark Place, Ballingry, Lochgelly, Fife.
- G3ZTU**, J. R. Mace, 10 Walkers Lane, Leeds, LS12 4AP.
- GM3ZXL**, A. Allan Jnr., 2 Holding Lanrig, Chryston, Glasgow.
- GW3ZXT**, E. G. Liebert, Five Acres, Baclaw, Conway, Caerns. (*Tel. Conway 2307.*)
- G3ZXZ**, M. Stokes (*ex-G8DMG*), 4 Thornleigh Avenue, Thornes, Wakefield, Yorkshire.
- G3ZYQ**, A. L. Robinson, 67 Lincoln Road, Enfield, Middlesex. (*Tel. 01-363 3363.*)
- G3ZZB**, P. J. Bonfield, 9 Hillsea Road, Swanage, Dorset, BH19 2QL.
- G3ZZD**, S. Ireland, 10 Chestnut Avenue, Southborough, Kent.
- G3ZZK**, D. H. Jones, 230 Roman Road, London, E6 3SL (*Tel. 01-476 4050.*)
- G3ZZP**, D. Matthews, Woodland View, Clock Face Road, Bold Heath, Widnes, Lancs.
- G3ZZS**, R. M. Wills (*ex-G8EBE*), 148 Churchway, Weston Mill, Plymouth, Devon. (*Tel. Plymouth 31707.*)
- G3ZZT**, R. W. Perrow, 17 Wearmouth Drive, Sunderland, Co. Durham.
- G3ZZZ**, Miss José Brooker (*ex-G8DLO*), 20 Farnham Avenue, Hassocks, Sussex.
- G4AAA**, M. V. Hill, River Glade, Cross Hall Road, Eaton Ford, St. Neots, Hunts., PE19 4AB.
- G4AAB**, London DX Club, c/o L. S. Margolis, 95 Collinwood Gardens, Clayhall, Ilford, Essex.
- G4AAQ**, P. N. Butterfield, 33 Grime Lane, Sharlston Common, Wakefield, Yorkshire. (*Tel. Crofton 353.*)
- G4AAZ**, R. G. D. Moreton (*ex-G8EAZ*), 2-A Portland Road, Hove, Sussex.
- G4ABB**, A. E. Green, 17 Park Avenue, North Walsham, Norfolk.
- G6AGF/T**, W. H. Jarvis, Cluain na Coille, Dall, by Rannoch Station, Perthshire.
- G8EBP**, R. A. Royall, The Rectory, Newby Place, Poplar, London, E14 OEY. (*Tel. 01-987 3133.*)
- G8EFH**, E. Merriman, 5 Raymont Grove, Park Farm Estate, Great Barr, Birmingham, B43 7PP. (*Tel. 021-357 7238.*)
- GM8ELE**, R. Chalcraft, Rannoch School, by Rannoch Station, Perthshire.
- G8ENH**, F. J. McGregor, 2 Roydstone Road, Bradford Moor, Bradford, Yorkshire, BD3 7EH. (*Tel. Bradford 664404.*)
- G8ENZ**, W. Tatum, 18 Elmbank Avenue, Englefield Green, Egham, Surrey. (*Tel. Egham 5737.*)
- G8EOJ**, E. B. March, 16 Railway Triangle, Poundbury Road, Dorchester, Dorset.
- G8EOV**, B. P. Cross, 29 Masefield Road, Wheatley Hills, Doncaster, Yorkshire. (*Tel. Doncaster 69938.*)
- G8EPH**, C. W. Kilvington, 648 Stannington Road, Stannington, Sheffield, S6 6AE. (*Tel. Sheffield 345572.*)
- G8EQA**, P. G. Wood, 146-A Elms Vale Road, Dover, Kent.
- G8EQB**, A. Vickers, 25 Horatio Street, Roker, Sunderland, Co. Durham, SR6 ONJ.
- G8EQQ**, S. Emlyn-Jones, 35-A London Road, Southborough, Tunbridge Wells, Kent. (*Tel. Tunbridge Wells 28935.*)

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- DL2AH**, J. T. Worrall (*G3XBA*), 1 Div. H.Q. & Sig. Regt., B.F.P.O. 32.
- G2BNZ**, D. Markland, 64 Georgina Street, Bolton, Lancs.
- G2CGQ**, P. B. Archer, 167 Euston Road, Morecambe, Lancs.
- G2FQD**, A. L. Rogers, 12 Woodridings Court, Crescent Road, Bounds Green, London, N.22. (*Tel. 01-889 4022.*)
- G3FAE**, A. B. Perry, 42 Southport

Road, Chorley, Lancs.

G3FNO, G. W. Morgan, 36 Manor Park Avenue, Princes Risborough, Bucks.

G3MLN, B. Pettman, 1 Mymms Close, Chestfield, Whitstable, Kent.

G3MQU, R. M. W. Rash, 5 Victoria Road, Diss, Norfolk.

G3PFJ, J. D. Harris, No. 3 Chimney Mill, West Stow, Bury St. Edmunds, Suffolk.

GM3PRV, J. R. Ashton, 8 Lynne-wood Place, Dundee, DD4 6NE.

G3RDC, A. F. H. Wood, 54 Elkington Road, Yelvertoft, Rugby, Warks.

G3RKZ, B. R. Tibbert, 11 Darwin Road, Mickleover, Derby.

G3TBW, T. H. Westbury, 1299 Evesham Road, Astwood Bank, Redditch, Wors. (*Tel. Astwood Bank 2015.*)

G3VMW, S. Wilson, 5 The Ruddings, Wheldrake, York.

G3VOF, M. G. Foster, 64 Station Road, Over, Cambs.

G3WMA, W. P. Shepperd, 3 Chater Road, Oakham, Rutland.

G3WNI, W. A. Lindsay-Smith, 12 Curtis Road, Ashdell Park, Alton, Hants.

G3WRI, P. A. Brown, 7 St. Davids Road, Leyland, Lancs., PR5 2XX.

G3WZT, J. R. Matthews, Kings Down, Church Street, Partridge Green, Sussex.

G3XPA, R. W. Bevan, 158 Widney Road, Bentley Heath, Solihull, Warks.

G3YQC, J. L. Wood, 54 Elkington Road, Yelvertoft, Rugby, Warks.

G6YH, J. K. Haynes, 12 Ashley Park Road, Walton-on-Thames, Surrey.

GM8DOX, I. L. McKechnie, 20 Maclachlan Avenue, Denny, Stirlingshire.

G8DRS, P. J. Pennington, 146 Elms Vale Road, Dover, Kent.

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G8ADP, C. G. Elliott, Eastleigh Orchard, Dawlish Road, Teignmouth, Devon, TQ14 8TG.

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MANUALS: For B.40, RA-17, BRT-400, Cossor 339, Collins TCS, CR-150, all at £1.75. CR-100, CR-300, AR88LF, S.27, SX-28, Airmec 864, £1.25; postage 9½p extra. About 120 others, list available.—Brooks, 5 Farrant House, Winstanley Road, London, S.W.11.

WANTED: To buy or borrow, Vols. I and II of the "Surplus Radio Conversion Manual" by Editors & Engineers; also issues of "CQ" for May 1958 and October 1956; full conversion details for the R.3673 VHF receiver. REQUIRED: R.216 Rx and PSU; also AN/APS-10 or similar light-weight search radar.—Wright, Forge Cottage, Ousden, Newmarket, Suffolk.

SALE: Mobile Rig CSE 2A10-2AR Tx/Rx, transistor, with CSE 160m. aerial, microphone, 12v. pos. or neg. earth, perfect, £48.—Bishop, G3GGG, QTHR (Didcot 2308).

WANTED: T.W. Communicator-2, 144-146 MHz, in good condition.—Wheeler, G3RTW, 22 Brickhouse Lane, Stoke Prior, Bromsgrove (73313), Worcs.

FOR A Hallicrafters SX-133, with matching speaker, brand new, at £80; a Swan 500 C with new valves, £250; and an as-new Shure 444T microphone, £10, ring 01-592 7800.

SALE: R.C.A. AR88D receiver in excellent condition, £38. Avo Model-7 Testmeter, as new, in case, £16. R.C.A. electronic teleprinter terminal unit, £12. TF-144G signal generator, as new, £17. Solartron 523S oscilloscope, mint, £33. Solartron 643S oscilloscope, £35. R.C.A. 8516 receiver, £125. Will deliver receivers to 50 miles.—Ring Lord, G3PHN, Swadlin-cote (Staffs.) 7537.

WANTED: Good quality heavy Morse key and mains BC 221. **SALE:** Command BC-455, BC-454, Woden UM1 and G3HSC Morse record.—Ring Pratu, Reading 882130.

FOR QUICK Sale: Eddystone 840A receiver, factory overhauled; Codar PR-30X preselector; Joystick de luxe (as new) with tuner box for 10 to 160m.; and two pairs headphones. £55 or near offers, delivered free 30 miles radius Kelso, Scotland, or carriage paid owner's risk anywhere U.K. mainland.—Box No. 5006, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

SALE: Original G3HTA Rx, S-meter, circuit diagram, etc., professional appearance and construction, price £35. T.28 receiver, £11. Pye base station, 4 metres, £8. Converter for 4 metres, £5.—Raojohns, G3YBG, Quarries Bungalow, Barley Lane, Exeter (74607), Devon.

OFFERING: K.W. Viceroy Mk. IVB CW/SSB Tx, internal relay and PSU, 6146B PA, extra half-lattice filter, has made DXCC, in mint condition, £105 or near offer.—Twist, G3LWH, 80 Bell Barn Road, Stoke Bishop, Bristol, BS9-2DG.

WANTED To Buy: Transmitting gear, mobile or fixed station, AM or SSB.—Johnson, Eller How, Princes Road, Windermere, Westmorland.

SALE: KW-2000B, with Q-Multiplier and AC/PSU, in mint condition, price £185, will deliver in Greater London area.—Belger, G3JLB, QTHR, or ring OGR4-4694.

WANTED: Electroniques QP-166 Front-End, in any condition.—McFaul, 48 King Street, Waterside, Londonderry, Northern Ireland.

FOR SALE: Heathkit RA-1 receiver, considerably modified, three ½-lattice filters, crystal controlled, product detector, 100 kHz calibrator, etc., price £25. Electroniques amateur-band front-end, perfectly aligned 1620 kHz, £6.—Ring Daw, Northampton 37944 or Chapel Brampton (Northants.) 2602.

SELLING: Heathkit RA-1, with crystal calibrator, good performer, £25 or near offer. Prefer buyer collects.—Jones, 26 Belgrave Road, Bingley, Yorkshire.

SALE: National HRO receiver with all general-coverage coil packs, very clean, fair condition, suit young SWL, first £6-50 secures, buyer to collect.—Beeston, 262 Nine Mile Road, California, Wokingham, Berks., or ring Eversley 3674 after 6.00 p.m.

WANTED: Racial RA-17 receiver, or equivalent, must be in excellent condition mechanically and electrically, price range envisaged £150-£200.—Kidd, 38 Kelso Gardens, Leeds, LS2-9PS, before May 7.

WEANED on War-time equipment, I am at long last ready to become a radio amateur. An old newcomer, I am looking for really first-class equipment to start operating. Open to any offer and all letters will be acknowledged. **Also Wanted:** a B2 Set, absolutely complete and in FB order; this would bring back memories—are there any left?—Miller, Ingleby, West Road, Newport-on-Tay (3113), Fife, DD6-8HP, Scotland.

WANTED: An R.C.A. AR88 receiver. Selling: Heathkit RA-1 Rx, with speaker, xtal calibrator and manual, £25.—Whittaker, G3WEN, QTHR.

SELLING: CR-100 receiver in clean condition, £10. "G2DAF-type" Tx and PSU, in Philpotts cabinet, with Kokusai filter, in good working order, £25. Also a K.W. Vanguard AM CW transmitter, coverage 10 to 80m., offers? Prefer buyers collect (Midlands).—Box No. 5003, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

SALE: Hallicrafters SX-111 receiver and speaker, in excellent condition, £60. Collins 500 kHz mechanical filter, 3-1 kHz bandwidth, £9. B & W PSN, £2.—Box No. 5002, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

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SELL: Avo Signal Generator Type CT.378, 2.0 to 225 MHz, £16. Taylor Signal Generator Type 68A, coverage 100 kHz to 240 MHz, £12. Noise Generator Type CT.82, £3. Buyers collect.—Grigg, G3PRX, 72 Elmstone Road, Rainham, Kent.

FOR SALE: Mosley TA-33, £17. K.W. Viceroy Mk. II CW/SSB Tx, with matching PSU, £65. Eddystone EA-12 receiver, £135. Eddystone EC-10 Rx, £25. Linear for two metres, 2/4X150, all PSU's, coax relay, etc., £55.—Earl, G3OXV, QTHR, or ring Daventry (Northants.) 2265.

SELLING: Honda E.300 generator, new, only two hours power-strike run, £65. Lafayette HA-500 receiver, only modification bandspread 160m., spotless, £32.50. Codar A.T.5 and mains PSU, very good condition, £18.—Wallis, G3YJI, 17 Meadowside, Walton-on-Thames (23228), Surrey.

SALE: Eddystone 840C, needs trim up, price £30, collect on a Sunday.—15, Waverley Gardens, Grays, Essex.

OFFERING: Labgear LG.300 Tx and companion Mod/PSU, AM/CW coverage 10 to 80m. running 150 watts, in excellent condition, can be seen operating. Offers?—Giddings, G3XLB, 24 Park Avenue, Formby (71968), Liverpool, Lancs.

SALE: Eddystone EB-35 receiver, in immaculate condition, price £40. Also a chassis Gram/VHF/Mono, £10.—Foster, 72 Vimy Road, Billesley, Birmingham, 13.

FOR SALE: K.W. Vanguard Tx, in nice condition, requires slight attention, £23 quick sale, buyer to collect.—Clarke, G3DWA, QTHR, Tel: Kirkham 2573.

SELLING: Panda Cub Tx, AM/CW 10 to 160m., mint condition, £20. Codar CR-70A Rx with Codar preselector, mint, £20. All items carriage extra. (Kent.)—Box No. 5004, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

FOR SALE: Marconi CR-100 receiver, with S-meter and noise limiter, £15. K.W. Vanguard transmitter, £25.—Trull, G3RAD, 1 Approach Road, Broadstairs, Kent.

WANTED: Four-metre AM/CW QRO Tx for base station, size unimportant but must be in reliable working order. Also a mobile Tx/Rx for two metres.—Haylock, G3ADZ, Bowyers, Steepmarsh, Petersfield, Hants.

SELLING: T.W. two-metre Communicator Mk. II, very little used and in mint condition, complete with two xtals, £40. Complete portable station comprising all-band KW-76 Rx, home-built all-band Tx running 40w. input and series-gate modulated, transistorised PSU, with relays, mike, key and heavy-duty connecting leads for 12-volt battery supply, all mounted on baseboard. The lot a bargain at £30.—Tapson, G6IF, 1 Squirrel Lane, Booker, High Wycombe (20733), Bucks.

WANTED: Faulty CR-100 receiver. Any condition acceptable, even incomplete. Please state details and price. Anywhere.—Briscoe, 27 De Vere Gardens, Ilford, Essex. (Tel: 01-554 6631.)

SALE: Heathkit DX-100U Tx, AM/CW, price £35. Receiver Type DST-100, covering 50 kHz to 30 MHz, with PSU, £25.—Wadsworth, G3OLP, 26 Summerfield Road, Todmorden (2791), Lancs.

FOR SALE: National HRO 4-gang condenser gear box and dial, £2-20; HRO gear box and dial, £2; National in-line gear box, £2.—McCallum, Halloween Cottage, Forest Road East, Horsley, Surrey.

EXCHANGE or SELL: K.W. Vanguard Tx, AM/CW, in FB condition, £30. Would swap for Ten-Tech PM3A or good Rx, W-H-Y?—Stampton, G3ZDR, QTHR, or ring Gravesend 63284.

WANTED: Trio 9R-59D or similar communications receiver. Price, condition and details, pse.—Raven, Wedgwood, Green Lane West, Rackheath, Norwich, NOR.02Z, Norfolk.

FOR SALE: Heathkit RG-1 receiver, assembled, with two handbooks, £50. Collect or carriage extra.—Myers, 19 The Drive, London, N.W.11. (Tel: 01-455 2496).

FOR SALE: Eddystone 940 receiver with plinth speaker and ATU, as-new and in mint condition, £100.—Ring Rogers, 021-550 2152 (Halesowen).

WANTED: Manuals for National HRO-5T and Bendix RA-1B receivers.—Edwards, Flat A, 241 Hyde Park Road, Leeds, 6.

SALE: K.W. Vespa Mk. I with AC/PSU, in good condition, £75 or near offer. Prefer buyer collects.—Nettleton, G3YED, QTHR.

SALE: Seven 6146's, £3. Five 5B/255M's, £2. DG7-5 CRT, £1-25. Two KT88's, 75p. Three 829's, £1. Four 6080's, £1. Three 807's, 25p. Three E180F's, 75p. Four E810F's, £1. DET-29, £1-25. Two 4CX250F's and one base, £10. Avo VTVM, £5. Cossor DB 'scope, £15. Racial RA-17 tuning heart, home-built IF strip, £8-50. One MHz xtal oscillator in oven, £1-75. Xtal oscillator, 10 kHz, £1-25. UHF tuner, 75p. Woden UM3 mod. xformer, £3. Dow-key coax relay, 28v. DC actuation, £2; similar 48v. DC, £2; ditto 220v. AC, £2-50. R.C.A. crystal Wavemeter, coverage 2-5 to 20 MHz, complete with spares, £12-50. About 50 yds. 50-ohm coax, £2-50. Mains xformer 1100-0-1100v. at 200 mA, £2-50.—Ring Cox, West Forest 5649 (Wokingham, Berks.).

PLEASE Help! Wanted to buy, hire or borrow manual or other relevant information on Dartronic Model 415 Oscilloscope. Offering £5 for manual or a complete copy.—Basilier, SM5ASO, Floragatan 15, S-752 28 Upsala, Sweden.

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WANTED: Eddystone EC-10 Rx, Mk. I or Mk. II. Also 4CX250B with base, or complete as two-metre PA.—Scott, GM8BDX, Manderston Stables, Duns, Berwickshire, Scotland.

WANTED: BRT-400E and AR88D receivers. Must be in good condition. Dealers only. (Lancs.)—Box No. 5008, Short Wave Magazine, Ltd., 55 Victoria Street, London, S.W.1.

FOR SALE: In mint condition, a BC-221 frequency meter, built-in stabilised PSU, with all charts and manual, £30 or near offer. Also Aerial Tuning Unit, similar Z-match, £5-50.—Rawlinson, G8BJR, QTHR.

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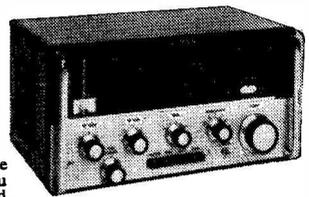
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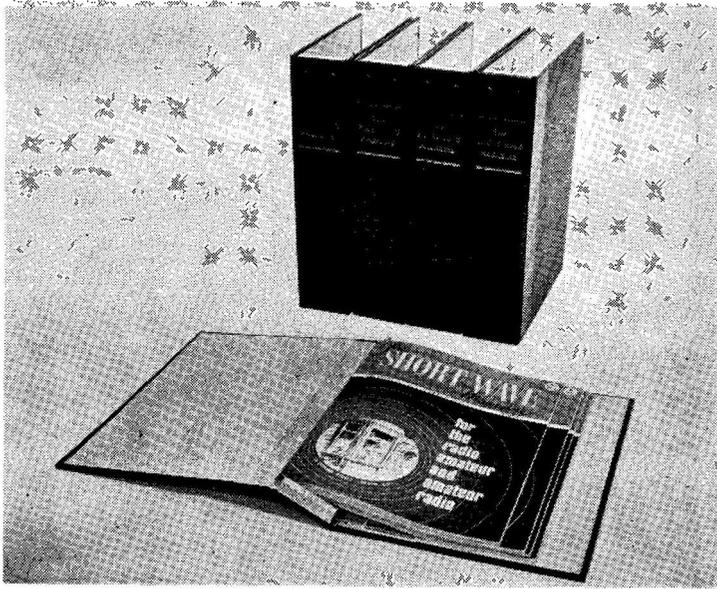
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